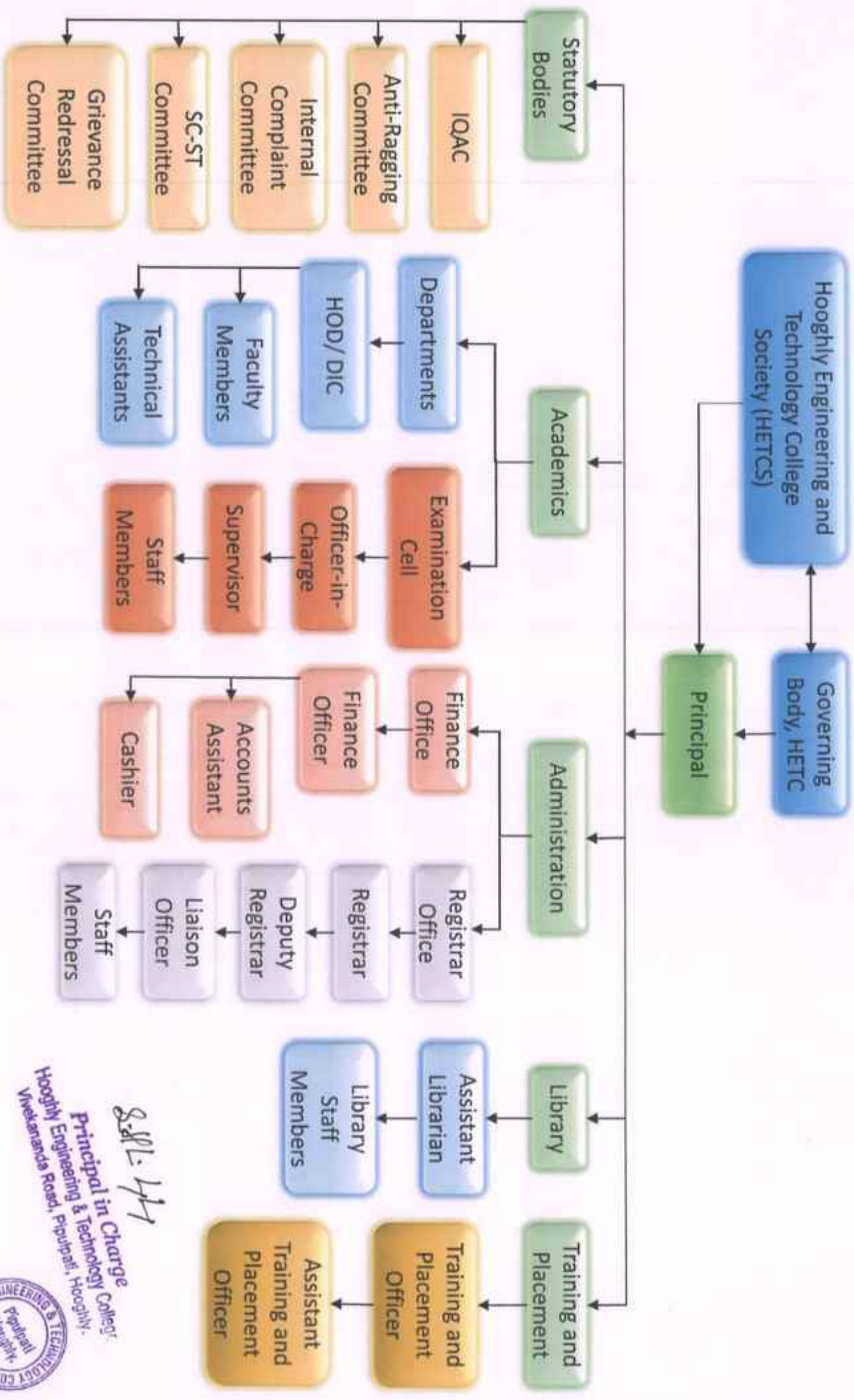


1.1.1

Organogram

Organogram of Hooghly Engineering & Technology College (HETC)



S.L.L. 44

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipuria, Hooghly.



1.1.1

Minutes of Academic Committee

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

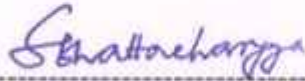
Date: 15/09/2018

NOTICE

A meeting of the Academic Committee of this college will be held on 18/09/2018 at 1.00 PM in the office of the principal to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis /feedback / action plan / information of their respective departments / section as their input is invaluable in shaping the academic experience at this esteemed institution.

Agenda:

- 1) Progress of Syllabus coverage till Sept, 2018
- 2) Discussion on upcoming Webinar
- 3) Class Routine Analysis
- 4) Miscellaneous



Prof. (Dr.) Sumanta Bhattacharyya, Principal, HETC

Members Present:

- 1) Prof (Dr.) Sumanta Bhattacharyya, (Convenor)
- 2) Prof (Dr.) T.K Bandopadhyay
- 3) Dr. Smitadhi Ganguly
- 4) Dr. Avijit Maity
- 5) Dr. Nakul Ch. Mondal
- 6) Dr. Tarak Kumar Bandopadhyay
- 7) Dr. Aishwarya Mukherjee
- 8) Dr. Pratyay Debnath
- 9) Ms. Arpita Chattopadhyay
- 10) Mr. Rupam Some
- 11) Mr. Anikendu Maitra
- 12) Ms. Sreyasi Rupa De
- 13) Mr. Subhojit Malik
- 14) Mr. Subhajit Roy
- 15) Mr. Dibyendu Samanta
- 16) Mr. Jagadish Bhattacharya

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Minutes of the Academic Committee Meeting held on 18/09/2018 in the office of the principal on the following agenda:

- 1) Progress of Syllabus coverage till Sept, 2018
- 2) Discussion on upcoming Webinar
- 3) Class Routine Analysis
- 4) Miscellaneous

Attendees:

Members Present:

- 1) Prof (Dr.) Sumanta Bhattacharya, (Convenor)
- 2) Prof (Dr.) T.K Bandopadhyay
- 3) Dr. Smitadhi Ganguly
- 4) Dr. Avijit Maity
- 5) Dr. Nakul Ch. Mondal
- 6) Dr. Tarak Kumar Bandopadhyay
- 7) Dr. Aishwarya Mukherjee
- 8) Dr. Pratyay Debnath
- 9) Ms. Arpita Chattopadhyay
- 10) Mr. Rupam Some
- 11) Mr. Anikendu Maitra
- 12) Ms. Sreyasi Rupa De
- 13) Mr. Subhojit Malik
- 14) Mr. Subhajit Roy
- 15) Mr. Dibyendu Samanta
- 16) Mr. Jagadish Bhattacharya

Minutes

1. Progress of Syllabus coverage till Sept, 2018: 75% syllabus coverage by the end of September and encouraging meritorious students in each department to enhance their individual performance.

2. Discussion on upcoming Seminar: The academic committee has decided to arrange a One-day Workshop on "IOT & Home Automation" under the guidance of Hooghly Engineering & Technology College Society Skill Development Centre in collaboration with MAKUT in October, 2018.

The Committee has also decided to arrange a Workshop on "Arduino & IOT" by ECE Dept. in association with TEKNIK Industrial Classrooms in January 2019.

3. Class Routine Analysis:

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

The committee discussed to develop class routines of individual streams as per AICTE & MAKAUT norms to meet the challenges of completion of syllabus, to highlight variety of good technical topics in front of the students and to arrange question and answer session for individual subjects.

4. Miscellaneous: The committee briefly discussed department wise class attendance (75% attendance is mandatory).



Prof. (Dr.) Sumanta Bhattacharyya, Principal, HETC

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

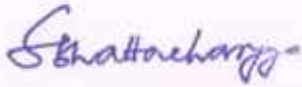
Date: 12/08/2019

NOTICE

A meeting of the Academic Committee of this college will be held on 16/08/2019 (Tuesday) at 2.00 PM in the office of the principal to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis /feedback / action plan / information of their respective departments / section.

Agenda:

- 1) Functioning of Departmental committee
- 2) Discussion on upcoming Webinar
- 3) Miscellaneous



Prof. (Dr.) Sumanta Bhattacharyya, Principal, HETC

Members Present:

- 1) Dr. Smitadhi Ganguly (Convenor)
- 2) Dr. Tarak Kumar Bandopadhyay
- 3) Dr. Avijit Maity
- 4) Ms. Sreyasi Rupa Dey
- 5) Dr. Aishwarya Mukherjee
- 6) Ms. Arpita Chattopadhyay
- 7) Mr. Dibyendu Samanta
- 8) Mr. Jagadish Bhattacharya
- 9) Mr. Anikendu Maitra
- 10) Dr. Nakul Ch. Mondal

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Minutes of the Academic Committee Meeting held on 16/08/2019 in the office of the principal on the following agenda:

- 1) Functioning of Departmental committee
- 2) Discussion on upcoming Webinar
- 3) Miscellaneous

Attendees:

Members Present:

- 1) Dr. Smitadhi Ganguly (Convenor)
- 2) Dr. Tarak Kumar Bandopadhyay
- 3) Dr. Avijit Maity
- 4) Ms. Sreyasi Rupa Dey
- 5) Dr. Aishwarya Mukherjee
- 6) Ms. Arpita Chattopadhyay
- 7) Mr. Dibyendu Samanta
- 8) Mr. Jagadish Bhattacharya
- 9) Mr. Anikendu Maitra
- 10) Dr. Nakul Ch. Mondal

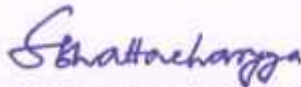
1. Functioning of Departmental committee: Departmental Academic Committee are being carried out by all the departments for smooth functioning individual academics activities.

2. Discussion on upcoming Seminar:

The academic committee has decided to arrange a One-day Seminar on "Biometric Security" in October 2019. We invite Dr. Somnath Dey, Associate Professor, Department of CSE, IIT Indore as the featured speaker for this great seminar.

The Committee has also decided to organize a seminar on Intellectual Property Rights (IPRs) in January 2020. Prof. Debesh Das, Jadavpur University, Kolkata is invited as honorable Guest Speaker for this great seminar.

3. Miscellaneous: The committee has briefly discussed department-wise class attendance and encouraged paper publication and other vital issues laboratory issues, library issues etc.



Prof. (Dr.) Sumanta Bhattacharyya, Principal, HETC

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Date: 20.10.2020

NOTICE

An Academic Committee meeting of the college will be held in online mode on 21/10/2020 at 4.00 PM to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis / information of their respective departments / section.

Agenda:

- 1) Discussion on proper conduction of Online Classes.
- 2) Discussion on conduction of Webinar.
- 3) Miscellaneous

Avijit Maity 20/10/2020
Dr. Avijit Maity, Principal in Charge, HETC

Members Present:

- 1) Dr. Smitadhi Ganguly (Convenor)
- 2) Ms. Sreyasi Rupa Dey
- 3) Mr. Anikendu Maitra
- 4) Dr. Aishwarya Mukherjee
- 5) Ms. Arpita Chattopadhyay
- 6) Dr. Dibyendu Samanta
- 7) Mr. Jagadish Bhattacharya
- 8) Dr. Nakul Ch. Mondal

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Minutes of the Academic Committee Meeting held on 21/10/2020 in the office of the principal on the following agenda:

- 1) Discussion on proper conduction of Online Classes.
- 2) Discussion on conduction of Webinar.
- 3) Miscellaneous
- 4)

Attendees:

- 1) Dr. Smitadhi Ganguly
- 2) Ms. Sreyasi Rupa Dey
- 3) Mr. Anikendu Maitra
- 4) Dr. Aishwarya Mukherjee
- 5) Ms. Arpita Chattopadhyay
- 6) Dr. Dibyendu Samanta
- 7) Mr. Jagadish Bhattacharya
- 8) Dr. Nakul Ch. Mondal

Minutes:

1. Discussion on proper conduction of Online Classes.

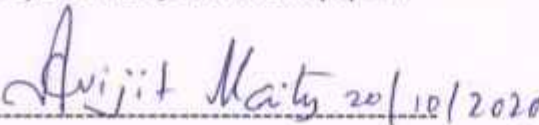
The committee has discussed in detail regarding proper conduction of department-wise online classes in user friendly mode and proper monitoring of attendance is also required by all faculty members as well as technical assistants (75% attendance mandatory).

2. Discussion on conduction of Webinar.

The Committee has decided to organize a Webinar on "Ethical Hacking" in February, 2021 by Electronics & Communication Engineering Department and also requested other department representatives to take initiative for future conduction of webinars on recent technological trends.

3. Miscellaneous.

A brief discussion on proper conduction of Final year projects and encouraging publication of subsequent final year student papers.



Dr. Avijit Maity, Principal in Charge, HETC

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Date: 07/04/2021

NOTICE

An Online meeting of the Academic Committee of the college will be held on 09/04/2021 at 4.00 pm to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis /feedback / action plan / information of their respective departments.

Agenda:

1. Academic Progress of all departments.
2. Monitoring Online attendance of students.
3. Miscellaneous.

8/2 07-04-21

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Members Present:

- 1) Mr. Tanumoy Ghosh (Convenor)
- 2) Dr. Avijit Maity
- 3) Ms. Sreyasi Rupa Dey
- 4) Dr. Aishwarya Mukherjee
- 5) Ms. Arpita Chattopadhyay
- 6) Mr. Dibyendu Samanta
- 7) Mr. Jagadish Bhattacharya
- 8) Mr. Anikendu Maitra
- 9) Dr. Nakul Ch. Mondal
- 10) Mr. Samir Ghosh

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Minutes of the Online Meeting of Academic Committee held on 09/04/2021 on the following agenda:

1. Academic Progress of all departments.
2. Monitoring Online attendance of students.
3. Miscellaneous.

Attendees:

- 1) Mr. Tanumoy Ghosh (Convenor)
- 2) Dr. Avijit Maity
- 3) Ms. Sreyasi Rupa Dey
- 4) Dr. Aishwarya Mukherjee
- 5) Ms. Arpita Chattopadhyay
- 6) Mr. Dibyendu Samanta
- 7) Mr. Jagadish Bhattacharya
- 8) Mr. Anikendu Maitra
- 9) Dr. Nakul Ch. Mondal
- 10) Mr. Samir Ghosh

Minutes:

1. Academic Progress of all departments.

Academic Progress of all departments were discussed in detail in the meeting, and it was seen that approximately 70% syllabus has already been covered by all the departments by the end of March 2021.

2. Monitoring Online attendance of students.

The Committee members unanimously decided that mentors should speak to individual students having less attendance in online classes to motivate them and an undertaking must be taken from the students having online attendance less than 60% to improve his/ her academic efforts.

3. Miscellaneous.

The Principal in charge requested the HODs/DICs to convey the messages to all teachers to submit online class report up to 09/04/2021 in prescribed format.

SG 09.04.21

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Date: 03/09/2021

NOTICE

A meeting of the Students Academic Committee of this college will be held on 06/09/2021 at 3.00 PM in the office of the principal to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis /feedback / action plan / information of their respective departments / section.

Agenda

- 1) Discussion to organize Webinar.
- 2) Discussion on students' attendance
- 3) Miscellaneous

S. Smitadhi Ganguly 03.09.21

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Members Present:

- 1) Mr. Tanumoy Ghosh (Convenor) *T. Ghosh*
- 2) Dr. Avijit Maity *Avijit Maity*
- 3) Ms. Sreyasi Rupa Dey *Sreyasi Rupa Dey 3/9/21*
- 4) Dr. Aishwarya Mukherjee *Mukherjee 3/9/21*
- 5) Ms. Arpita Chattopadhyay *Arpita Chattopadhyay*
- 6) Mr. Dibyendu Samanta *Dibyendu Samanta 3/9/21*
- 7) Mr. Jagadish Bhattacharya *Jagadish Bhattacharya*
- 8) Mr. Anikendu Maitra *Anikendu Maitra 3/9/21*
- 9) Dr. Nakul Ch. Mondal *Nakul Ch. Mondal 3-9-21*
- 10) Mr. Samir Ghosh *Samir Ghosh*

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Minutes of the Academic Committee Meeting held on 06/09/2021 (Tuesday) in the office of the principal on the following agenda:

- 1) Discussion to organize Webinar.
- 2) Discussion on students' attendance
- 3) Miscellaneous

Attendees:

Mr. Tanumoy Ghosh (Convenor)

Dr. Avijit Maitry

Ms. Sreyasi Rupa Dey

Dr. Aishwarya Mukherjee

Ms. Arpita Chattopadhyay

Mr. Dibyendu Samanta

Mr. Jagadish Bhattacharya

Mr. Anikendu Maitra

Dr. Nakul Ch. Mondal

Mr. Samir Ghosh

1. Discussion on upcoming Webinar: Committee has decided to organize One hour webinar, titled "Intellectual Property Rights Awareness Program". This webinar will be conducted by Internal Quality Assurance Cell (IQAC) of HETC collaborated with National Intellectual Property Awareness Mission (NIPAM) launched by Govt. of India, to enhance the knowledge of students, faculties, and technical assistants of this esteemed institution.

2. Discussion on students' attendance: Chairman of the committee requested the HODs/DICs to convey the message to all faculties and technical assistants to submit the students' class attendance report up to 21 Sept, 2021 in prescribed format available in Z Drive.

3. Miscellaneous: The committee briefly discussed department-wise student attendance, 80% syllabus coverage by October 2021, final year projects and encouraging publication of subsequent final year student papers.

S. P. L. L. 06.09.21

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Date: 07/05/2022

NOTICE

A meeting of the Academic Committee of this college will be held on 10/05/2022 at 1.00 PM in the office of the principal to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis /feedback / action plan / information of their respective departments / section.

Agenda:

- 1> Coming even semester examinations, 2022.
- 2> Class Time-table for next odd semesters, 2022.
- 3> Functioning of Departmental committee
- 4> Miscellaneous

S. Smitadhi Ganguly 07.05.22

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Members Present:

- 1) Dr. Tanumoy Ghosh (Convener)
- 2) Dr. Avijit Maity
- 3) Dr. Rajesh Patra
- 4) Dr. Rajdip Paul
- 5) Mr. Swarup Samanta
- 6) Mr. Dibyendu Samanta
- 7) Mr. Anikendu Maitra
- 8) Dr. Nakul Ch. Mondal
- 9) Mr. Samir Ghosh

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Proceedings of the Academic Committee Meeting held on 10/05/2022 in the office of the principal on the following agenda:

- 1) Coming even semester examinations, 2022
- 2) Class Time-table for next odd semesters, 2022.
- 3) Functioning of Departmental committee
- 4) Miscellaneous

Attendees:

1. Dr. Tanumoy Ghosh (Convener)
2. Dr. Avijit Maity
3. Dr. Rajesh Patra
4. Dr. Rajdip Paul
5. Mr. Swarup Samanta
6. Mr. Dibyendu Samanta
7. Mr. Anikendu Maitra
8. Dr. Nakul Ch. Mondal
9. Mr. Samir Ghosh

1. Coming even semester examinations, 2022: Committee discussed about present semester examinations, for maintaining proper rule and regulation as per university.
2. Class Time-table for next odd semesters, 2022: Advised all Department to prepare Routine and subject allocation for all faculties of next ODD semester.
3. Departmental Academic Committee are being carried out by all the departments for smooth functioning individual academics activities.
4. Miscellaneous:

The committee briefly discussed department wise student attendance, 75% syllabus coverage by 01-05-2022 and individual performance of meritorious students in each department.

Smitadhi Ganguly 10.05.22

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Date: 19/08/2022

NOTICE

A meeting of the Academic Committee of this college will be held on 20/08/2022 at 1.00 PM in the office of the principal to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis /feedback / action plan / information of their respective departments / section.

Agenda

- 1) Confirmation of the minutes of the last meeting.
- 2) Discussion on upcoming Webinar:
- 3) Academic progress as per Class Routine
- 4) Miscellaneous

S. Smitadhi Ganguly 19-08-22

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Members Present:

- 1) Dr. Tanumoy Ghosh (Convenor)
- 2) Dr. Avijit Maity *A. Maity 19/8/22*
- 3) Dr. Rajesh Patra *R. Patra 19/8/22*
- 4) Dr. Rajdip Paul
- 5) Mr. Swarup Samanta *sw*
- 6) Mr. Dibyendu Samanta *D. Samanta 19/8/22*
- 7) Mr. Anikendu Maitra *A. Maitra 19/8/22*
- 8) Dr. Nakul Ch. Mondal *N. Mondal 19.08.22*
- 9) Mr. Samir Ghosh *S. Ghosh*

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Minutes of the Academic Committee Meeting held on 20/08/2022 in the office of the principal on the following agenda:

- 1) Confirmation of the minutes of the last meeting.
- 2) Discussion on upcoming Webinar;
- 3) Academic progress as per Class Routine
- 4) Miscellaneous

Attendees:

Dr. Tamunoy Ghosh (Convener)

Dr. Avijit Maity

Dr. Rajesh Patra

Dr. Rajdip Paul

Mr. Swarup Samanta

Mr. Dibyendu Samanta

Mr. Anikendu Maitra

Dr. Nakul Ch. Mondal

Mr. Samir Ghosh

1. Confirmation of the minutes of the last meeting: Minutes of last meeting was read out in front of the members of the committee and was confirmed.

2. Discussion on upcoming Webinar:

The committee has decided to organize a Webinar on "Embedded Systems and its Applications" in February by Department of Electronics and Communication, 2023 in the seminar room of the college. It's also recommended that the Department of Electronics and Telecommunication Distinguished Speaker Prof. (Dr.) Swaroop Kumar Mitra, HOD, Department of Electronics and Communication can invite as a speaker.

Committee members have decided to organize 3 days' Workshop on "Advanced Surveying using DGPS and Total Station" in March, 2022 by Civil Engineering Department. It is also decided to invite Prof. Subhabrata Ghosh, HOD, GIS & GPS & Lecturer in Survey Engineering at West Bengal Survey Institute, Mr. Prabhut Kr. Mondal, Assistant Manager of Skipper Technologies India Private Limited., Mr. Amit Kumar, Senior Engineer of Skipper Technologies India Private Limited., Mr. Utpal Mondal, Application Engineer of Skipper Technologies India Private Limited., Mr. Mrinal Mondal, Application Engineer of Skipper Technologies India Private Limited as the speaker for this workshop.

3. Progress of NAAC Accreditation:

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Committee members have discussed about the progress of NAAC accreditation work and asked various stages of composition such as self-study report preparation, peer team visit, assessment, and accreditation decision. The committee decided to take more initiative in our institution's accreditation process.

4. Miscellaneous:

The committee briefly discussed department-wise student attendance, 80% syllabus coverage by October 2022, final year projects and encouraging publication of subsequent final year student papers.

Smitadhi Ganguly, 20.08.22

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Date: 04/02/2023

NOTICE

A meeting of the Academic Committee of this college will be held on 07/02/2023 (Thursday) at 3.00 PM in the office of the principal to discuss the following academic related matters. All the members of the said committee are hereby requested to attend the meeting along with relevant analysis /feedback / action plan / information of their respective departments / section.

Agenda

1. Professional development opportunities for faculty members.
2. Discussion on Upcoming Technical Talk & Seminar.
3. Miscellaneous, if any

04.02.23

Dr. Smitadhi Ganguly, Principal in Charge, HETC

Members Present:

- 1) Dr. Tanumoy Ghosh (Convenor) *Tanumoy Ghosh*
- 2) Dr. Avijit Maity *Avijit Maity 07/02/23*
- 3) Dr. Rajesh Patra *R. Patra 04/02/2023*
- 4) Dr. Rajdip Paul
- 5) Mr. Swarup Samanta *Swarup Samanta*
- 6) Mr. Dibyendu Samanta *D. Samanta 04/02/23*
- 7) Mr. Anikendu Maitra *Anikendu Maitra 4/2/23*
- 8) Dr. Nakul Ch. Mondal *Nakul Ch. Mondal 4/02/23*
- 9) Mr. Samir Ghosh *Samir Ghosh 04.02.23*

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

Minutes of the Academic Committee Meeting held on 07/02/2023 in the office of the principal on the following agenda:

1. Professional development opportunities for faculty members
2. Discussion on Upcoming Technical Talk & Seminar.
3. Miscellaneous, if any

Attendees:

Dr. Tanumoy Ghosh (Convenor)

Dr. Avijit Maity

Dr. Rajesh Patra

Dr. Rajdip Paul

Mr. Swarup Samanta

Mr. Dibyendu Samanta

Mr. Anikendu Maitra

Dr. Nakul Ch. Mondal

Mr. Samir Ghosh

Minutes:

1. Professional development opportunities for faculty members:

Committee decided to invite experts in the field of latest teaching methodologies and technologies to conduct sessions or give presentations on specialized topics. This could provide fresh perspectives and insights to faculty members also.

2. Discussion on upcoming Technical Talk & Seminar:

Committee suggest CSE & ECE Departments to organize a one-day National Conference on "Emerging Technologies in Computer Science & Electronics" in April, 2023. And committee additionally advised to invite as a speaker Dr. Tanmoy Pal, Assistant Professor, School of Mechatronics & Robotics, IEST Shibpur, Dr. C.M Jadhao, Principal, Mauli Group of Institution's College of Engineering & Technology Shegaon, Ajay P. Thakare, Professor in Electronics Engineering, Sipna College of Engineering, Amravati for this event.

Similarly, Committee also suggest The Electrical & Mechanical Engineering Dept. to organize another National Conference on "Recent Trends in Electrical & Mechanical Engineering" in April, 2023 in hybrid

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly,
Pin 712103, West Bengal

mode. Here committee additionally recommended Dr. Tridibesh Das, Associate Prof. in Dept. of Mechanical Engineering in Kalyani Govt. Engineering College, Dr. Tapan Pradhan, Associate Prof. Gradel, in Dept. of Electrical Engineering in NIT Silchar, Mr. Sandipan Sarkar, Principal Consultant at Enzen Global L.t.d. , consider as an eminent speakers.

3. Miscellaneous:

The committee briefly discussed department wise student attendance, 75% syllabus coverage by 01-05-2020 and individual performance of meritorious students in each department.

SG 07.02.23

Dr. Smitadhi Ganguly, Principal in Charge, HETC

1.1.1

Minutes of Departmental Meetings

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



21.07.2018

Notice for Faculty Members & Technical Staffs of ECE Department

All the Faculty members & Technical Staffs of E.C.E Department are hereby informed that a meeting will be held in faculty room on 25.07.2018 at 5:00 P.M to discuss various agendas stated below.

All the members of ECE Dept. are requested to attend the meeting.

Agenda:

1. Project distribution of 4th year ECE students.
2. Student Mentoring.
3. Departmental Seminar.
4. Departmental Workshop.
5. Student attendance.
6. Submission of Lesson plan and Lab plan.
7. Submission of Course diary and Lab diary.
8. Departmental Newsletter.
9. Miscellaneous.

Copy to:

1. Principal sir.

Swagata
21/7/18
Prof. Swagata Mallik
D.I.C (ECE), HETC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Seen by

Swagata
21/7/18

[Signature]
21/7/18

[Signature]
21/7/18

[Signature]
21-7-18

[Signature]
21/7/18

[Signature]
21/7/18

SRS
21/7/18

[Signature]
24/7/18

[Signature]
21/07/18

[Signature]
21.7.18

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



Minutes of the departmental meeting of held on 25 .07.18 at 05:00 PM

1. Prof. S.Mallik, D.I.C., E.C.E, was on the chair and started the meeting.
2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
3. It was decided that project allocation for the final year students of ECE would be completed by 14th August, 2018. All faculty members will submit their domain of interest within 4th August, 2018.
4. New mentors were assigned for 1st year and 2nd year students of ECE. All the existing student mentors were requested to keep regular vigil on their students and counsel them, as needed.
5. Discussions were held on the conduction of departmental seminars throughout the semester and the departmental Seminar Committee members were asked to update the schedule of seminars to be given.
6. Faculty members were requested to take initiative regarding arrangement of departmental workshop for the ensuing semester.
7. Faculty and staff members were requested to update the cumulative student attendances on the following dates - 18th August, 15th September, 13th October and 17th November.
8. Departmental faculty members and technical staffs were requested to submit their respective Lesson Plans and Lab Plans for this semester by 1st August, 2018.
9. Departmental faculty members and technical staffs were requested to submit the Course Diary and Lab Diary for the previous semester by 2nd August, 2018.
10. Discussions were held regarding the publishing of the departmental newsletter (2018 issue).
11. Prof. B. Basak was intimated to update the departmental library register book by 26th August, 2018.
12. All faculty and staff members were requested to identify the requirement of stationary items for smooth conduction of lab and theory classes for the current semester and notify the same to the concerned authority.
13. There being no other issues, the meeting ended with a vote of thanks.

Seen by

Shan's
27/7/18

TSR
27.7.18

[Signature]
27/7/18

Prati Mukherjee
27/7/18

[Signature]
27/07/18

[Signature]
27/7/18

[Signature]
27/7/18













[Signature]
27/7/18

[Signature]
27.7.18

[Signature]
27.7.18

[Signature]
27/7/18

**Attendance sheet of the members of PAC, ECE department for PAC meeting held
on 25th of July, 2018**

SL NO	Name of Faculty members & TA	Signature
1	Manish Kumar Singh	 25/07/18
2	Subhajit Roy	 25/07/18
3	Writi Mitra	 25/07/18
4	Debkumar Sheet	 25/07/18
5	Subhojit Malik	 25/07/18
6	Biswajit Basak	 25.7.18
7	Swarup Samanta	 25/7/18
8	Jagadish Bhattacharya	 25/7/18
9	Madhumita Datta	 Datta 25.07.18
10	Swagata Mallik	 25/7/18
11	Bidisha Sengupta	 TSSG 25.7.18
12	Shyamali Gayen	 25.7.18

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
PIN-712103



11.06.2019

NOTICE

All the Faculty members & Technical Staffs of E.C.E Department are hereby informed that a meeting will be held in Seminar Hall on 11.06.2019 at 2:30 P.M to discuss various agendas stated below.

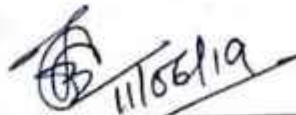
All the members of ECE Dept. are requested to attend the meeting.

Agenda:

1. Attendance of students
2. Activities of Mentors and MAR.
3. Activities of MOOCS.
4. Discussion related to Projects of Final Year students.
5. Internal / Improvement Tests and pattern of questions to be set
6. Implementation of modern views of teaching-learning
7. Internal / Improvement Tests for Backlog students.
8. Subjects and Lab allocation.
9. Preparation of Lesson Plan and Lab Plan.
10. Miscellaneous.

Copy to:

1. Principal.
2. H.O.D (ECE).


11/06/19

Mr. Jagadish Bhattacharya
Coordinator (ECE) of
HOD/DIC/Coordinator, HETC
Dept. of ECE, HETC, Hooghly.

HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLY
PIN-712103



12.06.2019


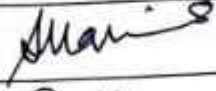
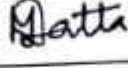
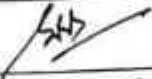





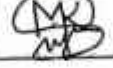
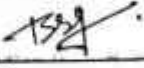
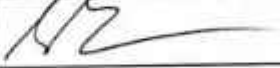
Minutes of the meeting held on 11.06.2019 in the office Seminar Hall at 02:30 PM on the following agendas:

1. Attendance of Students.
2. Activities of Mentors and MAR.
3. Activities of MOOCS.
4. Discussion related to Projects of Final Year students.
5. Internal/ Improvement Tests and pattern of questions to be set.
6. Implementation of modern views of teaching-learning.
7. Internal/ Improvement Tests for backlog students.
8. Subjects and Lab allocation.
9. Preparation of Lesson Plan and Lab Plan.
10. Miscellaneous.

On behalf of the H.O.D of the ECE department, the Coordinator of the ECE department, Mr. Jagadish Bhattacharya welcomed the Principal and all the members of the department and then started the proceedings of the meeting:

1. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
2. In the meeting, it was discussed that last month our University, MAKAUT send a letter dated 28.05.19 to all the principal/directors of the affiliated colleges under MAKAUT, WB. The letter addressed that to appear in the University Examinations 75 % attendance is mandatory for all the students of MAKAUT. The Inspector of Colleges, S.K Maity also mentioned that the University will very soon introduce Online Attendance for the students of different colleges affiliated to this University for the academic session (2019-2020). Everyone unanimously agreed that from the very beginning of the coming semester, students must be motivated and warned by the concerned subject teachers and mentors for improving their attendance in both lab and theory classes.
3. Following the guidelines from University, HETC had already assigned a Single Point of Contact (SPOC) for the Mentorship of students and SPOC for the activities related to Mandatory Additional Requirements (MAR). The SPOCs for Mentorship and MAR are Mr. Rupam Some and Mr. Sumanta Daw respectively. The University also advised assigning Departmental Coordinator for activities related to mentoring. Mr. Deb Kumar Sheet had been assigned as the Departmental Coordinator for Mentorship. Also, a three-member committee had been formed for MAR-related activities. In the meeting, all the mentors discuss various issues related to MAR and the Mentorship of Students.
4. In the meeting, the principal explained the role of the mentors in encouraging the students to do MOOCS courses. He also advised the faculty members to do courses using the MOOCS platform. He shared his views regarding our college's need for a SPOC for MOOCS activities.

Attendance of faculty members and technical staff of E.C.E Department for meeting
held on _____ : 11.06.2019

Name	Signature
Prof. (Dr.) T.K Bandyopadhyay (HOD)	
Asst. Prof. Jagadish Bhattacharya (Coordinator)	
Asst. Prof. Swagata Choudhury	
Asst. Prof. Madhumita Datta	
Asst. Prof. Swarup Samanta	
Asst. Prof. Biswajit Basak	
Asst. Prof. Subhojit Malik	
Asst. Prof. Deb Kumar Sheet	
Asst. Prof. Writi Mitra	
Asst. Prof. Subhajit Roy	
Asst. Prof. Manish Kumar Singh	
Mrs. Bidisha Sengupta	
Mrs. Shyamali Gayen	

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



06.08.2019

NOTICE

All the Faculty members & Technical Staffs of E.C.E Department are hereby informed that a meeting will be held in HOD's office room at 4:00 P.M to discuss various agendas stated below.


All the members of ECE Dept. are requested to attend the meeting.

Agenda:

1. Mentoring of Students.
2. Activities related to MAKAUT.
3. Activities related to NBA & NAAC.
4. Activities of MOOCS.
5. Final year Project.
6. Upgradation of Labs.
7. Miscellaneous.

Copy to:

1. Principal.
2. H.O.D (ECE).

 6/8/19

Mr. Jagadish Bhattacharya

Coordinator (Coordinator)
HOD/DIC, (ECE), HETC,
Dept. of ECE, HETC, Hooghly.

HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLY
PIN-712103




08.08.2019

Minutes of the meeting held on 06.08.2019 in the H.O. D's office room at 04:00 PM on the following agendas:

Agenda:

1. Mentoring of Students.
2. Activities related to MAKAUT.
3. Activities related to NBA & NAAC.
4. Activities of MOOCs.
5. Final year Project.
6. Upgradation of Labs.
7. Miscellaneous.

1. Prof. (Dr.) T.K. Bandopadhyay, H.O.D, E.C.E, was on the chair and instructed Mr. Jagadish Bhattacharya, the Coordinator of the department to start the meeting as per the agenda.
2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
3. Following the guidelines from the University, HETC had already assigned a Single Point of Contact (SPOC) for the MOOCs courses. The SPOC for MOOCs is Mr. Subhajit Roy.
4. All the departmental faculty and staff members are advised to update their Course files and Personal files as the college is preparing for the accreditation process.
5. It was decided that project allocation for the final year students of ECE would be completed by 14th August 2019. All faculty members will submit their domain of interest by 10th August 2019.
6. Faculty members and technical staff were requested to submit requisitions (if any) for the upgradation and maintenance of the labs to be taken up by them in the forthcoming semester.
7. Faculty members and technical assistants were requested to maintain the attendance records of the students properly in a channel file.
8. There being no other issues, the meeting ended with a vote of thanks to the chair.



Mr. Jagadish Bhattacharya
Coordinator (ECE), HETC

HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Copy to: Principal

Attendance of faculty members and technical staff of E.C.E Department for meeting held on _____ : 06.08.19

Name	Signature
Prof. (Dr.) T.K Bandyopadhyay (HOD)	TKB
Asst. Prof. Jagadish Bhattacharya (Coordinator)	JB
Asst. Prof. Swagata Choudhury	Swagata
Asst. Prof. Madhumita Datta	Datta
Asst. Prof. Swarup Samanta	SS/6/8/19
Asst. Prof. Biswajit Basak	B
Asst. Prof. Subhojit Malik	Subhojit
Asst. Prof. Deb Kumar Sheet	DKS
Asst. Prof. Writi Mitra	Writi
Asst. Prof. Subhajit Roy	Subhajit
Asst. Prof. Manish Kumar Singh	Manish
Mrs. Bidisha Sengupta	Bidisha
Mrs. Shyamali Gayen	Shyamali

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
PIN-712103



17.01.2020

NOTICE

All the Faculty members & Technical Staff of the E.C.E Department are hereby informed that an online meeting will be held on 17.01.2020 at 11:00 A.M. to discuss various agendas stated below.

All the members of the ECE Dept. are requested to attend the meeting.

Agenda:

1. Upgradation and maintenance of departmental laboratories.
2. Assignment of faculty in charge of each lab.
3. Student training.
4. Miscellaneous.

Copy to:

1. Principal.
2. H.O.D
3. Copy to file

 17/01/2020

(MR. JAGADISH BHATTACHARYA)
Coordinator, ECE, HETC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI, P.O. & DIST.: HOOGHLY, PIN-712103

Date: 18.01.20

Minutes of the departmental meeting

Minutes of the ECE departmental online meeting of HETC held on 17.01.2020 at 11:00 A.M on the following agenda:

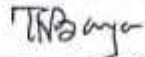

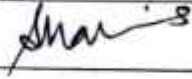
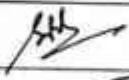





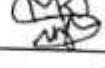
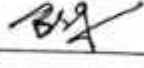

Agenda:

1. Upgradation and maintenance of departmental laboratories.
2. Assignment of faculty in charge of each lab.
3. Student training.
4. Miscellaneous.

1. The H.O.D of the ECE department, Prof. (Dr.) Tarak Kumar Bandyopadhyay was on the chair and instructed Mr. Jagadish Bhattacharya, Coordinator, E.C.E., to start the proceeding of the meeting as per the agenda.
2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
3. The faculty members of the respective lab informed the H.O.D. of the department for the procurement of new trainer kits and repairs of some old trainer kits.
4. Mr. Swarup Samanta informed us that a PLL trainer kit and a Noise kit are required for the Analog Communication Lab
5. Mr. Subhojit Malik informed the HOD that the DSP trainer kit Texas 6713 is required to repair.
6. Mrs. Swagata Mallik informed us that discrete components are required for Analog Electronics Lab and Digital Electronics Lab.
- 7.
8. There being no other issues, the meeting ended with a vote of thanks to the chair.


(MR. JAGADISH BHATTACHARYA)
Coordinator, ECE, HETC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Attendance of faculty members and technical staff of E.C.E Department for meeting held on _____ : 17.01.2020

Name	Signature
Prof. (Dr.) T.K Bandyopadhyay (HOD)	
Asst. Prof. Jagadish Bhattacharya (Coordinator)	
Asst. Prof. Swagata Choudhury	
Asst. Prof. Madhumita Datta	
Asst. Prof. Swarup Samanta	
Asst. Prof. Biswajit Basak	
Asst. Prof. Subhojit Malik	
Asst. Prof. Deb Kumar Sheet	
Asst. Prof. Writi Mitra	
Asst. Prof. Subhajit Roy	
Asst. Prof. Manish Kumar Singh	
Mrs. Bidisha Sengupta	
Mrs. Shyamali Gayen	

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



14.07.2020

NOTICE

All the Faculty members and technical Staff of the E.C.E Department are hereby informed that an online meeting will be held on 15.07.2020 at 4:30 P.M. to discuss various agendas stated below.

All the members of the ECE Dept. are requested to attend the meeting.

Agenda:

1. Online mode class conduct.
2. Preparation of Lesson plan and Lab plan.
3. Final year project allotment.
4. Miscellaneous.

Copy to:

1. Principal.
2. Copy to file


14/7/20

(MR. JAGADISH BHATTACHARYA)

Coordinator, ECE, HETC

HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI, P.O. & DIST.: HOOGHLY, PIN-712103

Date: 16.07.20

Minutes of the departmental meeting

Minutes of the ECE departmental online meeting of HETC held on 15th July 2020 using Google Meet at 5:30 P.M. to discuss various agendas stated below:


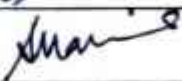




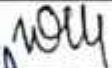




Agenda:

1. Online mode class conduct.
 2. Preparation of Lesson plan and Lab plan.
 3. Final year project allotment.
 4. Miscellaneous.
1. Mr. Jagadish Bhattacharya, Coordinator, E.C.E, was on the chair and started the meeting as per the agenda.
 2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
 3. All the faculty members and technical assistants are advised to create Google Classroom for both theoretical and practical subjects. Due to Covid-19 pandemic all the classes will be conducted through the Google Meet link shared in Google Classroom and Social media groups.
 4. All faculty must have handouts, PowerPoint presentations, and question banks of their respective subjects.
 5. All faculties and technical assistants are advised to prepare the Lesson plan and Lab plan for their respective subjects and submit it on or before 20th July 2020.
 6. Final year project groups are formed comprising four students in each group. Project Supervisors are allotted to them based on a lottery system
 7. All faculties and technical assistants are advised to maintain the attendance record both in Excel sheet/Google sheet and in HTML attendance.
 8. There being no other issues, the meeting ended with a vote of thanks to the chair.


(MR. JAGADISH BHATTACHARYA)

Coordinator, ECE, HETC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Attendance of faculty members and technical staff of E.C.E Department for meeting held on _____ : 15.07.2020

Name	Signature
Prof. (Dr.) T.K Bandyopadhyay (HOD)	
Asst. Prof. Jagadish Bhattacharya (Coordinator)	
Asst. Prof. Swagata Choudhury	
Asst. Prof. Madhumita Datta	
Asst. Prof. Swarup Samanta	
Asst. Prof. Biswajit Basak	
Asst. Prof. Subhojit Malik	
Asst. Prof. Deb Kumar Sheet	
Asst. Prof. Writi Mitra	
Asst. Prof. Subhajit Roy	
Asst. Prof. Manish Kumar Singh	
Mrs. Bidisha Sengupta	
Mrs. Shyamali Gayen	

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



26.03.2021

NOTICE

All the Faculty members and technical Staff of the E.C.E Department are hereby informed an online meeting will be held at 4:00 P.M. on 27.03.2022 to discuss various agendas stated below.

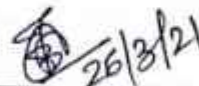
All the members of the ECE Dept. are requested to attend the meeting.

Agenda:

1. Online mode class conduct.
2. Activities of Mentoring.
3. Miscellaneous.

Copy to:

1. Principal.
2. Copy to file


26/3/21

(MR. JAGADISH BHATTACHARYA)
Coordinator, ECE, HETC

HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI, P.O. & DIST.: HOOGHLY, PIN-712103

Date: 27.03.21

Minutes of the departmental meeting

Minutes of the ECE departmental online meeting held at 4:00 P.M. on 27.03.2022 on the following agenda:

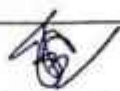
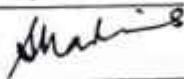


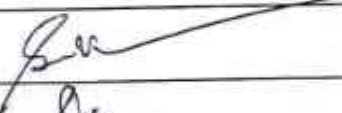




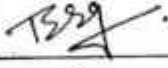

Agenda:

1. Online mode class conduct.
 2. Activities of Mentoring.
 3. Miscellaneous.
-
1. Mr. Jagadish Bhattacharya, Coordinator, E.C.E, was on the chair and started the meeting as per the agenda.
 2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
 1. All the faculty members and technical assistants are advised to create Google Classroom for both theoretical and practical subjects. Due to the Covid-19 pandemic, all the classes will be conducted through the Google Meet link shared in Google Classroom and Social media groups.
 3. All faculties and technical assistants are advised to share E-books and softcopy of the lab manuals. All concerned are advised to conduct most of the laboratory assignments using software, simulation, and application which are open source by nature. So, that students could do practical classes using computing devices.
 4. All mentors are advised to conduct monthly meetings with their respective mentees to boost their morale in this crisis time.
 5. All the mentors are advised to convey the message to the parents and guardians of the students that the higher authority of our college had extended the deadline to submit semester fees.
 6. There being no other issues, the meeting ended with a vote of thanks to the chair.


27/3/21

(MR. JAGADISH BHATTACHARYA)
Coordinator, ECE, HETC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Attendance of faculty members and technical staff of E.C.E Department for meeting held on _____ : 27. 03. 22

Name	Signature
Prof. (Dr.) T.K Bandyopadhyay (HOD)	
Asst. Prof. Jagadish Bhattacharya (Coordinator)	
Asst. Prof. Swagata Choudhury	
Asst. Prof. Madhumita Datta	
Asst. Prof. Swarup Samanta	
Asst. Prof. Biswajit Basak	
Asst. Prof. Subhojit Malik	
Asst. Prof. Deb Kumar Sheet	
Asst. Prof. Writi Mitra	
Asst. Prof. Subhajit Roy	
Asst. Prof. Manish Kumar Singh	
Mrs. Bidisha Sengupta	
Mrs. Shyamali Gayen	

(B) 21/1/22

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



03.09.2021

NOTICE

All the Faculty members & Technical Staff of the E.C.E Department are hereby informed that a meeting will be held on 4th September 2021 in the ECE Faculty room at 4:30 P.M. to discuss various agendas stated below.

All the members of the ECE Dept. are requested to attend the meeting.

Agenda:

1. Mentoring of Students.
2. Preparation of Lesson plan and Lab plan.
3. Final year Project.
4. Classes for Competitive exams.
5. Miscellaneous.

Copy to:

1. Principal.
2. Copy to file

 3/9/21

(MR. JAGADISH BHATTACHARYA)

Coordinator, ECE, HETC

HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI, P.O. & DIST.: HOOGHLY, PIN-712103

Date: 04.09.21

Minutes of the departmental meeting

Minutes of the ECE departmental meeting of HETC held on 4th September 2021 in the ECE Faculty room at 4:30 P.M. to discuss various agendas stated below:


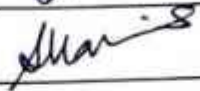


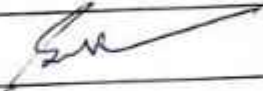





Agenda:

1. Mentoring of Students.
 2. Preparation of Lesson plan and Lab plan.
 3. Final year Project.
 4. Classes for Competitive exams.
 5. Miscellaneous.
1. Mr. Jagadish Bhattacharya, Coordinator, E.C.E, was on the chair and started the meeting as per the agenda.
 2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
 3. All the mentors are to conduct monthly meetings with their mentees and submit a report at the end of the semester.
 4. All faculties and technical assistants are advised to prepare the Lesson plan and Lab plan for their respective subjects and submit it on or before 6th September 2021.
 5. Final year project groups are formed comprising four students in each group. Project Supervisors are allotted to them based on a lottery system.
 6. The faculty members of the E.C.E department will conduct technical classes for Competitive exams.
 7. All faculties and technical assistants are advised to update all the documents required for the NAAC accreditation process.
 8. All faculty must have handouts, PowerPoint presentations, and question banks of their respective subjects.
 9. There being no other issues, the meeting ended with a vote of thanks to the chair.


(MR. JAGADISH BHATTACHARYA)

Coordinator, ECE, HETC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Attendance of faculty members and technical staff of E.C.E Department for meeting held on _____: 04.09.2021

Name	Signature
Prof. (Dr.) T.K Bandyopadhyay (HOD)	
Asst. Prof. Jagadish Bhattacharya (Coordinator)	
Asst. Prof. Swagata Choudhury	
Asst. Prof. Madhumita Datta	
Asst. Prof. Swarup Samanta	
Asst. Prof. Biswajit Basak	
Asst. Prof. Subhojit Malik	
Asst. Prof. Deb Kumar Sheet	
Asst. Prof. Writi Mitra	
Asst. Prof. Subhajit Roy	
Asst. Prof. Manish Kumar Singh	
Mrs. Bidisha Sengupta	
Mrs. Shyamali Gayen	

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



05.01.2022

NOTICE

All the Faculty members & Technical Staff of the E.C.E Department are hereby informed that a meeting will be held in the ECE Faculty room at 11:00 A.M. on 06.01.2022 to discuss various agendas stated below.

All the members of the ECE Dept. are requested to attend the meeting.

Agenda:

1. Subject distribution for the upcoming odd semester.
2. Preparation of Lesson plan and Lab Plan for the upcoming semester.
3. Activities related to NAAC.
4. Activities of MOOCs/MAR.
5. Miscellaneous.

Copy to:

1. Principal.
2. Copy to file


5/1/22

(MR. JAGADISH BHATTACHARYA)

Coordinator, ECE, HETC

HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI, P.O. & DIST.: HOOGHLY, PIN-712103

Date: 07.01.22

Minutes of the departmental meeting

Minutes of the ECE departmental meeting of HETC held on Wednesday, the 6th of January 2022 at 11:00 AM in the ECE faculty room on the following agenda:



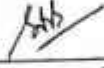






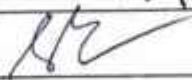
Agenda:

1. Subject distribution for the upcoming odd semester.
 2. Preparation of Lesson plan and Lab Plan for the upcoming semester.
 3. Activities related to NAAC.
 4. Activities of MOOCs/MAR.
 5. Miscellaneous.
-
1. Mr. Jagadish Bhattacharya, Coordinator, E.C.E, was on the chair and started the meeting as per the agenda.
 2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
 3. In the upcoming semester the ECE departmental faculties will teach subjects to CSE and EE along with its own department. The subject distribution was done accordingly. The students were given elective subjects from a basket of subjects prescribed in the MAKAUT syllabus based on the choice of majority votes via Google form.
 4. All faculties and technical assistants are advised to prepare the Lesson plan and Lab plan for their respective subjects and submit it on or before 31st January 2022.
 5. All faculties and technical assistants are advised to cooperate with the NAAC SSR Criteria Coordinators for the accreditation process.
 6. All the mentors are advised to encourage students for doing co-curricular activities and courses for MOOCs/MAR qualification.
 7. There being no other issues, the meeting ended with a vote of thanks to the chair.


7/1/22

(MR. JAGADISH BHATTACHARYA)
Coordinator, ECE, HETC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Attendance of faculty members and technical staff of E.C.E Department for meeting held on: 06.01.2022

Name	Signature
Prof. (Dr.) T.K Bandyopadhyay (HOD)	
Asst. Prof. Jagadish Bhattacharya (Coordinator)	
Asst. Prof. Swagata Choudhury	
Asst. Prof. Madhumita Datta	
Asst. Prof. Swarup Samanta	
Asst. Prof. Biswajit Basak	
Asst. Prof. Subhojit Malik	
Asst. Prof. Deb Kumar Sheet	
Asst. Prof. Writi Mitra	
Asst. Prof. Subhajit Roy	
Asst. Prof. Manish Kumar Singh	
Mrs. Bidisha Sengupta	
Mrs. Shyamali Gayen	

a.
w
st.
mer

Stud
Eval
Ques
Perce
Misce

Princi
Copy

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
PIN-712103



23.08.2022

NOTICE

All the Faculty members & Technical Staff of the E.C.E Department are hereby informed that a meeting will be held in the ECE Faculty room on 24.08.2022 at 4:30 P.M. to discuss various agendas stated below.

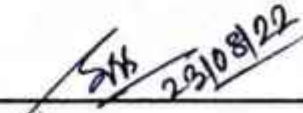
All the members of the ECE Dept. are requested to attend the meeting.

Agenda:

1. Students' Attendance.
2. Evaluating students for Continuous Assessment 2 (CA 2) and PCA1.
3. Question preparation for Continuous Assessment 3 (CA3).
4. Percentage of completion of the theory and lab courses.
5. Miscellaneous.

Copy to:

1. Principal.
2. Copy to file



(MR. SWARUP SAMANTA)

DIC(ECE), HETC
DIC, ECE Deptt.
HETC, Hooghly.

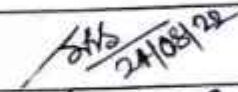
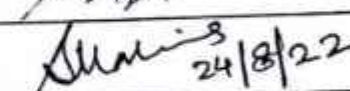
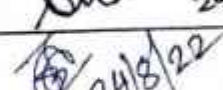
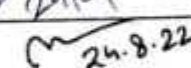

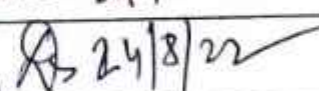
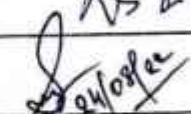
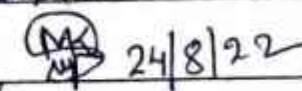
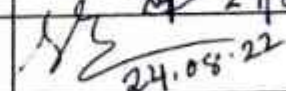
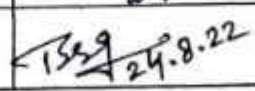
HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

ELECTRONICS AND COMMUNICATIONS DEPARTMENT
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLY
PIN-712103



Date: 24/08/22

ECE departmental meeting attendance name list:

Serial no.	Name	Signature
1	Mr. Swarup Samanta	 24/08/22
2	Ms. Swagata Mallik	 24/8/22
3	Mr. Jagadish Bhattacharya	 24/8/22
4	Mr. Biswajit Basak	 24.8.22
5	Mr. Subhojit Malik	 24/8/22
6	Mr. Deb Kumar Sheet	 24/8/22
7	Mr. Subhajit Ray	 24/08/22
8	Mr. Manish Kumar Singh	 24/8/22
9	Ms. Shyamali Gayen	 24.08.22
10	Ms. Bidisha Sengupta	 24.8.22

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



Date: 25.08.22

Minutes of the departmental meeting

Minutes of the ECE departmental meeting of HETC held on Wednesday, the 24th of August 2022 at 4:30 PM in the ECE faculty room on the following agenda:

Agenda:

1. Students' Attendance.
2. Evaluating students for Continuous Assessment 2 (CA 2) and PCA1.
3. Question preparation for Continuous Assessment 3 (CA3).
4. Percentage of completion of the theory and lab courses.
5. Miscellaneous.
 1. Mr. Swarup Samanta, DIC, E.C.E, was on the chair and started the meeting as per the agenda.
 2. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
 3. All the concerned faculties and technical assistants are advised to send a report of attendance of their respective theory and lab classes to the Departmental in charge.
 4. All faculties are informed that the mode of conduct of Continuous Assessment 2 (CA2) is report writing. Therefore, they are advised to provide topics to the students as soon as possible.
 5. The faculty and TAs are informed to prepare an evaluation sheet for Practical Continuous Assessment 1 (PCA1).
 6. All subject teachers are advised to prepare a question paper consisting of three types of questions which are MCQ, Short Answer type, and Long Answer type.
 7. All departmental members are advised to send a report on the percentage of completion of their respective courses.
 8. There being no other issues, the meeting ended with a vote of thanks to the chair.

SRs
25/08/22
(MR. SWARUP SAMANTA)
DIC(ECE), HETC
DIC, ECE Deptt.
HETC, Hooghly.




Date: 05.05.2023

Notice for Faculty Members & Technical Staffs of ECE Department

All the Faculty Members & Technical Staffs of the Department of Electronic and Communications Engineering are hereby informed that a meeting will be held on 06.05.2023 at 4:30 PM in the ECE Staff room to discuss various issues stated below. All members are requested to attend the meeting.

Agenda:

1. Activities related to NAAC.
2. Upgradation of personal file and submit a second copy for office use.
3. Discussion on elective subjects to be taught to the students of 3rd year and 4th year.
4. Updates on Projects taken up by the students of 4th year.
5. Activities of MOOCs/MAR
6. Miscellaneous.


.....
Mr. Swarup Samanta

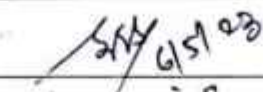
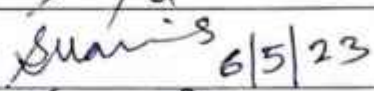
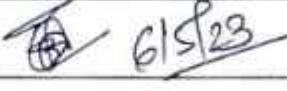
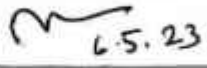

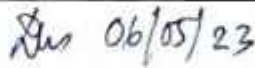
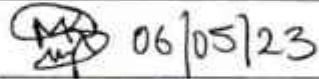

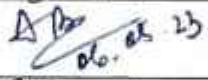
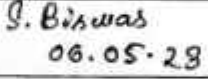


D.I.C (ECE), HETC

**DIC, ECE Deptt.
HETC, Hooghly.**

Copy to:

- 1) Principal

Attendance of faculty members and technical staff of E.C.E Department
for meeting held on 06.05.2023

Name	Signature
Asst. Prof. Swarup Samanta (DIC)	 6/5/23
Asst. Prof. Swagata Mallick Choudhury	 6/5/23
Asst. Prof. Jagadish Bhattacharya	 6/5/23
Asst. Prof. Biswajit Basak	 6.5.23
Asst. Prof. Subhojit Malik	 06/05/23
Asst. Prof. Deb Kumar Sheet	 06/05/23
Asst. Prof. Manish Kumar Singh	 06/05/23
Asst. Prof. Subhajit Roy	 06/05/2023
Assoc. Prof. (Dr.) Ankan Bhattacharya	 06.05.23
Asst. Prof. Susmita Biswas	 S. Biswas 06.05.23
Mrs. Bidisha Sengupta	 BSSG 6.5.23
Mrs. Shyamali Gayen	 6.5.23



Date: 10.05.2023

Minutes of the departmental meeting

Minutes of the ECE departmental meeting of HETC held on Wednesday, the 6th of May 2023 at 4.30 PM in the ECE faculty room in presence of the following members:

- | | | |
|--------------------------|---------------------|---------------------------|
| 1. Swarup Samanta | 5. Subhojit Malik | 9. Dr. Ankan Bhattacharya |
| 2. Swagata Chowdhury | 6. Deb Kr. Sheet | 10. Susmita Biswas |
| 3. Jagadish Bhattacharya | 7. Subhajit Roy | 11. Shyamali Gayen |
| 4. Biswajit Basak | 8. Manish Kr. Singh | 12. Bidisha Sengupta |

Agenda:

1. Upgradation of personal file and submit a second copy for office use.
2. Activities related to NAAC.
3. Discussion on elective subjects to be taught to the students of 3rd year and 4th year.
4. Updates on Projects taken up by the students of 4th year.
5. Activities of MOOCs/MAR
6. Miscellaneous.

Details of discussion:

1. The minutes of the last meeting, circulated earlier to all members, were presented and the minutes were confirmed unanimously.
2. All the mentors are advised to update personal file and submit a copy for office use.
3. All faculties and technical assistants are informed about the NAAC accreditation process and are advised to work accordingly.
4. A google form is created for choice filling of optional papers for 3rd and 4th Year students. Selection of optional paper will be decided based on the choice of majority.
5. All the mentors are advised to upload the activities related to MOOCs/MAR.
6. There being no other issues, the meeting ended with a vote of thanks to chair.

Copy to:

- 1) Principal

Swb
10/05/23
(MR. SWARUP SAMANTA)

DIC(ECE), HETC

DIC, ECE Deptt.
HETC, Hooghly.



Hooghly Engineering & Technology College

Vivekananda Road , Pipulpati, Hooghly - 712103

Department Of Basic Science & Humanities

NOTICE

19th April 2023

All concerned are being informed that a meeting of the Department of Basic science & Humanities of HETC will be held on today 19th April, 2023 (Wednesday) at 4:20 P.M at Principal's Chamber. All the members as per the attached list are cordially invited to attend the meeting.

Agenda:

1. Academic activities related to classes, attendance etc.
2. Feedback related to students performance
3. Students' mentoring
4. Miscellaneous, if any.

For circulation to:

1. Dr. Pratyay Debnath *P. Debnath 19/4/23*
2. Dr. Aishwarya Mukherjee *Mukherjee 19/04/2023*
3. Dr. Abhranil De *Abhranil De 19/04/23*
4. Dr. Soumya Banerjee
5. Mr. Subham Ganguly *Subham Ganguly 19/4/23*
6. Mr. Pradip Ghosh *Pradip Ghosh 19/4/23*
7. Mrs. Sudeshna Banerjee *Sudeshna Banerjee 19/4/23*

8. Mr. Sauptik Prosad Chowdhury
9. Mr. Kallol Mallik *Kallol Mallik 19/4/23*
10. Mr. Saurav Chowdhury *Saurav Chowdhury 19/4/23*
11. Mr. Pritam Biswas *Pritam Biswas 19/04/23*
12. Mr. Rajsekhar Bhattacharya

R. Patra 19/04/2023

Dr. Rajesh Patra
HOD, BSH Department
H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly - 712103.

MINUTES OF THE MEETING HELD ON 19.04.2023 AT 4.30 PM

AT PRINCIPAL'S CHAMBER

Members present

- | | |
|-----------------------------------------------|-------------------------------------------------|
| 1. Prof (Dr.) Pradosh Kr. Adhvaryu, Principal | 2. Dr. Rajesh Patra HOD (BSH) R. Patra 19/04/23 |
| 3. Dr. Pratyay Debnath P. Debnath 19.04.23 | 4. Dr. Aishwarya Mukherjee Mukherjee 19/04/23 |
| 5. Dr. Abhranil De | 6. Dr. Soumya Banerjee |
| 7. Mr. Subham Ganguly S. Ganguly 19/4/23 | 8. Mr. Pradip Ghosh Ghosh 19/4/23 |
| 9. Mrs. Sudeshna Banerjee S. Banerjee 19/4/23 | 10. Mr. Sauptik Prosad Chowdhury |
| 11. Mr. Kallol Mallik K. Mallik 19/4/23 | 12. Mr. Saurav Chowdhury S. Chowdhury 19/4/23 |
| 13. Mr. Pritam Biswas P. Biswas 19/04/23 | 14. Mr. Rajsekhar Bhattacharya |

Principal presided over the meeting as chairperson and officially welcomed all present after which permitted to start the proceedings of the meeting.

1. Faculties & staff of BSH department assured that they follow the class routine honestly. Arrangement of extra class, if required, is done after getting permission.
2. All the members of the BSH Department were informed that College has been preparing for submission for NAAC accreditation Process in the year 2023. So all faculties and staff were requested to arrange for the requisite documents of him /her - self, department and college for the process. Because it has to be a concerted effort of all to get NAAC accreditation.
3. The members were informed that Laboratory Assistant is for maintaining the laboratory and to assist faculty during lab class and the Laboratory in-charge / Faculty will conduct the lab class.
4. The mentors were informed about keeping documents of the interactions with students in a proper way for presenting before any inspecting agencies.
5. Documents relating to parent teacher meeting should also be kept in proper way.
6. The meeting concluded with a vote of thanks to the Chair.

R. Patra 19/04/2023

Dr. Rajesh Patra
HOD, BSH Department

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI,
P.O. & DIST. HOOGLHY

07th September, 2022

NOTICE

All concerned are being informed that a meeting of the Department of Basic science & Humanities of HETC will be held on 07th September, 2022 (Wednesday) at 4:20 P.M at Basic Science & Humanities Department. All the members as per the attached list are cordially invited to attend the meeting.

Agenda:

1. Academic activities related to classes, attendance & syllabus.
2. Conduction of CA-3 Exam.
3. Miscellaneous, if any.

R. Patra 07/09/2022
Dr. Rajesh Patra

HOD, BSH Department

H. O. D.

Basic Science & Humanities Department
H. E. T. C. Hooghly.

1. Dr. Pratyay Debnath *P. Debnath 07.09.22*
2. Dr. Aishwarya Mukherjee *Mukherjee 07/09/2022*
3. Dr. Abhranil De *Abhranil De 07/09/22*
4. Dr. Soumya Banerjee *Soumya Banerjee 07/09/22*
5. Mr. Subham Ganguly *Subham Ganguly 7/9/22*
6. Mr. Pradip Ghosh *Pradip Ghosh 7/9/22*
7. Mrs. Sudeshna Banerjee *Sudeshna Banerjee 7/9/2022*
8. Mr. Saupatik Prosad Chowdhury *Saupatik Prosad Chowdhury 7/9/22*
9. Mr. Kallol Mallik *Kallol Mallik 7/9/22*
10. Mr. Saurav Chowdhury *Saurav Chowdhury 7/9/22*
11. Mr. Pritam Biswas *Pritam Biswas 07/09/22*

Members present in the Departmental meeting held on 07th September, 2022.

1. Dr. Rajesh Patra R. Patra 07/09/22
2. Dr. Pratyay Debnath P. Debnath 7.9.22
3. Dr. Aishwarya Mukherjee Mukherjee 07/09/2022
4. Dr. Abhranil De A. De 07/09/22
5. Dr. Soumya Banerjee S. Banerjee 7/9/22
6. Mr. Subham Ganguly S. Ganguly 7.9.22
7. Mr. Pradip Ghosh P. Ghosh 7.9.22
8. Mrs. Sudeshna Banerjee S. Banerjee 7/9/22
9. Mr. Sauptik Prasad Chowdhury S. Chowdhury 7.9.22.
10. Mr. Kallol Mallik K. Mallik 7/9/22
11. Mr. Saurav Chowdhury S. Chowdhury 07/09/22
12. Mr. Pritam Biswas P. Biswas 07/09/22



Minutes of the departmental meeting of Basic Science & Humanities, 2022

Minutes of the departmental meeting of Basic Science & Humanities 2022 held on 07th September, 2022 (Wednesday) at 4:20 P.M at Basic Science & Humanities Department.

Dr. Rajesh Patra, Head of the Department of BSH was on the chair and permitted to start the proceedings of the meeting.

1. The members of the Department of BSH ensured that they were concerned about the classes & syllabus for the running semester.
2. The members were also provided the information for taking Continuous Evaluation (CA-3), September, 2022 by the new process.
3. All concerned were reminded about the new process of CA-3 & CA-4 and also requested to cover the entire syllabus for the running odd semester (2nd year onwards) within 31st October, 2022.
4. All the members of the BSH Department were informed that initially our College is going to NAAC accreditation Process within 31st November, 2022. So they were requested to arrange the required documents for the process.
4. The meeting concluded with a vote of thanks to the Chair.

R. Patra 08/09/2022

Dr. Rajesh Patra

HOD, BSH Department

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI,
P.O. & DIST. HOOGLY

29th April, 2022

NOTICE

All concerned are being informed that a meeting of the Department of Basic science & Humanities of HETC will be held on 29th April, 2022 (Friday) at 4:15 P.M at BSH Department. All the members as per the attached list are cordially invited to attend the meeting.

Agenda:

- 1. Conduction of Spoken Tutorial Course.
- 2. MAR activities.
- 3. Miscellaneous, if any.

R. Patra 29/04/2022

Dr. Rajesh Patra

HOD, BSH Department

- 1. Dr. Pratyay Debnath *P. Debnath 29.4.22*
- 2. Dr. Aishwarya Mukherjee *Mukherjee 29/04/2022*
- 3. Dr. Abhranil De *Abhranil De 29/04/22*
- 4. Dr. Akash Roy *Aakash Roy*
- 5. Dr. Soumya Banerjee
- 6. Mr. Arup Maiti
- 7. Mr. Subham Ganguly *S Ganguly 29/4/22*
- 8. Mr. Pradip Ghosh *Pradip Ghosh*
- 9. Mrs. Sudeshna Banerjee

- 10. Mr. Saupatik Prosad Chowdhury *SPC 29-4-22*
- 11. Mr. Kallol Mallik *K Mallik*
- 12. Mr. Saurav Chowdhury *Saurav Chowdhury 29/4/22*
- 13. Mr. Pritam Biswas *Pritam Biswas 29/04/22*

1. Dr. Rajesh Patra R. Patra 29/04/22
2. Dr. Pratyay Debnath P. Debnath 29.4.22
3. Dr. Aishwarya Mukherjee A. Mukherjee 29/04/2022
4. Dr. Abhranil De A. De 29/04/22
5. Dr. Akash Roy A. Roy
6. Dr. Soumya Banerjee
7. Mr. Arup Maiti
8. Mr. Subham Ganguly S. Ganguly 29/4/22
9. Mr. Pradip Ghosh P. Ghosh 29/4/22
10. Mrs. Sudeshna Banerjee
11. Mr. Sauptik Prosad Chowdhury
12. Mr. Kallol Mallik K. Mallik 29/4/22
13. Mr. Saurav Chowdhury S. Chowdhury 29/4/22
14. Mr. Pritam Biswas P. Biswas 29/04/22



Minutes of the departmental meeting of Basic Science & Humanities,2022

Minutes of the departmental meeting of Basic Science & Humanities,2022 held on 29th April, 2022 (Friday) at 4:15 PM at BSH Department.

Dr. Rajesh Patra, Head of the Department of BSH was on the chair and permitted to start the proceedings of the meeting.

1. The discussion was made about the conduction of the Spoken Tutorial Program on "Introduction to Computer" under the supervision of the following organizer and invigilators.

Dept.	Organizer	Invigilator
CSE	PD	SUB
CE	PRG	RP
EE	AD	AKR
ME	SUB	AG
ECE	JDB	SRS

2. All the mentors from the Department were requested to take proper action for uploading the MAR points.
3. All the members were requested to take their leaves by adjusting their classes.
4. The HOD again requested them to start the regular classes (both Theory & Lab Classes) at scheduled time in the routine.
5. From the decision in a meeting with Principal in-Charge, the HOD mentioned the rules for going outside the college Campus in lunch break.
6. The meeting concluded with a vote of thanks to the Chair.

R. Patra 30/04/2022
Dr. Rajesh Patra

HOD, BSH Department



**HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
PIN-712103**

You are requested to attend an online departmental meeting on 12.08.2021 at 06.00pm. The link of the meeting will be shared with you before the meeting on the Departmental whatsapp group.

Agenda:

- 1. Departmental activities
- 2. NAAC accreditation
- 3. Miscellaneous (if any)

Mukherjee

Dr. Aishwarya Mukherjee
HOD, BSH

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103

Basic Science & Humanities Department

Twelfth online meeting – 12.08.2021

The twelfth online meeting of the faculty members of the Basic Arts and Humanities department of Hooghly Engineering and Technology College was called to order on 12.08.2021 at 06.00 PM on Google Meet virtual platform.

Members present:

1. Dr. Aiswarya Mukherjee (HOD)
2. Dr. Pratyay Debnath
3. Mr. Kallol Mallik
4. Dr. Abhranil De
5. Dr. Rajesh Patra
6. Dr. Akash Roy
7. Mr. Pradip Ghosh
8. Mr. Subham Ganguly
9. Mr. Saptik Prosad Choudhury
10. Mr. Sourav Chowdhury
11. Mr. Pritam Biswas
12. Mr. Arup Maity

Members absent:

1. Mrs. Sudeshna Banerjee

In this meeting, the following things were discussed:

1. A flag hoisting ceremony will be held on the upcoming Independence Day on the college premises according to AICTE guidelines. The ceremony will be broadcast virtually as well.
2. Faculties were instructed to complete the distribution of the common subjects they teach before the next meeting occurs.
3. Faculty members were requested to plan and arrange speakers for the upcoming Orientation programme.
4. Faculty members may have to take classes of some back up subjects that will be allotted by the HOD's of other core departments.
5. For the NAAC related activities, the faculty members were asked to participate and cooperate with the committee members.
6. Faculty members were also requested to cooperate in the students' admission related activities.

7. **Miscellaneous:** Faculty members who were present in the meeting made some discussions among themselves regarding the uploading process of Lab marks, the poor condition of the Labs of different subjects, subject distribution, Induction committee, NAAC committee etc.

With no business on the agenda, the meeting ended with a vote of thanks to the chair.

Mukherjee

Dr. Aishwarya Mukherjee

HOD, BSH

Hooghly Engineering and Technology College

H. O. D.

Basic Science & Humanities Department

H. E. T. C., Hooghly.



**HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLY
PIN-712103**

This is to notify that an online departmental meeting will be held on Saturday (16.01.2021) at 05.45pm on Google meet virtual platform. You are requested to attend the online meeting positively. The link of the meeting will be shared with you in departmental WhatsApp group.

A Mukherjee

Dr. Aishwarya Mukherjee
HOD, BSH

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103

Basic Science & Humanities Department

Seventh online meeting – 16.01.2021

The Seventh online meeting of the faculty members of the Basic Science and Humanities department of Hooghly Engineering and Technology College was called to order on 16.01.2021, at 05.45 PM on Google Meet virtual platform.

Members present:

1. Dr. Aiswarya Mukherjee (HOD)
2. Dr. Pratyay Debnath
3. Mr. Arup Maity
4. Dr. Akash Roy
5. Dr. Abhranil De
6. Rajesh Patra
7. Pradip Ghosh
8. Sudeshna Banerjee
9. Subham Ganguly
10. Dr. Soumya Banerjee
11. Sauptik Prosad Choudhury
12. Sourav Chowdhury
13. Pritam Biswas
14. Kallol Mallik

Members absent: Dr. Abir Bandyopadhyay

Approval of agenda: The agenda was unanimously approved as distributed.

First agenda item: At the beginning of the meeting, the present faculty members were enquired about the response and attendance of the students in the ongoing online classes. The present faculty members had shared their observations regarding the above-average attendance of the first year students of various departments.

Second agenda item: Next, the mentorships of different faculty members were discussed regarding the first year batch as well as of different years and different departments. The mentors were advised to create Google forms and send them to the students to collect the mentorship details. Some discussions were made on handing over the mentorship of the students of other batches to the respective HOD's/ DIC's of those corresponding departments. The distribution of the mentorship responsibility of the first year batch was also discussed in the meeting.

Third agenda item: The faculties were informed that no notice from the University regarding the CA's has been received so far and they were asked about their preferred ways to conduct the impending CA's. With the consent of

the present faculty members, it was decided that the first CA will be conducted by using Google Forms with the help of Google Classroom if required.

Miscellaneous: Various other topics like the updated list of students and the absentees, the completion of syllabuses of different subjects, mentorship forms, and revision classes for the newly admitted lateral students, students' admission & registration, poor admission of the first year batch, impending payments of the students' semester fees etc. were discussed in this meeting.

With no business on the agenda, the meeting ended with a vote of thanks to the chair.

Mukherjee

Dr. Aishwarya Mukherjee

HOD, BSH

Hooghly Engineering and Technology College

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



**HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103**

You are requested to attend the online departmental meeting of BSH department on 21.08.2020 at 05.00 pm on google meet platform. The link of the meeting will be shared in the BSH WhatsApp group prior to the meeting.

Agenda:

1. Departmental activities
2. Uploading of CAs and Lab marks
3. MAR activities
4. Miscellaneous

Mukherjee

Dr. Aishwarya Mukherjee
HOD, BSH

H. O. D.
Basic Science & Humanities Department
H. E. T. C. Hooghly.



HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
PIN-712103

Basic Science&Humanities Department

Thirddonline meeting – 21st August, 2020

The third online meeting of the faculty members of the Basic Science and Humanities department of Hooghly Engineering and Technology College was called to order on 21st August, 2020, at 05.00 PM on Google Meet virtual platform.

Members present:

1. Dr. Aiswarya Mukherjee (HOD)
2. Dr. Pratyay Debnath
3. Dr. Abir Bandyopadhyay
4. Dr. Akash Roy
5. Dr. Abhranil De
6. Mr. Arup Maiti
7. Mr. Rajesh Patra
8. Mr. Pradip Ghosh
9. Ms. Sudeshna Banerjee
10. Mr. SubhamGanguly
11. Dr.Soumya Banerjee
12. Mr. SauptikProsad Choudhury
13. Mr. Sourav Chowdhury
14. Mr. Pritam Biswas
15. Mr. Kallol Mallik

Members absent:

Nil

Approval of agenda:

The agenda was unanimously approved as distributed.

First agenda item: discussion about roster schedule for the faculty members

The college management has decided that from the 1st September, 2020 onwards, the college administration will be functioning on Tuesday, Thursday and Saturday of every week. The faculty members and Technical Assistants living nearby must come to the College twice a week, while others living in comparatively distant locations, must come once a week. If any of those three selected days (Tuesday, Thursday and Saturday) observes a lockdown(or holiday), the following day will be treated as a working day with the work schedule of that previous day. The

faculty members of BSH were instructed to discuss and declare the days they choose to come in the whatsapp group so that a departmental weekly roster can be prepared based on their attending days. Since Mr. SubhamGanguly and Dr. Akash Roy have been involved in the ongoing admission process of the college, they do not have to prepare their roster schedule. Some pointed out that attending the college and taking the online classes at the same time would be difficult due to the poor network connections but everyone agreed to make readjustments to their class routines to cooperate with each other and this issue was solved.

Second agenda item: MAR Marks

When all the faculty members were asked to send the MAR marks, some complained about some difficulties faced during the upload of the marks and they were advised to contact with Mr. SumantaDaw(SPOC, MAR, HETC) for any query related to the MAR marks.

Miscellaneous: Some queries were made about the next semester examination and the completion period of the syllabus. However, it was informed that no official notification regarding these issues has been received so far. Various problems faced during the online Lab classes and their possible solutions were discussed. The teachers conducting online lab classes were advised to share the lab manuals and various lab-based tutorial videos with the students to make the lessons easier for them.

With no the business in the agenda the meeting ended with vote of thanks to the chair.

Mukherjee

Dr. Aishwarya Mukherjee

HOD, BSH

Hooghly Engineering and Technology College

H. O. D.

Basic Science & Humanities Department

H. E. T. C., Hooghly.

HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE

VIVEKANANDA ROAD, PIPULPATI, P.O & DIST - HOOGLHY

Pin No - 712103



Date: 25.02.2020

NOTICE

The faculty members & technical assistants of the Basic Science & Humanities dept are hereby requested to attend the departmental meeting to be held in the faculty room at 05.00 pm on 26/02/2020 for the discussion of the following agenda.

AGENDA:-

1. Attendance of the students
2. Activities of mentors
3. Continuous evaluation test and performance of students
4. Departmental seminar
5. Miscellaneous

Mukherjee 25.02.2020

Dr. Aishwarya Mukherjee
HOD (Basic Science & Humanities)

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Cc: Principal, Registrar

Chak
25/2/2020

Ranjan
25/2/20

Jyoti
25/2/2020

RR
25-02-2020

[Signature]
25/2

Bhraman
25/02/2020

[Signature]
25/2/20

Ranjana
25/2/2020

[Signature]
25/2/2020

[Signature]
25.02.20

[Signature]
25/2/2020

A. Debnath
25.2.2020

Members present in the departmental meeting held on 26.02.2020

- ✓ Dr. Aishwarya Mukherjee *Mukherjee* 26.02.2020
- ✓ Dr. Pratyay Debnath *P. Debnath* 26.2.2020
- ✓ Mr. Kallol Mallik *K. Mallik* 26.2.20
- Mr. Rajesh Patra *R. Patra* 26-02-2020
- ✓ Mrs. Sudeshna Banerjee *Banerjee* 26/02/2020
- ✓ Dr. Akash Roy *A. Roy* 26/2/2020
- ✓ Mr. Pradip Ghosh *P. Ghosh* 26/2/2020
- ✓ Mr. Subham Ganguly *S. Ganguly* 26/2/2020
- ✓ Dr. Abhranil De *A. De* 26.2.20.
- ✓ Mr. Arup Maiti
- ✓ Mr. Pritam Biswas *P. Biswas* 26/02/2020
- ✓ Mr. Saurav Chowdhury *S. Chowdhury* 26/2/20
- Dr. Abir Bandyopadhyay *A. Bandyopadhyay* 26/2
- ✓ Dr. Soumya Banerjee *S. Banerjee* 26/02/2020



HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY
PIN-712103

Minutes of the BSH Departmental Meeting held on 26th February, 2020
05.00pm onward

Chaired By: Dr. Aishwarya Mukherjee, HOD, BSH

1. It was reported that some students have poor attendance. It was decided that mentor of the absentee students will interact with the guardian of the students. If the situation will not improve then the guardian will be asked to come to the college and mentor and HOD will interact with the guardian of the student.
2. Mentors reported that mentor-students meeting are in regular manner. At present there is no issue / problem reported from the students.
3. All the faculty members reported that overall performances of students in continuous assessment are not so good. It was discussed that special class may be taken for weaker students.
4. All the faculty members are requested to be prepare for departmental seminar. It was decided that departmental seminar will take place once in a month.
5. With no business on the agenda, the meeting ended with vote of thanks to the chair.

Aishwarya Mukherjee
Dr. Aishwarya Mukherjee 26/02/2020

HOD, BSH

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE

VIVEKANANDA ROAD, PIPULPATI, P.O & DIST - HOOGHLY

Pin No - 712103



Date: 21.09.2019

NOTICE

The faculty members & technical assistants of the Basic Science & Humanities dept are hereby requested to attend the departmental meeting to be held in the faculty room at 04.45 pm on 26/09/2019 for the discussion of the following agenda.

AGENDA:-

1. Attendance of the students
2. Activities of mentors
3. Continuous evaluation test and pattern of questions to be set
4. Implementation of modern views of teaching-learning
5. Miscellaneous

Mukherjee 21.09.19
Dr. Aishwarya Mukherjee
HOD (Basic Science & Humanities)

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Cc: Principal, Registrar

Aditya 20/9/19
Jishu 21/9/19

P. Debnath 21.9.19

[Signature] 21/9/19

Sanjay 21/9/19

[Signature] 25/9/2019

[Signature] 21/09/19.

[Signature] 25/09/19

[Signature]
P.B.S.S.D
Classroom
4.30 P.M.

Members present in the departmental meeting held on 26.09.2019

Dr. Aishwarya Mukherjee

Dr. Pratyay Debnath *P. Debnath 26.9.19*

Mr. Kallol Mallik

Mr. Rajesh Patra *R. Patra 26/09/2019*

Mrs. Sudeshna Banerjee *Banerjee 26/9/19*

Dr. Akash Roy

Mr. Pradip Ghosh

Mr. Subham Ganguly *Subham Ganguly 26.09.19*

Dr. Abhramil De

Mr. Arup Maiti

Mr. Pritam Biswas

Mr. Saurav Chowdhury

Dr. Abir Bandyopadhyay

Dr. Soumya Banerjee



**HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103**

**Minutes of the BSH Departmental Meeting held on 26th September, 2019
04.45 pm onwards**

Chaired By: Dr. Aishwarya Mukherjee, HOD, BSH

1. It was reported that some students have poor attendance. It was decided that mentor of the absentee students will interact with the guardian of the students. If the situation will not improve then the guardian will be asked to come to the college and mentor and HOD will interact with the guardian of the student. It was noticed that some second- and third-year students have very poor attendance. It was decided that HOD will report the matter to the head of the departments of the respective department.
2. Mentors reported that mentor-students meeting are in regular manner. At present there is no issue / problem reported from the students.
3. All the faculty members reported that overall performances of students in continuous assessment are not so good. It was also decided that questions are prepared according to the MAKAUT guideline. It was discussed that special class may be taken for weaker students.
4. With no business on the agenda, the meeting ended with vote of thanks to the chair.

Aishwarya Mukherjee

Dr. Aishwarya Mukherjee

26/09/2019

HOD, BSH

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE

VIVEKANANDA ROAD, PIPULPATI, P.O & DIST - HOOGHLY

Pin No - 712103



Date: 10.06.2019

NOTICE

The faculty members & technical assistants of the Basic Science & Humanities dept are hereby requested to attend the departmental meeting to be held in the Board Room at 2.30 pm on 12/06/2019 for the discussion of the following agenda.

AGENDA:-

1. Attendance of the students
2. Activities of mentors
3. Internal / Improvement test and pattern of questions to be set
4. Implementation of modern views of teaching-learning
5. Internal / Improvement tests for backlog students
6. Subject allocation / Preparation of lesson plan
7. Miscellaneous

Mukherjee 10.06.19

Dr. Aishwarya Mukherjee
HOD (Basic Science & Humanities)

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Cc: Principal, Registrar

11.6.19

11/6/19

10/6/19

10/6/19

10/6/19

10.06.19

10/06/2019

10.06.19

10/6/2019

10.6.19

10/06/19

Departmental meeting
Basic Science & Humanities

Date : 12.06.19

Members present :

1. Saha-Chowdhury 12/06/19
2. Mukherjee 12.06.19
3. Kallol Mallik 12.06.19
4. Saurav Choudhury 12/6/19
5. Palan Biswas 12/06/19
6. Sudendra Banerjee 12/6/19
7. Rajesh Patra 12/06/2019
8. Akash Roy 12/06/19
9. Pradyumn Ghosh 12/6/19
10. Subham Ganguly 12/06/19
11. Abir Bandyopadhyay 12/06/19
12. Abhinav De 12/06/19
13. Asmita Maiti 12/06/19.

BSH Departmental Meeting held on 12th June, 2019 02:30 pm onwards

Chaired By: Prof.(Dr.) Sumanta Bhattacharyya, Principal, HETC

1. The Chairperson instructed the attending members to hold regular departmental meeting, be it prescheduled or emergency need-based at the discretion of the HOD. It was also discussed what matters/issues should be covered in these meetings.
2. The Chairperson instructed the members to prepare an exhaustive list of probable agendas for the departmental meetings and submit it to him within 17th June, 2019.
3. Several faculty members came forward with different suggestions about areas to be discussed in the meetings, viz., progress of syllabus, co-ordination among faculties, ragging related issues, counseling students displaying abnormal behavioural issues, lab planning etc.
4. The members reported about the problems faced due to the lack of sufficient number of computers in the BSH faculty room.
5. The Chairperson delivered a presentation with the objective of improving the efficiency improving the productivity of the departmental meetings. The following major topics were highlighted:
 - a. Focus on Academic Development
 - b. Identification of Extra-curricular talents in students
 - c. Cohesion within department and maintenance of discipline
 - d. Immediate preparation and sharing of minutes
 - e. Regular follow up about the resolutions and issues discussed in previous meetings
6. Topics to be discussed in departmental meetings should be broadly categorized under four areas- Academic, Administrative, Financial & Disciplinary.
7. The Chairperson instructed the members to attend the presentations to be delivered by Faculty members on various pedagogical matters held between 14th and 17th June, 2019 in the college.
8. It was decided that, effective from the upcoming semester, no grace marks in the internal score will be allowed to the students. Therefore, the students should be actively encouraged to sit for the improvement tests alongside the internal tests.
9. The members discussed about the new syllabus being implemented. The content of the new syllabus should be further looked into especially the non-credit subjects. The Chairperson suggested that Faculties should be ready to teach new subjects in any ways necessary.
10. COs, POs & LOs for the new syllabus are to be prepared by the faculty members.
11. The Chairperson instructed the HOD to select any one faculty member from the department to attend the short term training programme organised by NITTTR, Kolkata, during 15th-19th July, 2019.
12. It was decided that henceforth responsibility of mentorship will be equally distributed amongst the Faculty members and the Technical Assistants.
13. A second meeting to further discuss the aforementioned issues is to be held on 15th June, 2019.
14. The meeting concluded at 04:45 pm with a vote of thanks to the chair.

Mukherjee
12.06.2019
H. G. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE

VIVEKANANDA ROAD, PIPULPATI, P.O & DIST - HOOGLHY

Pin No - 712103



20/07/2018

NOTICE

The faculty members & technical assistants of the Basic Science & Humanities department are hereby requested to attend the departmental meeting to be held in the Faculty Room at 3.30 pm on 21/07/2018 for the discussion of the following agenda.

AGENDA:-

1. Academics
2. MOOCs
3. Mandatory Additional Requirement
2. Status of the departmental seminar
3. Students Mentor
4. Library
5. Departmental requirement
6. Miscellaneous

Pratyay Debnath
Dr. Pratyay Debnath

HOD (Basic Science & Humanities)

H. E. T. C.

Basic Science & Humanities Department
H. E. T. C., Hooghly.

Cc: Principal

List of faculty members & technical assistants (BSH)

1. Dr. A. Bandyopadhyay *Dr. A. Bandyopadhyay 20/7/18*
2. Dr. A. Mukherjee
3. Dr. A. Roy
4. Mr. A. De *A. De 20/7/18*
5. Ms. T. Datta *T. Datta 20/7/18*
6. Mr. S. Ganguly *S. Ganguly 20/7/18*
7. Mr. A. Maity *A. Maity 20.7.18*
8. Mr. R. Patra *R. Patra 20/07/18*
9. Mr. P. Ghosh *P. Ghosh 20/07/18*
10. Ms. S. Banerjee *S. Banerjee 20/7/18*
11. Mr. S. Chowdhury *S. Chowdhury 20/7/18*
12. Mr. K. Mallick *K. Mallick 20/7/18*
13. Mr. P. Biswas *P. Biswas 20/07/18*

HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE

VIVEKANANDA ROAD, PIPULPATI, P.O & DIST - HOOGLHY

Pin No - 712103

Attendance



20/07/2018

NOTICE

The faculty members & technical assistants of the Basic Science & Humanities department are hereby requested to attend the departmental meeting to be held in the Faculty Room at 3.30 pm on 21/07/2018 for the discussion of the following agenda.

AGENDA:-

1. Academics
2. MOOCs
3. Mandatory Additional Requirement
2. Status of the departmental seminar
3. Students Mentor
4. Library
5. Departmental requirement
6. Miscellaneous

Dr. Pratyay Debnath
HOD (Basic Science & Humanities)

Cc: Principal

Attendance List of faculty members & technical assistants (BSH)

1. Dr. A. Bandyopadhyay *A. Bandyopadhyay 21/7/18*
2. Dr. A. Mukherjee
3. Dr. A. Roy
4. Mr. A. De *A. De 21/07/18*
5. Ms. T. Datta *T. Datta 21/7/18*
6. Mr. S. Ganguly *S. Ganguly 21/07/18*
7. Mr. A. Maity *Anup Maity 21.7.18*
8. Mr. R. Patra *R. Patra 21.07.18*
9. Mr. P. Ghosh *P. Ghosh 21.07.18*
10. Ms. S. Banerjee *S. Banerjee 21/7/18*
11. Mr. S. Chowdhury *S. Chowdhury 21/7/18*
12. Mr. K. Mallick *K. Mallick 21/7/18*
13. Mr. P. Biswas *P. Biswas 21/07/18*

Minutes of the Basic Science & Humanities
Departmental Meeting held on 21. 07. 2018

Chaired by: Prof. (Dr.) Pratyay Debnath, HOD, BSH Department

1. The attending members were asked to submit their Lesson Plans for the ongoing semester. They were also asked to update and maintain their respective Course Diaries and Personal Files.
2. The Chairperson and the attending members discussed about the MOOCs as part of the new B.Tech first year curriculum. Various matters related to MOOCs viz., the allotment and the conduction of the courses as well as the function of the faculty members as facilitators of the courses were discussed.
3. The members present also discussed about the Mandatory Induction Programme for the first year students.
4. The Chairperson instructed the attending faculty members about their tasks and responsibilities as mentors of the first year students.
5. The faculty members were asked to submit book requisitions to the library for their respective subjects, in accordance with the new syllabus.
6. The faculty members were asked to submit requisitions for equipments or other materials for their respective laboratories:
7. The meeting concluded with a vote of thanks to the Chair.


21.07.2018

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

NOTICE

Ref No CE/05/18-19

Date: 12/07/2018

A meeting of the Civil Engineering Department will be held on 12th July, faculty block of CE Department at 11:00 a.m to discuss the following agenda

Agenda

1. Confirmation of the last meeting held on 16/05/2018
2. Discussion on distribution of project work for 4th year students
3. Finalization of routine for present semester
4. Attainment calculation and result analysis of last (odd) semester
5. Miscellaneous

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 12th July, 2018

1. Prof. Arpita Chattopadhyay *AC*
2. Prof. Jayanta Bandyopadhyay *JB*
3. Prof. Shibasish Deb *SD*
4. Prof. Rajdip Paul *RP*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Piyali Das *PD*
8. Mrs. Tonima Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*
11. Mr. Subrata Kumar Mallick *SM*

Minutes of the meeting held on 12th July, 2018

A meeting of the Civil Engineering Department was held on 12th July, 2018 in the faculty block of CE Department to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 16.05.2018.

The proceedings of the last meeting held on 16.02.2018 were read and confirmed.

2. Discussion on distribution of project work for 4th year students

It was decided and anonymously accepted that project work will be distributed among the final year students according to their merit basis and their choice of the specialization in different Civil Engineering field. Laboratory based project work will be done in Soil Mechanics laboratory, CE laboratory, Environmental Engineering laboratory and CAD laboratory.

3. Finalization of routine for present semester

The departmental routine was already prepared and no changes will be required in the routine. It was discussed to prepare individual load distribution table for faculty and technical staff members.

4. Attainment calculation and result analysis of last even semester

It was discussed to complete the result analysis for each subject of the last even semester 2017-18 and attainment calculation must be done.

5. Miscellaneous

It was decided that the technical assistants of the department should identify the malfunctioning laboratory instruments and report to the DIC for necessary actions. A proposal has been raised for separation of highway and concrete laboratory.

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department

Copy forwarded for information:

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board



NOTICE

Ref No CE/08/18-19

Date: 24/04/2019

A meeting of the Civil Engineering Department will be held on 25th April 2019, faculty block of CE Department at 11.00 a.m. to discuss the following agenda.

Agenda:

1. Confirmation of the last meeting held on 10.01.2019
2. Discussion on distribution of project work for 4th year students of upcoming semester.
3. Finalization of routine for present semester
4. Attainment calculation and result analysis of last odd semester
5. Miscellaneous

A Chattopadhyay

Arpita Chattopadhyay

DEC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 25th April 2019

1. Prof. Arpita Chattopadhyay *AK*
2. Prof. Jayanta Bandyopadhyay *JB*
3. Prof. Shibasish Deb *SD*
4. Prof. Rajdip Paul *RP*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Piyali Das *PD*
8. Mrs. Tonima Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*
11. Mr. Subrata Kumar Mallick *SM*

Minutes of the meeting held on 25th April, 2019

A meeting of the Civil Engineering Department was held on 25th April, 2019 in the faculty block of CE Department to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 10.01.2019:

The proceedings of the last meeting held on 10.01.2019 were read and confirmed.

2. Discussion on distribution of project work for 4th year students

It was decided and anonymously accepted that project work will be distributed among the final year students according to their merit basis and their choice of specialization in different Civil Engineering field. Laboratory based project work will be done in Soil Mechanics laboratory, CE laboratory, Environmental Engineering laboratory and CAD laboratory.

3. Finalization of routine for present semester

The departmental routine was already prepared, and minor changes has been done in the routine. It was discussed to prepare individual load distribution table for faculty and technical staff members.

4. Attainment calculation and result analysis of last odd semester

It was discussed to complete the result analysis for each subject of the last odd semester 2019-20 and attainment calculation must be done.

5. Miscellaneous

As there was no other miscellaneous issue, the meeting ended with vote of thanks to the members.

Arpita Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

NOTICE

Ref No. CE/10/19-20

Date: 30/11/2019

A meeting of the Civil Engineering Department will be held on 3rd December 2019, in the faculty block of CE Department at 4.00 p.m. to discuss the following agenda

Agenda:

1. Confirmation of the last meeting held on 9th July 2019
2. Assessment of the completion of academic syllabus of the present semester
3. Academic load distribution for the upcoming semester
4. Preparation of academic routine for the upcoming semester
5. Miscellaneous

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 3rd December, 2019

1. Prof. Arpita Chattopadhyay *A. Chattopadhyay*
2. Prof. Jayanta Bandyopadhyay *JB*
3. Prof. Shibasish Deb *SD*
4. Prof. Rajdip Paul *RP*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Piyali Das *PD*
8. Mrs. Tonina Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*
11. Mr. Subrata Kumar Mallick *SKM*

Minutes of the meeting held on 3rd December, 2019

A meeting of the Civil Engineering Department was held on 3rd December, 2019 in the faculty block of CE Department to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 09.07.2019:

The proceedings of the last meeting held on 09.07.2019 were read and confirmed.

2. Assessment of the completion of academic syllabus of the present semester:

It was reported that the syllabus of both the theoretical and practical classes of the present semester were fully completed.

3. Academic load distribution for the upcoming semester:

Total academic load for both the theoretical and practical subjects of the upcoming semester were almost equally distributed among the faculty members.

4. Preparation of the academic routine for the upcoming semester:

It was decided that academic routine for the upcoming semester will be prepared by the departmental representative of the routine committee.

5. Miscellaneous

A thread base discussion was made about the internal assessment, class attendance, class performance and behavior of the students in the class. It was decided that the teachers should motivate the students whose attendance was not up to the mark from the beginning of the upcoming semester.

A Chatterpaddy

Arpita Chatterpaddy

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

NOTICE

Ref No CE/12/19-20

Date: 21/04/2020

An online meeting of the Civil Engineering Department will be held on 22nd April 2020, at 11:00 am to discuss the following agenda

Agenda

1. Confirmation of the last meeting held on 07.01.2020
2. Discussion on distribution of project work for 4th year students
3. Finalization of routine for present semester in online mode
4. Attainment calculation and result analysis of last odd semester
5. Miscellaneous

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 22nd April 2020

1. Prof. Arpita Chattopadhyay *AC*
2. Prof. Jayanta Bandyopadhyay *JB*
3. Prof. Shibasish Deb *SD*
4. Prof. Rajdip Paul *RP*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Piyali Das *PD*
8. Mrs. Tonima Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*
11. Mr. Subrata Kumar Mallick *SKM*

Minutes of the meeting held on 22nd April, 2020

An online meeting of the Civil Engineering Department was held on 22nd April, 2020 to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 07.01.2020

The proceedings of the last meeting held on 07.01.2020 were read and confirmed.

2. Discussion on distribution of project work for 4th year students

It was decided and anonymously accepted that project work will be distributed among the final year students according to their merit basis and their choice of specialization in different Civil Engineering domains. Laboratory based project work will not be done due to pandemic situation, so analytical work will be carried out.

3. Finalization of routine for present semester

The departmental routine was prepared for online classes. It was discussed to prepare individual load distribution table for faculty and technical staff members.

4. Attainment calculation and result analysis of last odd semester

It was discussed to complete the result analysis for each subject of the last odd semester 2019-20 and attainment calculation must be done.

5. Miscellaneous

The appropriate ways to conduct online classes has been discussed elaborately and decided to take classes via Google Meet platform, meeting ended with vote of thanks to the members.

A. Chattopadhyay

Azrita Chattopadhyay

DIC of CE Department

Copy forwarded for information:

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board



NOTICE

Ref No CE/13/20-21

Date: 17/08/2020

An online meeting of the Civil Engineering Department will be held on 20th Aug 2020, at 11:00 a.m to discuss the following agenda.

Agenda

1. Confirmation of the last meeting held on 22.04.2020
2. Discussion on distribution of project work for 4th year students
3. Finalization of routine for present semester
4. Attainment calculation and result analysis of last odd semester
5. Miscellaneous

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department

Copy forwarded for information:

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board



Attendance of the members present in the Civil Engineering departmental meeting held on 20th Aug, 2020.

1. Prof. Arpita Chattopadhyay *AK*
2. Prof. Jayanta Bandyopadhyay *JB*
3. Prof. Shibasish Deb *SD*
4. Prof. Rajdip Paul *RP*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Piyali Das *PD*
8. Mrs. Tonima Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*
11. Mr. Subrata Kumar Mallick *SKM*

Minutes of the meeting held on 20th Aug, 2020

An online meeting of the Civil Engineering Department was held on 20th Aug, 2020 to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 22.04.2020

The proceedings of the last meeting held on 22.04.2020 were read and confirmed.

2. Discussion on distribution of project work for 4th year students

It was decided and anonymously accepted that project work will be distributed among the final year students according to their merit basis and their choice of specialization in different Civil Engineering fields. It has been decided that only analytical projects will be done in this pandemic situation.

3. Finalization of routine for present semester

The departmental routine has been prepared, and minor changes will be required in the routine. It was discussed to prepare individual load distribution table for faculty and technical staff members.

4. Attainment calculation and result analysis of last odd semester

It was discussed to complete the result analysis for each subject of the last odd semester 2019-20 and attainment calculation must be done.

5. Miscellaneous

It has been discussed to look into the matter of improving connectivity of internet and timings of online classes, the meeting ended with vote of thanks to the members.

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department

Copy forwarded for information:

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board



NOTICE

Ref No CE/15/20-21

Date: 05/02/2021

An online meeting of the Civil Engineering Department will be held on 8th Feb 2021 at 5 p.m to discuss the following agenda.

Agenda:

1. Confirmation of the last meeting held on 03.12.2020
2. Discussion on progress of project work for 4th year students
3. Discussion on routine of present semester
4. Attainment calculation and result analysis of last even semester
5. Miscellaneous

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 8th Feb, 2021

1. Prof. Arpita Chattopadhyay *AC*
2. Prof. Jayanta Bandyopadhyay *JB*
3. Prof. Shibasish Deb *SD*
4. Prof. Rajdip Paul *RP*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Piyali Das *PD*
8. Mrs. Tonima Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*
11. Mr. Subrata Kumar Mallick *SM*

Minutes of the meeting held on 8th Feb, 2021

An Online meeting of the Civil Engineering Department was held on 8th Feb 2021 to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 03.12.2020

The proceedings of the last meeting held on 03.12.2020 were read and confirmed.

2. Discussion on progress of project work for 4th year students

The progress and present condition of project work of the final year students after the last odd semester was discussed for the betterment of students.

3. Discussion on routine for present semester

The departmental routine that was already prepared was checked and it was decided that changes will not be required in the routine. The individual load distribution table for faculty and technical staff members was checked for corrections if required.

4. Attainment calculation and result analysis of last odd semester

It was discussed to complete the result analysis and attainment calculation for each subject of the last odd semester of 2020-21 by individual faculty members for their respective subjects.

5. Miscellaneous

As there was no other miscellaneous issue, the meeting ended with a vote of thanks to the members.

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

NOTICE

Ref No CE/17/21-22

Date: 07/08/2021

An online meeting of the Civil Engineering Department will be held on 10th August 2021, at 11.00 a.m to discuss the following agenda

Agenda

1. Confirmation of the last meeting held on 22.05.2021
2. Discussion on distribution of project work for 4th year students
3. Finalization of routine for present semester
4. Attainment calculation and result analysis of last odd semester
5. Miscellaneous

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 10th August, 2021

1. Prof. Arpita Chattopadhyay 
2. Prof. Jayanta Bandyopadhyay 
3. Prof. Shibasish Deb 
4. Prof. Rajdip Paul 
5. Prof. Tanumoy Ghosh 
6. Prof. Arpita Das 
7. Prof. Piyali Das 
8. Mrs. Tonima Das 
9. Mr. Sudipta Karsabarik 
10. Mr. Somnath Dey 

Minutes of the meeting held on 10th August 2021

An online meeting of the Civil Engineering Department was held on 10th August, 2021 to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 22.05.2021.

The proceedings of the last meeting held on 22.05.2021 were read and confirmed.

2. Discussion on distribution of project work for 4th year students

It was decided and unanimously accepted that project work will be distributed among the final year students according to their merit basis and their choice of specialization in different Civil Engineering fields. It has been decided that analytical projects should be encouraged in the pandemic situation.

3. Finalization of routine for present semester

The departmental routine has been prepared, and no changes will be required in the routine. It was discussed to prepare individual load distribution table for faculty and technical staff members.

4. Attainment calculation and result analysis of last even semester

It was discussed to complete the result analysis for each subject of the last odd semester 2020-21 and attainment calculation must be done.

5. Miscellaneous

A thread base discussion was made about the internal assessment, class attendance, and class performance of the students in the online class. It was decided that the teachers should motivate the students whose attendance was not up to the mark from the beginning of the upcoming semester. It has been decided to motivate the students to attend the offline laboratory classes as per schedule maintaining proper COVID protocols.

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department

Copy forwarded for information:

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board



NOTICE

Ref No CE/19/21-22

Date 05/01/2022

An online meeting of the Civil Engineering Department will be held on 7th Jan 2022 at 4 p.m to discuss the following agenda

Agenda:

1. Confirmation of the last meeting held on 06.12.2021
2. Discussion on progress of project work for 4th year students
3. Discussion on routine of present semester
4. Attainment calculation and result analysis of last even semester
5. Miscellaneous

A. Chattopadhyay

Arpita Chattopadhyay

DIC of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 7th Jan, 2022

1. Prof. Arpita Chattopadhyay *ck*
2. Prof. Jayanta Bandyopadhyay *JB*
3. Prof. Shibasish Deb *SD*
4. Prof. Rajdip Paul *RP*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Piyali Das *PD*
8. Mrs. Tonima Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*

Minutes of the meeting held on 7th Jan, 2022

An online meeting of the Civil Engineering Department was held on 7th Jan 2022 to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 06.12.2021

The proceedings of the last meeting held on 06.12.2021 were read and confirmed.

2. Discussion on progress of project work for 4th year students

The progress and present condition of project work of the final year students after the last odd semester was discussed for the betterment of students.

3. Discussion on routine for present semester

The departmental routine that was already prepared was checked and it was decided that changes will not be required in the routine. The individual load distribution table for faculty and technical staff members was checked for corrections if required.

4. Attainment calculation and result analysis of last odd semester

It was discussed to complete the result analysis and attainment calculation for each subject of the last odd semester of 2021-22 by individual faculty members for their respective subjects.

5. Miscellaneous

As there was no other miscellaneous issue, the meeting ended with vote of thanks to the members.

A. Chatterjee

Arpita Chatterjee

DIC of CE Department

Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board



NOTICE

Ref No CE: 22-22-23

Date: 01/12/2022

A meeting of the Civil Engineering Department will be held on 3rd December 2022, in the faculty block of CE Department at 4:00 p.m. to discuss the following agenda:

Agenda

1. Confirmation of the last meeting held on 8th July 2022
2. Assessment of the completion of academic syllabus of the present semester
3. Academic load distribution for the upcoming semester
4. Preparation of academic routine for the upcoming semester
5. Miscellaneous

for A. Chattopadhyay

Dr. Rajshree Paul

HOD of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 31st December, 2022

1. Prof. Rajdip Paul *RP*
2. Prof. Arpita Chattopadhyay *AC*
3. Prof. Jayanta Bandyopadhyay *JBY*
4. Prof. Shibasish Deb *SD*
5. Prof. Tanumoy Ghosh *TG*
6. Prof. Arpita Das *AD*
7. Prof. Priyati Das *PD*
8. Mrs. Tonma Das *TD*
9. Mr. Sudipta Kansabanik *SK*
10. Mr. Somnath Dey *SD*

Minutes of the meeting held on 3rd December, 2022

A meeting of the Civil Engineering Department was held on 3rd December, 2022 in the faculty block of CE Department to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 08.07.2022:

The proceedings of the last meeting held on 08.07.2022 were read and confirmed.

2. Assessment of the completion of academic syllabus of the present semester:

It was reported that the syllabus of both the theoretical and practical classes of the present semester were fully completed.

3. Academic load distribution for the upcoming semester:

Total academic load for both the theoretical and practical subjects of the upcoming semester were almost equally distributed among the faculty members.

4. Preparation of the academic routine for the upcoming semester:

It was decided that academic routine for the upcoming semester will be prepared by the departmental representative of the routine committee.

5. Miscellaneous

A thread base discussion was made about the internal assessment, class attendance, class performance and behavior of the students in the class. It was decided that the teachers should motivate the students whose attendance was not up to the mark from the beginning of the upcoming semester. It was also decided to motivate the students to build innovative models and do research work related to modern trends in Civil Engineering.

for A. Chatteropadhyay

Dr. Rajdip Paul

HOD of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

NOTICE

Ref No CE/23/22-23

Date: 05/01/2023

A meeting of the Civil Engineering Department will be held on 6th Jan 2023 in the faculty block of CE Department at 4 p m to discuss the following agenda.

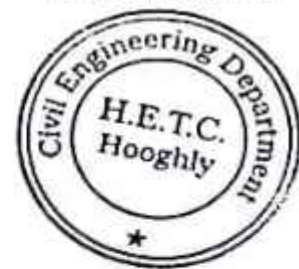
Agenda

1. Confirmation of the last meeting held on 03.12.2022
2. Discussion on progress of project work for 4th year students
3. Discussion on routine of present semester
4. Attainment calculation and result analysis of last even semester
5. Miscellaneous

for A Chattopadhyay

Dr. Rajdip Paul

HOD of CE Department



Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board

Attendance of the members present in the Civil Engineering departmental meeting held on 6th Jan, 2023

1. Prof. Rajdip Paul PV
2. Prof. Arpita Chattopadhyay A
3. Prof. Jayanta Bandyopadhyay JB
4. Prof. Shibasish Deb SD
5. Prof. Tamunoy Ghosh TG
6. Prof. Arpita Das AD
7. Prof. Piyali Das PD
8. Mrs. Tonima Das T
9. Mr. Sudipta Kansabanik SK
10. Mr. Somnath Dey SD

Minutes of the meeting held on 6th Jan, 2023

A meeting of the Civil Engineering Department was held on 6th Jan 2023 in the faculty block of CE Department to discuss the following items. The attendance sheet of the members present is attached with the proceedings.

1. Confirmation of the last meeting held on 03.12.2022

The proceedings of the last meeting held on 03.12.2022 were read and confirmed.

2. Discussion on progress of project work for 4th year students

The progress and present condition of project work of the final year students after the last odd semester was discussed for the betterment of students.

3. Discussion on routine for present semester

The departmental routine that was already prepared was checked and it was decided that changes will not be required in the routine. The individual load distribution table for faculty and technical staff members was checked for corrections if required.

4. Attainment calculation and result analysis of last even semester

It was discussed to complete the result analysis and attainment calculation for each subject of the last even semester of 2018-19 by individual faculty members for their respective subjects.

5. Miscellaneous

A thread base discussion was made about the internal assessment, class attendance, class performance and behavior of the students in the class. It was decided that the teachers should motivate the students whose attendance was not up to the mark from the beginning of the upcoming semester. It was also decided to motivate the students to build innovative models and do research work related to modern trends in Civil Engineering.

for A Chatterjee

Dr. Rajdip Paul

HOD of CE Department

Copy forwarded for information

1. Faculty and Technical Supporting Staff (through circulation)
2. Departmental Notice Board





Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 12.01.2023

Notice

A Departmental meeting will be held on 24.01.2023 at 4.30 A.M. in the Workshop. The meeting will discuss the following agenda:

1. Review of Lesson Plans, Assignment Lists & Lab Manuals by faculties
2. Report writing assignment and Marks submission of CA1 for 6th and 8th Semester
3. CA4 Examination and Submission of marks for PCA2 for 1st year and 2nd year students
4. Preparation for Practical examination of 1st and 2nd year students (Engineering Graphics and Design; Workshop/ Manufacturing Practice Lab; Practice of Manufacturing Process)
5. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

1. Prof. Sandip Basu

Sandip Basu
21/1/23

3. Prof. Rajib Kr. Mandal

Rajib Kr. Mandal
12/1/23

5. Mrs. Dipanwita Biswas

Dipanwita Biswas
12.01.23

7. Mr. Saikat Banerjee

Saikat Banerjee
12-1-23

2. Prof. Shamik Ghosh

Shamik Ghosh
12/1/23

4. Mr. Uttam Kumar Samanta

Uttam Kumar Samanta
12/01/23

6. Mr. Tathagata Mallick

Tathagata Mallick
12/01/23

8. Mr. Shantabrata Pal

Shantabrata Pal
12/01/23

S. Ghosh 12.01.23

Samir Ghosh
Convener

SG 12.01.23

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental Meeting held on 24th January, 2023 at 4.30 p.m. in the Workshop

1. H.O.D., Mechanical Engg. Dept., was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. The theory class distribution amongst faculty members and lab class distribution amongst faculty members and technical assistants had already been finalized. The departmental routine was finalized and published with necessary modifications and the regular classes are going on as per routine.
3. Most of the faculty members have already submitted the Course Plans of their theory papers. Those remaining were instructed to submit their Course Plans within the coming week. Those who have not submitted the Assignment List of their respective labs will also have to do so within the coming week.
4. It was decided to prepare report writing assignment topics and assign them to the students for Continuous Assessment 1 (CA1) for 6th and 8th Semesters. Faculty members were reminded of the importance of adhering to the deadline to facilitate efficient evaluation and feedback.
5. The upcoming CA4 examination and subsequent submission of marks for Practical Cumulative Assessment 2 (PCA2) for 1st and 2nd year students were discussed. It was stressed that accuracy and punctuality in marking and result submission are crucial for academic integrity.
6. The preparation for Practical examinations in Engineering Graphics and Design (PC-ME191), Workshop/Manufacturing Practice Lab (PC-ME192), and Practice of Manufacturing Process (PC-ME-391) for 1st and 2nd-year students was discussed. Faculty members were assigned specific responsibilities to ensure the smooth conduction of these examinations.
7. The H.O.D. instructed the faculty members to schedule semester end Improvement Classes for various departmental subjects as per requirement.
8. There being no other business, the meeting ended with a vote of thanks to the chair.

Samir Ghosh, 27.01.23

Samir Ghosh
Convener

SG 27.01.23

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 23.09.2022

Notice

A Departmental meeting will be held on 30.09.2022 at 12.30 P.M. in the Faculty room. The meeting will discuss the following agenda:

1. Student attendance report and corrective measures to be taken
2. Progress in Curricula
3. Progress of Project Work for 4th year students
4. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | | | |
|---------------------------|-------------------------------|----------------------------|------------------------|
| 1. Prof. Sandip Basu | <i>Sandip Basu</i>
23/9/22 | 2. Prof. Shamik Ghosh | <i>SG</i>
23/9/22 |
| 3. Prof. Rajib Kr. Mandal | <i>km</i>
23/9/22 | 4. Mr. Uttam Kumar Samanta | <i>UKS</i>
23/9/22 |
| 5. Mrs. Dipanwita Biswas | <i>DB</i>
23.09.22 | 6. Mr. Tathagata Mallick | <i>Tml</i>
23/09/22 |
| 7. Mr. Saikat Banerjee | <i>Saikat</i>
23.9.22 | 8. Mr. Shantabrata Pal | <i>SBP</i>
23/09/22 |

Samir Ghosh
23.09.22

Samir Ghosh
Convener

SG
23.09.22

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental meeting held on 30th September, 2022 at 4:30 p.m. in the Workshop

1. HOD, Mechanical Engineering Department was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. Initially, progress in curricula of departmental theory papers and labs was reviewed. The overall progress in different theory and practical papers was satisfactory. The syllabi would be finished within the specified time.
3. Progress in course curricula is furnished below:

Faculty Acronym	Subject Completions			
SMG	Engg. Mech. (ES-ME 301) [1] -80%	Solid Mechanics (PC-ME 502) [4] -70%	Engg. Graphics & Design (ES-ME191) -70%	Machine Drawing II (PC-ME592) [3]-85%
SDB	Manufacturing Processes (PC-ME302) -60%	Advanced Manufac. Tech. (ME 702) 70%	Workshop (ES-ME192) -60%	Mechanical Engineering Laboratory III (PC-ME791) -80%
	Practice of Manufacturing Processes (PC-ME391)-70%			
SHG	Engg. Mech. (ES-ME 301)-80%	Heat Transfer (PC-ME501)- 80%	Mechanical Engineering Laboratory I(Thermal) (PC-ME591)-80%	
	Thermodynamics (PC-ME301)-75%			
RJM	Engg. Mech. (ES-ME301(EE)) - 75%	Advanced Welding Tech. (ME 704B) 85%	Automobile Engg. (PE-ME701A)-80%	Workshop (ES-ME192)- 75%
SAG	Kine & Theory of M/C (PC-ME503) -80%	Non-conventional Energy Sources (OP-ME.701D) - 70%	Automobile Engg. (PE-ME701A)-80%	Engg. Graphics & Design (ES-ME191)- 75%

4. Attendance of students of departmental theory and practical papers were reviewed. It was observed that the attendance in the theory classes decreased compared to the practical classes due to average course completion in the theory papers being over 80%.
5. Project work for 4th year students were also reviewed. Most of the project supervisors said that their students were performing project work quite acceptably.
6. There being no other business, the meeting ended with a vote of thanks to the chair.

Samir Ghosh 3.10.22

Samir Ghosh
Convener

Dr. Smitadhi Ganguly 03.10.22

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 23.02.2022

Notice

A Departmental meeting will be held on 26.02.2022 at 12.30 P.M. in the Faculty room. The meeting will discuss the following agenda:

1. Student attendance report and corrective measures to be taken
2. Progress in Curricula
3. Progress of Project Work for 4th year students
4. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | | | |
|---------------------------|-------------------------------------|----------------------------|----------------------------------------|
| 1. Prof. Sandip Basu | <i>Sandip Basu</i>
23/02/22 | 2. Prof. Shamik Ghosh | <i>Shamik Ghosh</i>
23/2/22 |
| 3. Prof. Rajib Kr. Mandal | <i>Rajib Kr. Mandal</i>
23/2/22 | 4. Mr. Uttam Kumar Samanta | <i>Uttam Kumar Samanta</i>
23/02/22 |
| 5. Mrs. Dipanwita Biswas | <i>Dipanwita Biswas</i>
23.02.22 | 6. Mr. Tathagata Mallick | <i>Tathagata Mallick</i>
23/02/22 |
| 7. Mr. Saikat Banerjee | <i>Saikat Banerjee</i>
23.2.22 | 8. Mr. Shantabrata Pal | <i>Shantabrata Pal</i>
23/02/22 |

S. Ghosh 23.02.22

Samir Ghosh
Convener

SA 28.02.22

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103




Mechanical Engineering Department

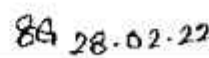
Minutes of the Departmental meeting held on 26th February, 2022 at 4:30 p.m. in the Workshop

1. HOD, Mechanical Engineering Department was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. Initially, progress in curricula of departmental theory papers and labs was reviewed. The overall progress in different theory and practical papers was satisfactory. The syllabi would be finished within the specified time.
3. Progress in course curricula is furnished below:

Faculty Acronym	Subject Completion			
SMG		Engg. Mech [4] 90%	Solid Mechanics [4] 80% Machine Drawing II 85%	
SDB		Manuf. Process [4] 90% Manufacturing Lab 80%		Adv. Manufac. (3) 75%
SHG		Thermo [4] 85%	Heat Transfer. (4) 80% Mechanical Engg. Lab I (thermal) 85%	
RJM	Workshop 80%	Engg. Mech [3] (EE)		Adv. Welding (3) 75%
				Automobile Engg. [2] 80%
SAG	Engineering Graphics & Design-85%		Kine. & Th. of Mach. (4) 85%	Non-Con. Energy Sources [3] 80%
				Automobile Engg. [1] 90%

4. Attendance of students of departmental theory and practical papers were reviewed. It was observed that the attendance in the theory classes decreased compared to the practical classes due to average course completion in the theory papers being over 80%.
5. Project work for 4th year students were also reviewed. Most of the project supervisors said that their students were performing project work quite acceptably.
6. The Faculty members & Technical Assistants were requested to conduct mentor meetings as per schedule.
7. There being no other business, the meeting ended with a vote of thanks to the chair.


 28.02.22
 Samir Ghosh
 Convener


 28.02.22
 Dr. Smitadhi Ganguly
 H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 02.11.2021

Notice

A Departmental meeting will be held on 07.11.2021 at 4.00 P.M. in the Workshop. The meeting will discuss the following agenda:

1. Finalization of subject teachers for the odd semesters of the coming academic session and routine preparation
2. SWOC Analysis of the Department
3. Departmental budget for the coming financial year
4. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|-----------------------------------------------------------|----------------------------------------------------------------|
| 1. Prof. Sandip Basu <i>Sandip Basu 2/11/21</i> | 2. Prof. Shamik Ghosh <i>Shamik Ghosh 2/11/21</i> |
| 3. Prof. Rajib Kr. Mandal <i>Rajib Kr. Mandal 2/11/21</i> | 4. Mr. Uttam Kumar Samanta <i>Uttam Kumar Samanta 02/11/21</i> |
| 5. Mrs. Dipanwita Biswas <i>Dipanwita Biswas 02.11.21</i> | 6. Mr. Tathagata Mallick <i>Tathagata Mallick 02/11/21</i> |
| 7. Mr. Saikat Banerjee <i>Saikat Banerjee 2/11/21</i> | 8. Mr. Shantabrata Pal <i>Shantabrata Pal 02/11/21</i> |
| 9. Mr. Goutam Banerjee | |

S. Ghosh 02.11.2021

Samir Ghosh
Convener

Dr. Smitadhi Ganguly 02.11.21

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental meeting held on 7th November, 2021 at 4.300 a.m. in the Workshop

1. H.O.D, Mechanical Engg. Dept., was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. The load/subject distribution for the coming odd semesters was finalized and is furnished below:

Faculty Acronym	1 st Semester	3 rd Semester	5 th Semester	7 th Semester	Load
SMG		Engg. Mech [4]	Solid Mechanics [4]		8
SDB		Manuf. Process [1]		Adv. Manufac. (3)	7
SHG		Thermo [4]	Heat Transfer: (4)		8
RJM		Engg. Mech [3] (LL)		Adv. Welding (3)	8
			Automobile Engg. [2]		
SAG			Kine. & Th. of Mach. (4)	Non-Con. Energy Sources [3] Automobile Engg. [1]	8

3. The lab class distribution for the coming odd semesters was finalized and the details are shown below. First year laboratory classes which would be distributed depending solely on availability as per routine.

Faculty Members					
Fac. /TA Acronym	1 st Semester	3 rd Semester	5 th Semester	7 th Semester	Load
SMG			Machine Drawing II (3)		3
SDB		Practice of Manufacturing Processes Lab [3]			3
SHG			Mecha. Engg. Lab-I (thermal) (3)		3
RJM	Workshop [CSE-CE+ME] [6]				6
SAG	Engineering Graphics & Design (6)				6
Technical Assistants					
UKS	Workshop [6]	Practice of Manufacturing (3)			9
SBP	Workshop [6]	Practice of Manufacturing (3)			9
DNB	Engg. Drg. & Comp. Graphics [6]		Machine Drawing II (3)		9



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

TM	Engg. Drg. & Comp. Graphics [6]		Machine Drawing II (3)	9
SAB	Workshop [6]	Practice of Manufacturing Processes [3]	Mecha. Engg. Lab-I (thermal) (3)	12
GB	Workshop [6]		Mecha. Engg. Lab-I (thermal) (3)	9

4. The Faculty members were requested to submit their course dairy (Even 2021) and Technical Assistants were told to update their stock register as early as possible.
5. The faculty members were requested to prepare their Lesson Plans, Assignment Lists, question banks & Lab Manuals
6. SWOC (Strengths, Weaknesses, Opportunities, and Challenges) analysis of the department was discussed. Faculty and technical staff members actively participated in identifying the department's internal strengths and weaknesses. This workout provided valuable insights into the current state of the department and served as a base for strategic planning.
7. There being no other business, the meeting ended with a vote of thanks to the chair.

S. Ghosh 08.11.21

Samir Ghosh
Convener

SA 08.11.21

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 05.02.2021

Notice

A Departmental meeting will be held on 09.02.2021 at 12.30 P.M. in the Faculty room. The meeting will discuss the following agenda:

1. Student attendance report and corrective measures to be taken
2. Progress in Curricula
3. Coming MAKAUT Practical Examination and marks submission for 3rd, 5th and 7th Semester
4. Progress of Project Work for 4th year students
5. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|--------------------------------------------------|---------------------------------------------------|
| 1. Prof. Sandip Basu <i>Sandip Basu 05/02/21</i> | 2. Prof. Shamik Ghosh <i>S.G. 05/02/21</i> |
| 3. Prof. Rajib Kr. Mandal <i>R.K.M. 05.02.21</i> | 4. Mr. Uttam Kumar Samanta <i>U.K.S. 05/02/21</i> |
| 5. Mrs. Dipanwita Biswas <i>D.B. 05.02.21</i> | 6. Mr. Tathagata Mallick <i>T.M. 05/02/21</i> |
| 7. Mr. Saikat Banerjee <i>S.B. 05.2.21</i> | 8. Mr. Shantabrata Pal <i>S.P. 05/02/21</i> |
| 9. Mr. Goutam Banerjee | |

S. Ghosh 05.02.2021

Samir Ghosh
Convener

SG 05.02.21

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental meeting held on 9th February, 2021 at 4:30 p.m. in the Workshop

1. HOD, Mechanical Engineering Department was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. Initially, progress in curricula of departmental theory papers and labs was reviewed. The overall progress in different theory and practical papers was satisfactory. The syllabi would be finished within the specified time.
3. Progress in course curricula is furnished below:

Faculty Acronym	Subject Completions			
SMG		Engg. Mech [4] 95%	Solid Mechanics [4] 85% Machine Drawing-II 90%	Operations Research* [1] 90%
SDB	Workshop 90%	Manufac. [4] 80% Practice of Manufacturing Processes Lab 85%		Advanced Manufac. Tech. [4] 90% Adv. Manufac. Lab 80%
SHG	Workshop 85%	Thermo [4] 85% Mechanical Engineering Laboratory (Thermal) 90%	Heat Transfer [3] 85%	Renew. Energy [3] 75%
RJM	Workshop 85%	Engg. Mech [3] (EE) 90%		Advanced Welding Tech. [3] 75%
SAG	Engg. Graphic & Design 90%		Kine. & Th. of Mach. (4) 90%	Power Plant Engg. [3] 80% Operations Research* [2] 90%

4. Attendance of students of departmental theory and practical papers were reviewed. It was observed that the attendance in the theory classes decreased compared to the practical classes due to average course completion in the theory papers being over 80%.
5. The format for the final Project Report had been given in the WhatsApp Group. The faculty members were requested to instruct their respective project groups to download the format. The last date for submission of the final Project Report would be announced shortly.
6. The H.O.D. also requested the concerned faculty members & technical assistants to prepare question papers for the MAKAUT Practical Examination and to ready the marks for the respective labs
7. The Faculty members & Technical Assistants were requested to conduct mentor meetings as per schedule.
8. There being no other business, the meeting ended with a vote of thanks to the chair.

S. Ghosh 12.02.21

Samir Ghosh
Convener

SG 12.02.21

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 06.12.2020

Notice

A Departmental meeting (on-line Mode) will be held on 10.12.2020 at 4.00 P.M. in the Google meet Platform. The meeting will discuss the following agenda:

1. Review of Lesson Plans, Assignment Lists & Lab Manuals by faculties
2. 4th year Project (Part I)
3. Preparation for competitive exams/ campus recruitment
4. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|---------------------------|----------------------------|
| 1. Prof. Sandip Basu | 2. Prof. Shamik Ghosh |
| 3. Prof. Rajib Kr. Mandal | 4. Mr. Uttam Kumar Samanta |
| 5. Mrs. Dipanwita Biswas | 6. Mr. Tathagata Mallick |
| 7. Mr. Saikat Banerjee | 8. Mr. Shantabrata Pal |
| 9. Mr. Goutam Banerjee | |

Samir Ghosh 06.12.20

Samir Ghosh
Convener

Dr. Smitadhi Ganguly 06.12.20

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental meeting held on 10th December, 2020 at 4.00 p.m. in the On-line Mode

1. H.O.D, Mechanical Engg. Dept., was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. The theory class distribution amongst faculty members and lab class distribution amongst faculty members and technical assistants had already been finalized. The departmental routine was finalized and published recently with necessary modifications.
3. Most of the faculty members have already submitted the Lesson Plans of their theory papers. Those remaining were instructed to submit their Lesson Plans within the coming week. Those who have not submitted the Assignment List of their respective labs will also have to do so within the coming week.
4. The H.O.D, instructed the faculty members to submit the Lab Manuals of their respective labs by next week.
5. The H.O.D, also instructed the faculty members to schedule semester end Improvement Classes for various departmental subjects.
6. Project work for 4th year students were also reviewed. Most of the project super-visor told that their students were performing project(I) work quite acceptably.
7. It was discussed on the preparation of the 3rd year students for competitive exams and campus recruitment drive. It was decided to organize additional aptitude classes, mock interviews, and practice sessions to better prepare students for placement opportunities. Faculty members were requested to identify and recommend suitable resources for exam preparation.
8. There being no other business, the meeting ended with a vote of thanks to the chair.

S. Ghosh 12.12.20

Samir Ghosh
Convener

SA 12.12.20

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 17.01.2020

Notice

A Departmental meeting will be held on 21.01.2020 at 4.30 A.M. in the Workshop. The meeting will discuss the following agenda:

1. Review of Lesson Plans, Assignment Lists & Lab Manuals by faculties
2. Assignment and Marks submission of CA1 for 6th and 8th Semester
3. CA4 Examination and Submission of marks for PCA2 for 1st year and 2nd year students
4. Preparation of Practical examination for 1st and 2nd year students (Engineering Graphics and Design; Workshop/ Manufacturing Practice Lab; Practice of Manufacturing Process)
5. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|-----------------------------------------------------------|----------------------------------------------------------------|
| 1. Prof. Sandip Basu <i>Sandip Basu 17/1/20</i> | 2. Prof. Shamik Ghosh <i>Shamik Ghosh 17/1/20</i> |
| 3. Prof. Rajib Kr. Mandal <i>Rajib Kr. Mandal 17/1/20</i> | 4. Mr. Uttam Kumar Samanta <i>Uttam Kumar Samanta 17/01/20</i> |
| 5. Mrs. Dipanwita Biswas <i>Dipanwita Biswas 17-01-20</i> | 6. Mr. Tathagata Mallick <i>Tathagata Mallick 17/01/20</i> |
| 7. Mr. Saikat Banerjee <i>Saikat Banerjee 17/1/20</i> | 8. Mr. Shantabrata Pal <i>Shantabrata Pal 17/01/20</i> |
| 9. Mr. Goutam Banerjee | |

S. Ghosh 17.01.2020

Samir Ghosh
Convener

SB 17.01.20

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental Meeting held on 21st January, 2020 at 4.30 p.m. in the Workshop

1. H.O.D., Mechanical Engg. Dept., was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. The theory class distribution amongst faculty members and lab class distribution amongst faculty members and technical assistants had already been finalized. The departmental routine was finalized and published recently with necessary modifications.
3. Most of the faculty members have already submitted the Lesson Plans of their theory papers. Those remaining were instructed to submit their Lesson Plans within the coming week. Those who have not submitted the Assignment List of their respective labs will also have to do so within the coming week.
4. The H.O.D. instructed the faculty members to submit the **Lab Manuals** of their respective labs by next week.
5. It was decided to prepare report writing assignment topics and assign them to the students for Continuous Assessment 1 (CA1) for 6th and 8th Semesters. Faculty members were reminded of the importance of adhering to the deadline to facilitate efficient evaluation and feedback.
6. The upcoming CA4 examination and subsequent submission of marks for Practical Cumulative Assessment 2 (PCA2) for 1st and 2nd year students were discussed. It was stressed that accuracy and punctuality in marking and result submission are crucial for academic integrity.
7. The preparation for Practical examinations in Engineering Graphics and Design (PC-ME191), Workshop/Manufacturing Practice Lab (PC-ME192), and Practice of Manufacturing Process (PC-ME-391) for 1st and 2nd-year students was discussed. Faculty members were assigned specific responsibilities to ensure the smooth conduction of these examinations.
8. The H.O.D. instructed the faculty members to schedule semester end Improvement Classes for various departmental subjects as per requirement.
9. The H.O.D. also instructed the faculty members to schedule semester end Improvement Classes for various departmental subjects.
10. There being no other business, the meeting ended with a vote of thanks to the chair.

S. Ghosh 21.01.2020

Samir Ghosh
Convener

SG 24.01.20

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

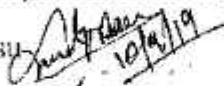

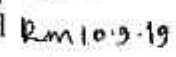
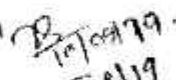
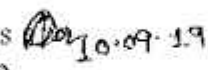
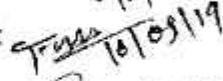

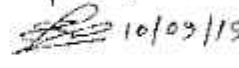
Date: 10.09.2019

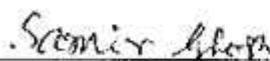
Notice

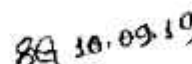
A Departmental meeting will be held on 15.09.2019 at 12.30 P.M. in the Faculty room. The meeting will discuss the following agenda:

1. Student attendance report and corrective measures to be taken
2. Progress in Curricula
3. Progress of Project Work for 4th year students
4. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1. Prof. Sandip Basu  | 2. Prof. Shamik Ghosh  |
| 3. Prof. Rajib Kr. Mandal  | 4. Mr. Uttam Kumar Samanta  |
| 5. Mrs. Dipanwita Biswas  | 6. Mr. Tathagata Mallick  |
| 7. Mr. Saikat Banerjee  | 8. Mr. Shantabrata Pal  |
| 9. Mr. Goutam Banerjee | |


Samir Ghosh
Convener


Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental meeting held on 15th September, 2019 at 4:30 p.m. in the Workshop

1. HOD, Mechanical Engineering Department was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. Initially, progress in curricula of departmental theory papers and labs was reviewed. The overall progress in different theory and practical papers was satisfactory. The syllabi would be finished within the specified time.
3. Progress in course curricula is furnished below:

Faculty Acronym	Subject Completions			
SMG	Engg. Mech. 90%	MC Design (ME-503) - 80%	Operations Research 70%	Design Practice-I Lab (ME-593)- 85%
SDB	Thermo 80%	Advanced Manufac. Tech. (ME 702) 70%	Workshop -60%	Advance Manu. Lab 75%
	Manuf. Process 75%		Practice of Manufacturing Processes 75%	
SHG	Thermo dynamics - 80%	Metrology & Meas. -80%	Renew. Energy 70%	Metrology Lab -80%
				Workshop -60%
RJM	Advanced Welding Tech. (ME. 704B) 85%	Heat Transfer-75%	Workshop – 80%	Appl. Thermo. & Heat Transfer Lab 80%
SAG	DOM 85%	Power Plant 75%	Applied Mechanics Lab (ME 393) -100%	Engg. Graphics – 80%
		Operations Research 80%		

4. Attendance of students of departmental theory and practical papers were reviewed. It was observed the attendance in the theory classes decreased compared to the practical classes due to average course completion in the theory papers being over 80%.
5. Project work for 4th year students were also reviewed. Most of the project supervisor told that their students were performing project work quite acceptably.
6. The Faculty members & Technical Assistants were requested to conduct mentor meeting as per schedule.
7. There being no other business, the meeting ended with a vote of thanks to the chair.

Samir Ghosh 16.09.2019
 Samir Ghosh
 Convener

8/15.09.2019
 Dr. Smitadhi Ganguly
 H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

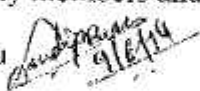
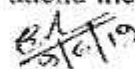
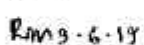
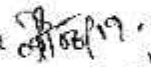
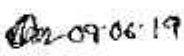
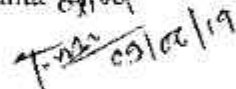

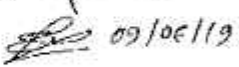
Date: 09.06.2019

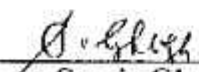
Notice

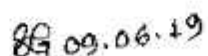
A Departmental meeting will be held on 20.06.2019 at 4.00 P.M. in the Workshop. The meeting will discuss the following agenda:

1. Finalization of subject teachers for the odd semesters of the coming academic session and routine preparation
2. SWOC Analysis of the Department
3. Departmental budget for the coming financial year
4. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1. Prof. Sandip Basu  | 2. Prof. Shamik Ghosh  |
| 3. Prof. Rajib Kr. Mandal  | 4. Mr. Uttam Kumar Samanta  |
| 5. Mrs. Dipanwira Biswas  | 6. Mr. Tathagata Mallick  |
| 7. Mr. Saikat Banerjee  | 8. Mr. Shantabrata Pal  |
| 9. Mr. Goutam Banerjee | |

 09.06.2019
Samir Ghosh
Convener

 09.06.19
Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental meeting held on 20th June, 2019 at 4.300 P.m. in the Workshop

1. H.O.D, Mechanical Engg. Dept., was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. MAKAUT has introduced a new syllabus for the coming second years (Odd 2019) students but for the 3rd & 4th years the syllabus is the same. There was a vast change in syllabus for both theory papers and laboratory papers. Number of laboratories has decreased for the 2nd year mechanical engineering department.
3. The load/subject distribution for the coming odd semesters was finalized and is furnished below:

Faculty Acronym	1 st Semester	3 rd Semester	5 th Semester	7 th Semester	Load
SMG		Engg. Mech [4]	MC Design (ME. 503) [4]	Operations Research (ME705 C) [1]	9
SDB		Thermo [2] Manuf. Process [4]		Advanced Manufac. Tech. (ME 702) [4]	10
SHG		Thermo [2]	Metrology & Meas. (ME 504) [3]	Renew. Energy [3]	8
RJM		Engg. Mech [3] (EE)	Heat Transfer [4]	Advanced Welding Tech. (ME 704B) [3]	10
SAG			DOM [3]	Power Plant Engg. (ME 701) [4] Operations Research* (ME 705C) [2]	9

4. The lab class distribution for the coming odd semesters was finalized and the details are shown below. First year laboratory classes which would be distributed depending solely on availability as per routine.

Faculty Members					
Fac. /TA Acronym	1 st Semester	3 rd Semester	5 th Semester	7 th Semester	Load
SMG			Design Practice –I (ME 593) (6)		6
SDB	Workshop Sec A (Gr-A1) [5]	Practice of Manufacturing Processes [3]		Adv. Manufac. Lab (ME 791) (6)	14
SHG	Workshop Sec A (Gr-B) [5]		Met. & Measurement Lab (ME 594) (6)		11
RJM	Workshop Sec C [CE+ME] [5]		A. T. & H. T Lab (ME 592) (6)		11
SAG	Engg. Drg. & Comp. Graphics [10]	Applied Mechanics Lab (ME 393) (6)			16
Technical Assistants					
UKS	Workshop [10]		Met. & Measurement Lab (ME 594) (3)		13



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

SBP	Workshop [5]	Practice of Manufacturing Processes [3]		Adv. Manufac. Lab (ME 791) (6)	14
DNB	Engg. Drg. & Comp. Graphics [10]		Met. & Measurement Lab (ME 594) (3)		16
			Design I [3]		
TM	Workshop [5]		Design Practice –I (ME 593) (6)		11
SAB	Workshop [10]	Practice of Manufacturing Processes [3]			13
GB	Workshop [5]		A. T. & H. T Lab (ME 592) (6)		11

5. The Faculty members were requested to submit their course diary (Even 2019) and Technical Assistants were told to update their stock register as early as possible.
6. The faculty members were requested to prepare their Lesson Plans, Assignment Lists, question banks & Lab Manuals
7. SWOC (Strengths, Weaknesses, Opportunities, and Challenges) analysis of the department was discussed. Faculty and technical staff members actively participated in identifying the department's internal strengths and weaknesses. This workout provided valuable insights into the current state of the department and served as a base for strategic planning.
8. The departmental budget for the upcoming semester was discussed for the laboratory equipment's (new/repair) and other essential departmental needs. H.O.D requested all the faculty members and technical staff members to provide input and suggestions for budget allocation based on their respective requirements within next week.
9. There being no other business, the meeting ended with a vote of thanks to the chair.

Samir Ghosh 21.06.19

Samir Ghosh
Convener

SG 21-06-19

Dr. Smitadhi Ganguly
H. O. D., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 07.11.2018

Notice

A Departmental meeting will be held on 15.11.2018 at 11.30 A.M. in the faculty room. The meeting will discuss the following agenda:

1. Subject-load distribution for the next even semesters (2019) and routine preparation
2. Submission of course dairy
3. Preparation of question papers and lab manuals for the coming even semester
4. Coming MAKAUT Practical Examination and marks submission for odd Semester
5. Completion of updated stock register for respective labs
6. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|--------------------------------------------------------|------------------------------------------------------------|
| 1. Prof. Sandip Basu <i>Sandip Basu 07/11/18</i> | 2. Prof. Shamik Ghosh <i>Shamik Ghosh 07/11/18</i> |
| 3. Prof. Rajib Kr. Mandal <i>Rajib Mandal 07/11/18</i> | 4. Mr. Uttam Kumar Samanta <i>Uttam Samanta 07/11/18</i> |
| 5. Mrs. Dipanwita Biswas | 6. Mr. Tathagata Mallick <i>Tathagata Mallick 07/11/18</i> |
| 7. Mr. Saikat Banerjee <i>Saikat Banerjee 07/11/18</i> | 8. Mr. Shantabrata Pal <i>Shantabrata Pal 07/11/18</i> |
| 9. Mr. Goutam Banerjee | |

Samir Ghosh 07.11.2018

Samir Ghosh
Convener

Dr. Smitadhi Ganguly 07.11.18

Dr. Smitadhi Ganguly
D.I.C., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental Meeting held on 15th November, 2018 at 4.30 p.m. in the Workshop

1. H.O.D., Mechanical Engg. Dept., was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. The theory load/subject distribution for the coming even semesters was finalized. The details is tabulated below:

Faculty Acronym	2 nd Semester	4 th Semester	6 th Semester	8 th Semester	Load
SMG		Mechanism [3]	Machine Design [3]		6
SDB			M/C Principles & M/C Tools [3]		6
			Mat. Handling [3]		
SHG		Fluid Mechanics [4]	Air Conditioning & Refrigeration [3]		7
RJM		Thermal Power (EE) [3]		Automobile Engineering [3]	8
		Primary Manufa. Process [2]			
SAG		Primary Manufac. [2]	IC Engine & Gas Turbine [3]	Quality & Reliability [3]	8

3. The lab class distribution for the coming even semesters was finalized and the details are shown below:

Faculty Members

Faculty Acronym	2 nd Semester	4 th Semester	6 th Semester	8 th Semester	Load
SMG		Machine Drawing -II (ME 491) (6)	Design Practice -II (ME 692) (6)		18
			Dynamics of Machine Lab [6]		
SDB	Workshop (ME 292) [5]	Material Testing Lab [6]	Machining & Machine Tools Lab [6]		17
SHG	Workshop (ME 292) [10]	Fluid Mechanics Lab (6)	Air Conditioning & Refrigeration [6]		22
RJM	Workshop Practice-I (ME 292) (5)	Manufac. Tech. Lab [6]			17
		Thermal Power Lab (EE) [6]			



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

SAG	Engineering Drawing & Computer Graphics		I.C. Engine Lab [6]		16
Technical Assistants					
DKS	Workshop Practice-I (ME 292) (10)	Thermal Power Lab (FE) [3]	Machining & M/C Tools Lab [6]		22
			IC Engine Lab [3]		
SBP	Workshop Practice-I (ME 192) (5)	Workshop Practice-II (ME 392) (6)	Advance Manufacturing Lab [6]		17
TM	Engineering Drawing & Computer Graphics	Applied Mechanics Lab (ME 393) (6)	Design Practice –I (ME 593) (6)		22
SAB	Workshop Practice-I (ME 192) (10)	Workshop Practice-II (ME 392) (6)	Seminar-I (ME581) [2]		20
			Viva Voce on VI [?]		
GB	Workshop Practice-I (ME 192) (10)		Air Conditioning & Refrigeration Lab (6) I.C. Engine Lab	Viva Voce on VI (ME 782) (2)	20
				Seminar [2]	
DNB	Engineering Drawing & Computer Graphics	Machine Drawing I (ME 391) (6)			19

- The H.O.D. requested the faculty members to organize and submit the respective course dairies (Odd 2018) in the next departmental meeting.
- The H.O.D. requested the allotted faculty member to prepare time table for the coming even semester 2019
- The H.O.D. also requested the concerned faculty members to prepare question banks for their respective theory papers as well as the lab manuals of their respective labs so that these are ready before the commencement of the next even semester.
- The H.O.D. also requested the concerned faculty members & technical assistants to prepare question papers for the MAKAUT Practical Examination and to ready the marks for the respective labs
- The technical assistants were requested to complete and submit the updated stock registers of their respective labs.
- There being no other business, the meeting ended with a vote of thanks to the chair.

Samir Ghosh 18.11.2018
Samir Ghosh
 Convener

Dr. Smitadhi Ganguly 18.11.18
Dr. Smitadhi Ganguly
 D.I.C., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Date: 12.09.2018

Notice

A Departmental meeting will be held on 18.09.2018 at 12.30 P.M. in the Faculty room. The meeting will discuss the following agenda:

1. Progress in Curricula
2. Student attendance report and corrective measures to be taken
3. Progress of Project Work for 4th year students
4. Conduction of mentor meeting
5. Miscellaneous, if any

The following faculty members and technical assistants are requested to attend the meeting:

- | | |
|-------------------------------------------------|-----------------------------------------------------|
| 1. Prof. Sandip Basu <i>Sandip Basu 12/9/18</i> | 2. Prof. Shamik Ghosh <i>SG 12/9/18</i> |
| 3. Prof. Rajib Kr. Mandal <i>Rm 12.9.18</i> | 4. Prof. Abhijit Dutta <i>Abhijit Dutta 12/9/18</i> |
| 5. Mr. Uttam Kumar Samanta <i>UKS 12.09.18</i> | 6. Mr. Goutam Banerjee |
| 7. Mrs. Dipanwita Biswas <i>DB 12.09.18</i> | 8. Mr. Tathagata Mallick <i>T.M. 12/09/18</i> |
| 9. Mr. Saikat Banerjee <i>SB 12.9.18</i> | 10. Mr. Shantabrata Pal <i>SB 12/09/18</i> |

Samir Ghosh 12.09.18

Samir Ghosh
Convener

SG 12.09.18

Dr. Smitadhi Ganguly
D.I.C., ME Dept.



Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Mechanical Engineering Department

Minutes of the Departmental meeting held on 18th September, 2018 at 4:30 p.m. in the Workshop

1. HOD, Mechanical Engineering Department was on the chair. He declared the meeting in order and permitted the proceedings to start as per agenda.
2. Initially, progress in curricula of departmental theory papers and labs was reviewed. The overall progress in different theory and practical papers was satisfactory. The syllabi would be finished within the specified time.
3. Progress in course curricula is furnished below:

Faculty Acronym	Subject Completions			
SMG	DOM (ME-501) 90%	MC Design (ME-503) - 80%	MC/Drawing (ME-391) -70%	Design Practice-I Lab (ME-593)- 85%
ABD	Heat Transfer (ME 502) -100%	Operations Research (ME705 C)-70%	Heat Transfer Lab (ME-592) - 75%	Graphics -60%
SDB	Engg. Materials (ME 303) -60%	Advanced Manufac. Tech. (ME 702) 70%	Workshop -60%	Advance Manu. Lab 75%
SHG	Applied Thermodynamics	Metrology & Meas. (ME 504) -80%	Workshop -II (ME-392)- 90%	Metrology Lab (ME-594) -80%
RJM	Power Plant Engg.* (ME 701)	Advanced Welding Tech. (ME 704B) 85%	Workshop – 80%	
SAG	Strength of Materials* (ME. 302) -80%	Renew. Energy* Systems (ME 703B) – 70%	Applied Mechanics Lab (ME. 393) -100%	Engg. Graphics 80%
		Operations Research* (ME 705C) – 80%		

4. Attendance of students of departmental theory and practical papers were reviewed. It was observed that the attendance in the theory classes decreased compared to the practical classes due to average course completion in the theory papers being over 80%.
5. Project work for 4th year students were also reviewed. Most of the project supervisor told that their students were performing project work quite acceptably.
6. The Faculty members & Technical Assistants were requested to conduct mentor meeting as per schedule. Taihagata Mallick is given responsibility to conduct meeting as the mentor of 3rd year instead of ABD.
7. Rajib Kr Mondal is given responsibility as the central committee member instead of ABD.
8. There being no other business, the meeting ended with a vote of thanks to the chair.

S. Ghosh 20.09.2018

 Samir Ghosh
 Convener

SA 20.09.18

 Dr. Smitadhi Ganguly
 D.I.C., ME Dept.



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
DEPARTMENT OF CSE

Date :20.01.2023

NOTICE

All members of Computer Science and Engineering department are requested to attend a meeting at Lab 4 on 20th January, 2023 at 4pm.

Agenda:

1. Lecture Plan & Lab Plan preparation
2. Upcoming Practical Examination of 2nd Year
3. NAAC related document preparation
4. Conduction of CA1 examination for CSE 3rd Year and 4th year
5. Miscellaneous

B. Halder 20/01/23

Dr. Biswajit Halder
HOD, Department of CSE

1. Dibyendu Samanta *D. Samanta* 20/01/23
2. Mousumi Ojha *M. Ojha* 20/1/23
3. Sumanta Daw *S. Daw* 20/1/23
4. Shyamal Pal
5. Shirshendu Hore *S. Hore* 20.01/23
6. Manab Kumar Saha *Manab K. Saha* 20/1/23
7. Sandeep Bhowmik *S. Bhowmik* 20.01.23
8. Sanghamitra Das
9. Trisha Bera
10. Devadatta Das *Devadatta Das* 20.01.23



HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
DEPARTMENT OF CSE

Departmental Meeting

Date : 20th January, 2023

Time : 4pm

Venue : Lab 4

Agenda:

1. Lecture Plan & Lab Plan preparation
2. Upcoming Practical Examination of 2nd Year
3. NAAC related document preparation
4. Conduction of CAI examination for CSE 3rd Year and 4th year
5. Miscellaneous

Attendance:

1. Dr. Biswajit Halder, HOD
2. Dibyendu Samanta *D. Samanta 20/01/23*
3. Mousumi Ojha *M. Ojha 20/1/23*
4. Sumanta Daw *S. Daw 20/1/23*
5. Shyamal Pal
6. Shirshendu Hore *S. Hore 20.01/23*
7. Manab Kumar Saha *Manab K. Saha 20/1/23*
8. Sandeep Bhowmik *S. Bhowmik 20.01.23*
9. Sanghamitra Das
10. Trisha Bera
11. Devadatta Das *Devadatta Das 20.01.23*



Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly – 712103.

MINUTES OF THE MEETING HELD ON 18/04/2023 AT 4:30 PM

Members Present

1	Prof. (Dr.) Pradosh Kr. Adhvaryu	: Principal, HETC
2	Dr. Smitadhi Ganguly	: HOD, ME 88 19.04.23
3	Dr. Biswajit Halder	: HOD, CSE ————— <i>Biswajit Halder</i> 19/04/23
4	Dr. Rajesh Patra	: HOD, Basic Sc. <i>R. Patra</i> 19/04/23
5	Dr. Rajdip Paul	: HOD, CE <i>Rajdip Paul</i> 19/04/23
6	Mr. Dibyendu Samanta	: DIC, CSE <i>Dibyendu Samanta</i> 19/4/23
7	Mr. Swarup Samanta	: DIC, ECE <i>Swarup Samanta</i> 19/4/23
8	Mr. Anikendu Maitra	: DIC, EE <i>Anikendu Maitra</i> 19/4/23

Prof. (Dr.) Pradosh Kr. Adhvaryu, Principal presides over the meeting as a chair person and officially welcomed the present members. The following resolutions were adopted after detail deliberation.

1. Leave can be taken after approval of the application by competent authority except in emergency condition. In emergency condition also faculty should arrange class/es with other fellow faculty and inform respective HOD about it.
2. All leave applications of faculties to be properly filled mentioning the nature of leave to be taken and the classes during his/her absence should be arranged by that faculty with his/her fellow colleague. Application should bear the complete name of the faculty who will take the class/es during the period and should also endorse his/her willingness by putting his/her signature in the leave application. This should be placed to Principal through endorsement by the HOD. HOD should check properly the leave application and must put his/her opinion regarding allowing the leave or rejecting it based on the academic importance.
3. HOD should check whether the arranged class/es are being properly taken.
4. Leave should not be taken with suffix and or prefix holidays.

5. In a day or duty hours, the HOD must know the presence of faculty and/or technical assistants in his or her department.
6. Leave of any kind should be taken from own account. Any leave beyond own account is not permissible and will be subjected to deduction of salary for those excess leaves.
7. Any faculty and/or technical assistant must obtain permission from the HOD and the Principal before leaving college campus. Otherwise, it will be treated as indiscipline activity.
8. All departmental subjects should be shuffled among faculties at least after taking a subject in three consecutive semesters to make the academic environment healthier.

 19/04/23

Principal, HETC



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

DEPARTMENT OF CSE

Departmental Meeting

Date : 2nd July, 2022

Time : 3pm

Venue : CSE Department Faculty Room

Agenda:

1. Subject distribution for Odd Semester, 2022
2. Miscellaneous

Attendance:

- | | |
|-----------------------|----------------------------|
| 1. DIBYENDU SAMANTA - | S. Samanta 2/7/22 |
| 2. SHYAMAL PAL | S. Pal 2/7/22 |
| 3. SIRSHENDU HORIE | S. Horie 02/07 |
| 4. SANDEEP BHOSMIK | S. Bhosmik 02.07.22 |
| 5. DEVADATTA DAS | Devadatta Das 2.7.22 |
| 6. SOUGATA SAMANTA | Sougata Samanta 02/07/2022 |
| 7. SUMANTA DAW | S. Daw 2/7 |
| 8. TRISHA BERA | Trisha Bera 02/07/22 |
| 9. MANAB KUMAR SAHA | M. K. Saha 02/07/22 |

HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

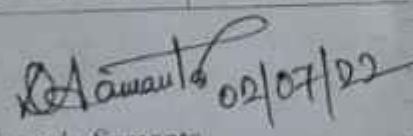
DEPARTMENT OF CSE

The departmental meeting was held on 2nd July, 2022 at 3pm at departmental faculty room.

The Minutes of the meeting are as follows:

1. Subject Distribution for Odd Semester, 2022 is as follows

Name of the Faculty	Theory	Lab
Dibyendu Samanta	DS(CSE 2ND X+Y)-3, DS(EE 3RD)-3	DS (CSE) Lab-9
Mousumi Das	CO(CSE 2ND X+Y)-3, DS(CSE 2ND X+Y)-3	DS (CSE) Lab-9
Sirshendu Hore	OOP(CSE 3RD X+Y)-3, Cloud-1.5, Cyber Security-1.5	OOP Lab -9
Shyamal Pal	AI(CSE 3RD X+Y)-6	IT Workshop Lab-9
Sumanta Daw	OS(CSE 3RD X+Y)-6	OS(CSE 3RD)-9
Sandeep Bhowmik	OOP(CSE 3RD X+Y)-3, Cloud-1.5, Cyber Security-1.5	OOP Lab -9
Manab Kumar Saha	DS(ECE)-3, CN(EE)-3	DS(ECE) Lab-4
Sanghamitra Das	SW(CSE 3RD X+Y)-6	SW Lab-9
Sougata Samanta	CO(CSE 2ND X+Y)-3, AI(EE 4TH)-3	
Trisha Bera	Web Tech(ECE 4TH)-3, COMPILER(CSE 3RD X+Y)-3	
Devadatta Das	COMPILER(CSE 3RD X+Y)-3, MULTI(CSE)-3	


Mr Dibyendu Samanta
DIC, Department of CSE

Mr. Dibyendu Samanta
DIC, Dept. of CSE
HETC, Hooghly.



HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY

DEPARTMENT OF CSE

Date: 26.04.2022

NOTICE

All members of Computer Science & Engineering department are requested to attend a meeting on 27th April, 2022 at 12:15 pm in CSE department faculty room.

Agenda:

1. Mentoring data fill up
2. MAR activities of students
3. Discussion on Final Year Project
4. Poor attendance of 4th year students
5. Poor attendance of 2nd & 3rd year students on Saturday
6. Miscellaneous

D. Samanta 26/04/2022

Dibyendu Samanta
DIC, Department of CSE

Coordinator
Department of CSE

Mr. Dibyendu Samanta
DIC, Dept. of CSE
HETC, Hoochly.

A. An 26/4

B. Ben 26/4

C. Das 26/4

J. Bhosini 27.04.22

S. Hove 26/04/22

A. A 26/4/22

J 26/4/22



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

DEPARTMENT OF CSE

Departmental Meeting

Date: 27th April, 2022

Time: 12:15 pm

Venue: CSE Department Faculty Room

Agenda:

1. Mentoring data fill up
2. MAR activities of students
3. Discussion on Final Year Project
4. Poor attendance of 4th year students
5. Poor attendance of 2nd & 3rd year students on Saturday
6. Miscellaneous

Attendance:

1. DIBYENDU SAMANTA - ~~Samanta~~ 27/04/22
2. MOUSUMI DAS - ~~Mas~~ 27/4
3. Sanghamitra Das - ~~Das~~ 27/4
4. Sumanta Das - ~~S. Das~~ 27/4
5. SANDEEP BHOWMIK - ~~S. Bhowmik~~ 27.04.22
6. SIRSHENDU HORE - ~~S. Hore~~ 27/04/22
8. JYANAD KUMAR SAHA - ~~J. Saha~~ 27/04/22
9. SHYAMAL PAL - ~~S. Pal~~ 27/4/22

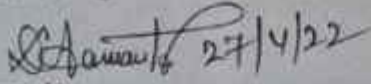
HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

DEPARTMENT OF CSE

The departmental meeting was held on 27th April, 2022 at 4pm at Departmental Faculty Room.

The minutes of the meeting are as follows:

1. Mentoring data fill up :
Mentoring data should be filled up by all the assigned mentors within the specified time. The file will be shared in "CSE folder under Z Drive".
2. MAR activities of the students :
Students should be intimated to submit MAR related documents to respective mentors.
3. Discussion on Final Year project :
Final year students should be intimated by respective project guide to undergo their project work on a regular basis as per the class schedule.
4. Poor attendance of the 4th year students :
4th year students should be intimated to improve their class attendance by the respective class teachers
5. Poor attendance of the 2nd year and 3rd year students :
2nd year and 3rd year students should be intimated to improve their class attendance by the respective class teachers. They will not be allowed for the internal assessment tests if they are fail to improve their class attendance percentage.


Mr Dibyendu Samanta
DIC, Department of CSE

Mr. Dibyendu Samanta
DIC, Dept. of CSE
HETC, Hooghly.



HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
DEPARTMENT OF CSE

Date : 30.06.2022

NOTICE

All members of Computer Science and Engineering department are requested to attend a meeting on 2nd July, 2022 at 3pm in CSE department faculty room.

Agenda:

1. Subject distribution for Odd semester, 2022
2. Miscellaneous

D. Samanta 30/6/22

Dibyendu Samanta
DIC, Dept. of CSE
Mr. Dibyendu Samanta
DIC, Dept. of CSE
HETC, Hooghly.

1) *[Signature]*
30/6/22

2) *S. Hove*
02/02

3) *S. Bhosani*
02.07.22

4) *[Signature]*
2/7/22

5) *S. Das*
2/7

6) *S. Samanta*
02/07/2022

7) *Tirtha Ben*
01/07/22

8) *Devadatta Das*
2.7.22

HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

DEPARTMENT OF CSE

The departmental meeting was held on 5th April, 2021 through Google meet.

The minutes of the meeting are as follows:

1. Subject distribution for even semester,2021

Discussion was done on the subject load distribution for even semester,2021 .Subject load distribution for Even semester ,2021 was prepared and same was displayed in departmental whatsapp group.

Sl No	NAME	THEORY CLASSES	LAB CLASSES
1	Dibyendu Samanta	DAA(CSE,2ND)-1.5, FLAT(CSE,2ND)-1.5, PPS(CSE+CE+ME 1ST)-1.5	DAA(CSE 2ND)-6
2	Mousumi Das	FLAT(CSE 2ND)-1.5, DM(CSE 2ND)-1, PPS(CSE+CE+ME 1ST)-1.5	PPS(CSE+CE+ME 1ST)-6
3	Rupam Some	OOP(ECE 3RD)-3, RESEARCH METHO(CSE 3RD)-1.5	NETWORK(ECE 3RD)-6
4	Sirshendu Hore	DBMS(CSE 3RD)-1.5, CRYPTO(CSE 4TH)-1.5, DAA(ECE 2ND)-1.5	DBMS(CSE 3RD)-6
5	Shyamal Pal	PPS(EE+ECE 1ST)-3, OS(ECE 3RD)-1	PPS(EE+ECE,1ST)-3
6	Sumanta Daw	DAA(CSE,2ND)-1.5,RESEARCH METHO(CSE 3RD)-1.5, ECOMM(CSE,4TH)-1.5	DAA(CSE 2ND)-6,
7	Sandeep Bhowmik	DBMS(CSE 3RD)-1.5, CRYPTO(CSE 4TH)-1.5,DAA(ECE 2ND)-1.5	DBMS(CSE 3RD)-6

8	Manab Kumar Saha	NETWORK(CSE 3RD)-1.5 ,ECOMM(CSE,4TH)-1.5, NETWORK(ECE 3RD)-1.5	NETWORK(ECE 3RD)-6
9	Milan Kr Dholey	NETWORK(CSE 3RD)-1.5 ,DISTRIBUTED ALGO(CSE 3RD)-3	NETWORK(CSE 3RD)-6
10	Sanghamitra Das	DM(CSE 2ND)-1, DIST SYS(CSE 3RD)- 3	NMP(ECE 2ND)-6
11	Trisha Bera	DM(CSE 2ND)-2	
12	Devdatta Das	NETWORK(ECE 3RD)-1.5	
13	Sougata Samanta	CA(CSE 2ND)-2	
14	Chiranjeet Sarkar	OS(CSE 3RD)-2	
15	Somojyoti Sinha		PPS(CSE+CE+ME 1ST)-6, NETWORK(CSE 3RD)-6
16	Suraj Basu		PPS(ECE+ECE 1ST)-3, NMP(ECE 2ND)-6

Mr. Dibyendu Samanta
Coordinator, Department of CSE

D. Samanta 05/04/2021
Coordinator
Department of CSE

HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

DEPARTMENT OF CSE

The departmental meeting was held on 14th March, 2021 at 8pm through Google meet.

The minutes of the meeting are as follows:

1. Conduction of Project and Industrial Training Examination for Odd semester, 2021:
Discussion was done on the conduction of Project & Industrial Training exam. The examination schedule was prepared and displayed in the student groups as well as in the faculty group.


Mr. Dibyendu Samanta
Coordinator, Department of CSE
Department of CSE

HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLY

DEPARTMENT OF CSE

CSE Department Meeting

Date: 3rd July, 2020

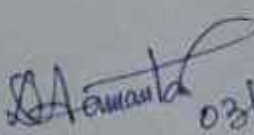
Time : 11am

Members Present in the meeting

1. Dibyendu Samanta
2. Mousumi Das
3. Sumanta Daw
4. Rupam Some
5. Shirshendu Hore
6. Milan Kumar Dholey
7. Manab Kumar Saha
8. Sandeep Bhowmik
9. Sanghamitra Das
10. Somojyoti Sinha

Minutes of the meeting:

1. Conduction of Design Lab, Grand Viva & Project Examination: It was decided that Design Lab, Grand Viva & Project exam would be held in online mode. Design Lab will be held on 13.07.20 and Project viva, Grand viva will be held on 14.07.2020 and 15.07.2020.
2. Project Report Submission deadline: Project report submission deadline was finalized in the meeting. Students have to send a soft copy of project report and ppt file to cse@hetc.ac.in by 11th July, 2020.
3. Marks Submission by the faculty members to the university portal : All concerned were intimated to upload Assignment Marks, Laboratory Marks(60) and sessional papers marks to the university portal within 13.07.2020 and 18.07.2020.
4. All faculty members were informed to check all theoretical and practical papers marks for backlog students they are responsible for, in college login portal and submit their marks positively by 03.07.2020.
5. Elective Choice for 3rd Year : All faculty members were intimated to send their elective choice through Email/Whatsapp by 1st week of July.
6. Semester Fees: All mentors were intimated to inform defaulter students of their mentor group to deposit semester fees on or before the deadline as mentioned in the notice.


Mr. Dibyendu Samanta
Coordinator, Department of CSE

03/07/20
Coordinator
Department of CSE



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

DEPARTMENT OF CSE

Date: 16.08.2019

NOTICE

All members of Computer Science & Engineering department are requested to attend a meeting on 16th August, 2019 at 1:45 pm in CSE department faculty room.

Agenda:

1. Discussion on Final Year Project
2. Faculty Assignment for the Aptitude Classes
3. Faculty Assignment for GATE Classes
4. Discussion on NBA Activities
5. Miscellaneous

D Samanta 16/8/19

Dibyendu Samanta

Coordinator

Department of CSE

**Coordinator
Department of CSE**

Members of CSE department:

1. Dibyendu Samanta *D Samanta 16/8/19*
2. Mousumi Das *M Das 16/8*
3. Rupam Some *R Some 16/8*
4. Shyamal Pal *S Pal 16/8*
5. Sumanta Daw *S Daw 16/8*
6. Sirshendu Hore *S. Hore 16/8*
7. Manab Kumar Saha *M K Saha 16/8*
8. Sandeep Bhowmik *S. Bhowmik 16.08.19*
9. Sanghamitra Das *S Das 16/8*
10. Milan Kumar Dholey
11. Somojyoti Sinha
12. Suraj Basu



HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY

DEPARTMENT OF CSE

Departmental Meeting

Date: 16th August, 2019

Time: 1:45pm

Venue: CSE Department Faculty Room

Agenda:

1. Discussion on Final Year Project
2. Faculty Assignment for the Aptitude Classes
3. Faculty Assignment for GATE Classes
4. Discussion on NBA Activities
5. Miscellaneous

Attendance:

1. Dibyendu Samanta *D. Samanta 16/8/19*
2. Mousumi Das *M. Das 16/8*
3. Rupam Some *R. Some 16/08*
4. Shyamal Pal
5. Sumanta Daw *S. Daw 16/08*
6. Sirshendu Hore *S. Hore 16/08/19*
7. Manab Kumar Saha *M. Saha 16/8*
8. Sandeep Bhowmik *S. Bhowmik 16.08.19*
9. Sanghamitra Das *S. Das 16/8*
10. Milan Kumar Dholey
11. Somojyoti Sinha
12. Suraj Basu *S. Basu 16/8*



**HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY**

DEPARTMENT OF CSE

Date : 26.07.2019

The departmental meeting was held on 26th July, 2019 at departmental faculty room.

The minutes of the meeting are as follows:

1. 4th Year students have to give their demonstration on final year project from 27th August, 2019 to 31st August, 2019 describing their project progress. Faculty members will be present at the time of demonstration as per their availability.
2. Sandeep Bhowmik, Shirshendu Hore & Sumanta Daw have been selected as the mentors for the 2nd Year CSE batch.
3. Dates of the mentor meeting have to be given by the mentors as soon as possible. After receiving the dates from mentors the notification will be done.
4. Discussions were done on the mail send by Principal Sir on 18th July, 2019. It has been decided that feedback will be given by the faculty members and the technical assistants on that issue. After receiving the feedback from the members will be summarized and sent to the Principal Sir.
5. Some fields for the domain specific training of 3rd & 4th Year Students have been proposed. Those are mentioned below :
 - i) Machine Learning
 - ii) Android
 - iii) Data Science
 - iv) Cloud Computing
 - iv) Cyber Security
 - v) Big Data
6. Aptitude Classes for the students have to be conducted.
7. A note sheet containing the immediate requirements of the department has been submitted.

Mr. Dibyendu Samanta
Coordinator, Department of CSE

D. Samanta
26/07/19
Coordinator
Department of CSE



HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY

DEPARTMENT OF CSE

Date: 25.07.2019

NOTICE

All members of Computer Science & Engineering department are requested to attend a meeting on 26th July, 2019 at 1:45 pm in CSE department faculty room.

Agenda:

1. Discussion on Final Year Project
2. Mentor Selection for 2nd Year CSE(2018-22 Batch)
3. Mentor meeting dates
4. Discussion on the mail sent by Principal Sir on 18th July, 2019
5. Discussion on training for 2nd Year and 3rd Year students
6. Aptitude Classes for the students
7. Miscellaneous

D Samanta 25/7

Dibyendu Samanta
Coordinator
Department of CSE

Coordinator
Department of CSE

Members of CSE department:

1. Dibyendu Samanta
2. Mousumi Das *M Das 25/7*
3. Rupam Some
4. Shyamal Pal *S Pal 25/7*
5. Sumanta Daw *S Daw 25/7*
6. Sirshendu Hore *S Hore 25/7*
7. Manab Kumar Saha *M Saha 25/7*
8. Sandeep Bhowmik *S Bhowmik 25.07.19*
9. Sanghamitra Das
10. Milan Kumar Dholey *M Dholey 25/7*
11. Somojyoti Sinha *S Sinha 25/7*
12. Suraj Basu *S Basu 25/7*

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CSE

Date : 12th July, 2019

Time : 1:45 pm

Venue : CSE Department Faculty Room

Minutes of the meeting

1. Discussion on academic matters
2. 4th Year Project
3. Miscellaneous

Attendance:

1. Dibyendu Samanta *D Samanta 12/7/19*
2. Mousumi Das *M Das 12/7/19*
3. Sirshendu Hore *S. Hore 12/07/19*
4. Sumanta Das *S. Das 12/7/19*
5. Shyamal Pal *Shyamal Pal 12/7/19*
6. Sandeep Bhowmik
7. Rupam Some *R Some 12/7*
8. Sanghamitra Das *S Das 12/7*
9. Manab Kumar Saha *M K Saha 12/7/19*
10. Milan Kumar Dholey *M K Dholey 12/7/19*
11. Somojyoti Sinha
12. Suraj Basu *S Basu 12/7*



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY

DEPARTMENT OF CSE

Date: 13.06.2019

NOTICE

All members of Computer Science & Engineering department are requested to attend a meeting on 14th June, 2019 at 11:00 A.M in SDC office room.

Agenda:

1. Preparation of lecture and laboratory plans.
2. Preparation of question bank (chapter wise/module wise).
3. Discussion to be made on Assignment format and quiz format.
4. Declaration of different committees for proper functioning of the department.
5. Monitoring students' attendance.
6. Discussion on Internal/Improvement question paper format.
7. Internal/Improvement tests for backlog students
8. Discussion on final year project.
9. Discussion on the activities of mentors.
10. Laboratory manuals updation
11. Departmental Library.
12. Budget for next financial year.
13. Laboratory maintenance
14. Implementation of modern views of teaching-learning
15. Miscellaneous

D. Samanta 13/6/19

Dibyendu Samanta
Coordinator
Department of C

Coordinator
Department of CSE

Members of CSE department:

- | | |
|----------------------------------|-----------------------------------------|
| 1. Dibyendu Samanta | 7. Manab Kumar Saha |
| 2. Mousumi Das | 8. Sandeep Bhowmik |
| 3. Rupam Some <i>SD 13.06.19</i> | 9. Sanghamitra Das <i>SD 13/6</i> |
| 4. Shyamal Pal <i>SD 13/6/19</i> | 10. Milan Kumar Dholey <i>SD 13/6</i> |
| 5. Sumanta Daw <i>SD</i> | 11. Somojyoti Sinha <i>saha 13/6/19</i> |
| 6. Sirshendu Hore <i>SH</i> | 12. Suraj Basu <i>Basu 13/6</i> |



HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY

DEPARTMENT OF CSE

CSE Department Meeting

Date & Time: 11am, 14th June, 2019

Venue: SDC Office Room

Agenda:

1. Discussions on previous meeting
2. Preparation of lecture and laboratory plans.
3. Preparation of question bank (chapter wise/module wise).
4. Discussion to be made on Assignment format and quiz format.
5. Declaration of different committees for proper functioning of the department.
6. Monitoring students' attendance.
7. Discussion on Internal/Improvement question paper format.
8. Internal/Improvement tests for backlog students
9. Discussion on final year project.
10. Discussion on the activities of mentors.
11. Laboratory manuals updation
12. Departmental Library.
13. Budget for next financial year.
14. Laboratory maintenance
15. Implementation of modern views of teaching-learning
16. Miscellaneous

Attendance:

1. Dibyendu Samanta *D Samanta 14/6/19*
2. Mousumi Das *M Das 14/6/19*
3. Rupam Some *R Some 14-6-19*
4. Shyamal Pal *S Pal 14/6*
5. Sumanta Das *S Das 14/6*
6. Sirshendu Hore *S Hore 14/06/19*
7. Manab Kumar Saha
8. Sandeep Bhowmik *S Bhowmik 14-06-19*
9. Sanghamitra Das *S Das 14/6/19*
10. Milan Kumar Dholey *M Dholey 14/6/19*
11. Somojyoti Sinha *S Sinha 14/6/19*
12. Suraj Basu *S Basu 14/06 14/6/19*



HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY

DEPARTMENT OF CSE

Date: 13.06.2019

NOTICE

All members of Computer Science & Engineering department are requested to attend a meeting on **14th June, 2019** at **11:00 A.M** in SDC office room.

Agenda:

1. Preparation of lecture and laboratory plans.
2. Preparation of question bank (chapter wise/module wise).
3. Discussion to be made on Assignment format and quiz format.
4. Declaration of different committees for proper functioning of the department.
5. Monitoring students' attendance.
6. Discussion on Internal/Improvement question paper format.
7. Internal/Improvement tests for backlog students
8. Discussion on final year project.
9. Discussion on the activities of mentors.
10. Laboratory manuals updation
11. Departmental Library.
12. Budget for next financial year.
13. Laboratory maintenance
14. Implementation of modern views of teaching-learning
15. Miscellaneous

D. Samanta 13/6/19

Dibyendu Samanta
Coordinator
Department of CSE

Copy to:

1. Principal
2. Faculty notice board of CSE department

- Discussion on the monitoring of the students' attendance was done. Warning can be given to the students having poor attendance in a gap of 1 week or 2 weeks so that they can achieve the attendance 75% attendance percentage as per the university guideline.
- In the upcoming meeting discussions may be done on the following agenda because these agenda were untouched today due to unavailability of time-
 - Functioning of the departmental library and students' access
 - Assignment and quiz format
 - Common project report format
 - Modification/Preparation of the Laboratory manuals
 - Seminar Lectures by Internal/External faculty/students

D. Samanta 14/06/2019
Mr. Dibyendu Samanta
Coordinator, Department of CSE
Coordinator
Department of CSE



**HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLY**

DEPARTMENT OF CSE

Date : 14.06.2019

The departmental meeting was held on 14.06.2019 at the office of Skill Development Centre and was presided over by the Hon'ble Principal, HETC.

The minutes of the above mentioned meeting are as follows:

- The main agenda of the meeting was to concentrate on various departmental academic, administrative and financial issues along with other relevant points.
- A discussion was held on regarding the need and advantage of the departmental meeting.
- Procedural aspects for holding departmental meeting were discussed.
- Discussion on preparation of the minutes of the meeting and necessary action plan was there.
- Departmental faculty members and technical staff members agreed on the fact that there must be regular follow up and updating of action related to the departmental activities.
- It was discussed that not only academic but also financial and administrative issues may be considered for departmental meeting.
- A discussion related to final year project was also held on where issues like selection of project title, preparation project report were discussed.
- Departmental faculty members had given their opinion regarding organizing departmental seminar.
- Proposal given by the departmental faculty members to prepare the academic calendar for the upcoming semester
- Different departmental sub-committees have been formed for the smooth functioning of the department. The sub committees are
 - Departmental Library Committee
 - Departmental Seminar/Workshop Committee
 - Departmental Project/Training Committee
 - Departmental Budget & Maintenance Committee
 - Departmental Academic Committee



HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLY

DEPARTMENT OF CSE

Date: 13.06.2019

NOTICE

All members of Computer Science & Engineering department are requested to attend a meeting on 14th June, 2019 at 11:00 A.M in SDC office room.

Agenda:

1. Preparation of lecture and laboratory plans.
2. Preparation of question bank (chapter wise/module wise).
3. Discussion to be made on Assignment format and quiz format.
4. Declaration of different committees for proper functioning of the department.
5. Monitoring students' attendance.
6. Discussion on Internal/Improvement question paper format.
7. Internal/Improvement tests for backlog students
8. Discussion on final year project.
9. Discussion on the activities of mentors.
10. Laboratory manuals updation
11. Departmental Library.
12. Budget for next financial year.
13. Laboratory maintenance
14. Implementation of modern views of teaching-learning
15. Miscellaneous

D. Samanta 13/6/19

Dibyendu Samanta
Coordinator
Department of CSE

Copy to:

1. Principal
2. Faculty notice board of CSE department



HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOCHLY

DEPARTMENT OF CSE

Date: 13.06.2019

NOTICE

All members of Computer Science & Engineering department are requested to attend a meeting on 14th June, 2019 at 11:00 A.M in SDC office room.

Agenda:

1. Preparation of lecture and laboratory plans.
2. Preparation of question bank (chapter wise/module wise).
3. Discussion to be made on Assignment format and quiz format.
4. Declaration of different committees for proper functioning of the department.
5. Monitoring students' attendance.
6. Discussion on Internal/Improvement question paper format.
7. Internal/Improvement tests for backlog students
8. Discussion on final year project.
9. Discussion on the activities of mentors.
10. Laboratory manuals updation
11. Departmental Library.
12. Budget for next financial year.
13. Laboratory maintenance
14. Implementation of modern views of teaching-learning
15. Miscellaneous

D Samanta 13/6/19

Dibyendu Samanta
Coordinator
Department of CSE

Copy to:

1. Principal
2. Faculty notice board of CSE department

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGHLY
PIN-712103



Date: 7th December, 2018

Notice for Faculty Members & Technical Staffs of CSE Department

All the faculty members and Technical Staffs of Computer Science & Engineering department are here by informed that a meeting will be held on 8th December, 2018 at 1:10 PM in lab - 2.

Agenda:

1. Discussion regarding subject distribution for upcoming even semester (2018 - 19).
2. Discussion regarding marks for final year Project-I, Industrial Training and Group Discussion.
3. Discussion regarding Internal Marks for all the years except first year.
4. Miscellaneous.

Mas 7/12

Prof. Mousumi Das
D.I.C (CSE), HETC

Signature (Faculty and Staff Members):

S. Bhosani 07.12.18 *[Signature] 07.12.18*
S. Das
H/n
S. Hossain 07/12 *[Signature]*
18 *08/12*
[Signature]
7/12/18
[Signature] 07/12

Hooghly Engineering & Technology College
Department of Electrical Engineering

Date: 28.06.2023

Minutes of the meeting held on 28.06.2023 at 10:30 AM on the following agenda:

1. Confirmation on Subject Distribution for Odd semester, 2023
2. Confirmation on Final Year Project allocation for 2023-24
3. NAAC Accreditation related work
4. Re-assigning duties as Laboratory in-charge
5. Miscellaneous.

Members Present:

1. Mr. Anikendu Maltra, Assistant Prof. & Coordinator, EE Dept. *AM*
2. Dr. Suhas Deb, Associate Professor, EE Dept. *S. Deb*
3. Dr. Anirban Upadhyaya, Assistant Prof., EE Dept. *A. Upadhyaya*
4. Mr. Chandan Jana, Asst. Prof., EE Dept. *Chandan*
5. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. *Debolina*
6. Mrs. Shilpi Saha, Asst. Prof., EE Dept. *S. Saha*
7. Mr. Sandip Das, Asst. Prof., EE Dept.
8. Mrs. Sannistha Banerjee, Asst. Prof., EE Dept. *S. Banerjee*
9. Ms. Swati De, Assistant Prof., EE Dept. *Swati De*
10. Mr. Debasis Bose, STA, EE Dept. *S. Bose*
11. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept.
12. Mr. Ranjit Majhi, STA, EE Dept.
13. Mrs. Soumi Dey, TA, EE Dept.
14. Mrs. Priyanka Ghosh, TA, EE Dept. *P. Ghosh*

Mr. Anikendu Maltra, Coordinator, EE department, hosted the meeting, welcomed all the members and started the proceedings.

Agenda Item #1: Confirmation on Subject Distribution for Odd semester, 2023

Discussion: Subject distribution for odd semester, 2023 was confirmed after following proper procedures (as discussed in previous meeting). Following resolution is drawn at the end of the discussion:

Subject Code	Subject Name	Faculty & TA
PC-EE 301	Electric Circuit Theory	Dr. Anirban Upadhyaya, Mr. Anikendu Maltra
PC-EE 303	Electromagnetic field theory	Dr. Anirban Upadhyaya, Mr. Chandan Jana
PC-EE 391	Electric Circuit Theory Laboratory	Dr. Anirban Upadhyaya, Mr. Anikendu Maltra, Mrs. Soumi Dey (TA)
PC-EE 501	Electric machine-II	Mr. Sandip Das, Mrs. Sannistha Banerjee
PC-EE 502	Power system-I	Dr. Suhas Deb, Mr. Chandan Jana
PC-EE 503	Control system	Mrs. Shilpi Saha, Ms. Swati De
PC-EE 504	Power electronics	Dr. Suhas Deb, Mrs. Debolina Pradhan
PE-EE 501C	Renewable & Non conventional energy	Mrs. Sannistha Banerjee, Ms. Swati De
PC-EE 591	Electric Machine-II laboratory	Mr. Sandip Das, Mrs. Sannistha Banerjee, Mrs. Soumi Dey (TA), Mr. Sajal Kumar Banerjee (TA)
PC-EE 592	Power system-I laboratory	Dr. Suhas Deb, Mr. Chandan Jana, Mr. Sajal Kumar Banerjee (TA), Mr. Debasis Bose (TA)
PC-EE 593	Control system laboratory	Mrs. Shilpi Saha, Ms. Swati De, Mrs. Priyanka Ghosh

PC-EE 594	Power Electronics laboratory	Dr. Suhas Deb/ Mrs. Debolina Pradhan, Priyanka Ghosh (TA), Mr. Debasish Bose (TA)
PC-EE 701	Electric Drive	Mrs. Debolina Pradhan, Mr. Sandip Das
PE-EE 701C	Power Generation Economics	Dr. Avijit Maity, Mr. Anikendu Maity
PC-EE 791	Electric Drive laboratory	Mrs. Debolina Pradhan, Mr. Sandip Das, Mrs. Soumi Dey, Mr. Sajal Kumar Banerjee

Subject allocation for the paper Basic Electrical Engineering will be done in due course of time depending on availability of faculty members as per time table.

Agenda Item #2: Final Year Project selection for 2022-23

Discussion: Final year project allocation is confirmed in the meeting after completing regular procedures (as discussed in previous meeting). Project allocation report is given below:

Group No.	ROLL NO	NAME	Tentative Project topic	Guide
1	17601621023	Soumyajit Mondal	Comparative Study of Single-phase Power Factor Correction Topologies for Electric Vehicle Battery Charger by using different bridge and bridgeless converters	Mrs. Debolina Pradhan
	17601621024	Kalayan Ray		
	17601621030	AYAN ADHIKARY		
	17601621033	SAYAN KUMAR GAYEN		
	17601621042	Subhro Mandal		
2	17601621028	Manish Rai	Monitoring and control of vehicles over speed employing automated night lighting systems.	Dr. Suhas Deb
	17601621034	SURYA KANTA MONDAL		
	17601621021	SUMIT SARKAR		
	17601621011	Akash Mishra		
3	17601620006	Rupan Biswas	Fault detection and fault location identification by AI (artificial intelligence) based techniques.	Mrs. Sannistha Banerjee
	17601620007	SOUVIK SETH		
	17601621022	Sudipta Ghosh		
	17601621031	Debmallya Mondal		
4	17601621005	Subhadip Sebait	Design, analysis and hardware implementation of an Advance DC-DC converter for electric vehicle application	Mrs. Shilpi Saha
	17601621006	SUBHAM BASULI		
	17601621007	SUSMITA KOTAL		
	17601621008	TRIDIB KUNDU		

Group No.	ROLL NO	NAME	Tentative Project topic	Guide
5	17601621040	Souradip Bag	Cost-effectiveness of Electric Vehicle	Dr. Avijit Maity
	17601621041	Abhijit Sarkar		
	17601621037	Swapnamoy Dutta		
	17601621035	Kalyan Das		
6	17601621009	Arpan Som	Thermal Analysis of IM (Induction Motor) and PMSM (Permanent Magnet Synchronous Motor) used in EV (Electric Vehicles)	Mr. Chandan Jana
	17601621010	Subhronil Sen		
	17601621012	Arindom Bera		
	17601620001	Megha Singh		
7	17601621025	Kunal Koley	PID Controller Design	Ms. Swati De
	17601621029	DIBYENDU KOLEY		
	17601621038	Ayan Pal		
	17601621039	TITHI BISWAS		
8	17601620008	Joy Samanta	Analysis of micro-grid protection strategies	Mr. Anikendu Maity
	17601621019	PUJA DAS		
	17601621027	ANIRBAN CHATTERJEE		
	17601621036	Souvik rana		
9	17601620002	Rahul Dom	Earthquake detection system	Dr. Anirban Upadhyaya
	17601620005	Rahul Singh		
	17601621032	SOURAV SIKDAR		
	17601620003	SOUVIK DEY		
10	17601620004	SANGRAM CHAKI	Solar Photovoltaic dominated Renewable Energy application in domestic purposes using Arduino Uno & it's different IOT Shields for Automation	Mr. Sandip Das
	17601620009	Nilimesh Ghosh		
	17601620010	Bishnu Debnath		
	17601621020	Nisha Gonjhu		

Agenda Item #3: NAAC Accreditation related work**Discussion:**

- All the faculty members and technical assistants are asked to prepare lesson plan for their respective theory as well as practical papers in the prescribed format previously provided.
- All faculty members and technical assistants are asked to confirm the completion of the all course attainment related work at the earliest.
- All faculty members and technical assistants are asked prepare course file.
- All the members present are also asked to complete the process of preparation of all the departmental files as per the distribution of responsibility previously allocated.

Agenda Item #4: Re-assigning duties as Laboratory in-charge

Discussion: Discussions were held on changing the laboratory in charge of some of the laboratories. It is also discussed that for each laboratory a faculty member along with a technical assistant will be assigned the duty of laboratory in charge. Following resolution is taken in this regard:

Laboratory Name	Teacher in charge	TA in Charge
Basic Electrical Lab	Mrs. Sannistha Banerjee, Ms. Swati De	Mr. Debasish Bose
Electric Circuit Theory Lab	Mr. Anikendu Maltra	Mrs. Soumi Sey
Electric Machine Lab. (I & II)	Mr. Sandip Das	Mrs. Soumi Dey
Electrical and Electronic Measurement Lab.	Dr. Anirban Upadhyaya	Mr. Debasish Bose
Power System Lab (I & II)	Mr. Chandan Jana	Mr. Sajal Kumar Bandyopadhyay
Power Electronics Lab	Dr. Suhas Deb	Mrs. Priyanka Ghosh
Control System Lab	Mrs. Shilpi Saha	Mrs. Priyanka Ghosh
Electric Drives Lab	Mrs. Debolina Pradhan	Mr. Sajal Kumar Bandyopadhyay

Agenda Item #5: Miscellaneous

Discussion: All the laboratory in-charges are going to prepare a report on all the maintenance related work and start the process of procuring any material if required.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 11:30 A.M.


 23/07/23
 Coordinator
 EE Department


 S. Deb



H.O.D.
Electrical Engineering
 Hooghly Engineering & Technology

Copy to:

1. Prof. (Dr.) Pradosh Kumar Adhvaryu, Principal, HETC.
2. Prof. (Dr.) Avijit Maity, H.O.D., EE Dept., HETC.
3. File.



Hooghly Engineering and Technology College
Department of Electrical Engineering

Date: 02.07.2022

Minutes of the meeting held on 02.07.2022 at 03:00 PM on the following agenda:

1. Confirmation of Subject Distribution for Odd semester, 2022
2. Final Year Project allocation for 2022-23
3. Preparation of Course plan and Course diary
4. Accreditation related work
5. Re-assigning duties as Laboratory In-charge
6. Miscellaneous

Members Present:

1. Dr. Avijit Maitry, H.O.D, EE Dept.
2. Mr. Anikendu Maitra, Coordinator, EE Dept.
3. Mr. Chandan Jana, Asst. Prof., EE Dept. *Chandana*
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. *Debolina*
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sanjitha Banerjee, Asst. Prof., EE Dept. *Banerjee*
7. Mr. Debasis Bose, STA, EE Dept. *S. Bose*
8. Mr. Sujal Kumar Bandyopadhyay, STA, EE Dept.
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept. *S. Dey*
11. Mrs. Priyanka Ghosh, TA, EE Dept. *P*

Mr. Anikendu Maitra, Coordinator, EE department, hosted the meeting, welcomed all the members and started the proceedings.

Agenda Item #1: Confirmation of Subject Distribution for Odd semester, 2022

Discussion: Discussions were held regarding subject distribution for odd semester, 2022. Following resolution is drawn at the end of the discussion:

Subject Code	Subject Name	Faculty & TA
PC-EE 301	Electric Circuit Theory	AKM, SNB
PC-EE 303	Electromagnetic field theory	CJ, SGL (PT)
PC-EE 391	Electric Circuit Theory Laboratory	(AKM+RM) / (SNB+SOD)
PC-EE 501	Electric machine-II	AM, SND
PC-EE 502	Power system-I	CJ, AKM
PC-EE 503	Control system	SS, SDE (PT)
PC-EE 504	Power electronics	DP, SS
PE-EE 501C	Renewable & Non-conventional energy	SND, SGL (PT)
PC-EE 591	Electric Machine-II laboratory	AM, SND, SOD, RM
PC-EE 592	Power system-I laboratory	CJ, AKM, SJB, DB
PC-EE 593	Control system laboratory	SS, SDE (PT), PG
PC-EE 594	Power Electronics laboratory	(DP+PG+SJB) / (SS+PG+SJB)
PC-EE 701	Electric Drive	DP, SND
PE-EE 701B	Electrical Energy conservation & Auditing	AKM, SDE (PT)
PE-EE 701C	Power generation economics	CJ, SNB
PC-EE 791	Electric Drive laboratory	(DP+RM+SOD) / (SND+RM+SOD)

Agenda Item #2: Final Year Project selection for 2022-23

Discussion: Procedure of final year project distribution is discussed. Students are asked to form a group of six members each of their choice. They will be provided with the probable project topics as given by the faculty members and the same will be shared with all the project groups. Final project topic will be allotted through a counseling process on the merit of each group.

Agenda Item #3: Preparation of Course plan and Course diary

Discussion: All the faculty members and technical assistants are asked to prepare lesson plan for their respective theory as well as practical papers in the format previously provided. A google form will be shared with all faculty members and technical assistants to prepare course diary. A common format for all departments is going to be followed for this purpose. All are asked to fill up this form on regular basis.

Agenda Item #4: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Dr. Avijit Maity has described the importance of NAAC and NBA accreditation of the college and asked all the members to work seriously on the issue.

Agenda Item #5: Re-assigning duties as Laboratory In-charge

Discussion: Discussions were held on changing the laboratory in charge of some of the laboratories. It is also discussed that for each laboratory a faculty member along with a technical assistant will be assigned the duty of laboratory in charge. Following resolution is taken in this regard:

Laboratory Name	Teacher in charge	TA in Charge
Basic Electrical Lab	Mrs. Samistha Banerjee	Mr. Ranjit Majhi
Electric Circuit Theory Lab	Mr. Anikendu Maitra	Mr. Ranjit Majhi
Electric Machine Lab. (I & II)	Mr. Sandip Das	Mrs. Soumi Dey
Electrical and Electronic Measurement Lab.	Pending	Pending
Power System Lab (I & II)	Mr. Chandan Jana	Mr. Saial Kumar Handypadhyay
Power Electronics Lab	Mrs. Debolina Pradhan	Mrs. Privanka Ghosh
Control System Lab	Mrs. Shilpi Saha	Mrs. Privanka Ghosh
Electric Drives Lab	Mrs. Debolina Pradhan	Mrs. Soumi Dey

Agenda Item #6: Miscellaneous

Discussion: Discussions were held on reforming different departmental committee. Following resolution is taken regarding this:

Name of the Committee	Name of the members
Departmental Library	Mrs. Shilpi Saha (Nodal person), Mr. Debasish Bose
Magazine and News Letter	Mrs. Samistha Banerjee (Nodal person), Mrs. Debolina Pradhan, Mr. Debasish Bose
Departmental events organizing committee	Mr. Chandan Jana (Nodal person), Mrs. Debolina Pradhan, Mr. Sandip Das, Mr. Anikendu Maitra

It is also resolved that department will look forward to organize at least one seminar (National level), workshop and industry visit for students during the current semester. Relevant committee will also organize intra college seminars in the current semester.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 PM






H.O.D.
Electrical Engineering
Bengal Engineering & Technology College

Hooghly Engineering and Technology College
Department of Electrical Engineering

Date: 06.04.2022

Minutes of the meeting held on 06.04.2022 at 03:00 PM on the following agenda:

1. Accreditation related work
2. Laboratory maintenance
3. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept.
2. Mr. Anikendu Maitra, Coordinator, EE Dept.
3. Mr. Chandan Jana, Asst. Prof., EE Dept.
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept.
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Samishta Banerjee, Asst. Prof., EE Dept.
7. Mr. Debasish Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept.
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept.
11. Mrs. Priyanka Ghosh, TA, EE Dept.

Mr. Anikendu Maitra, Coordinator, EE department, hosted the meeting, welcomed all the members and started the proceedings.

Agenda Item #1: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

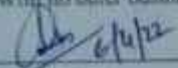
Agenda Item #2: Laboratory maintenance

Discussion: All items procured previously for the ongoing session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #3: Miscellaneous

Discussion: Department will look forward to organize at least one seminar (National level), workshop and industry visit for students during the current semester. Relevant committee will also organize intra college seminars in the current semester.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 P.M


Coordinator
EE Department




H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College

Hooghly Engineering and Technology College
Department of Electrical Engineering

Date: 10.03.2021

Minutes of the meeting held on 10.03.2021 at 03:00 PM on the following agenda:

1. Student attendance monitoring
2. Accreditation related work
3. Laboratory maintenance
4. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept.
2. Mr. Anikendu Maitra, Coordinator, EE Dept.
3. Mr. Chandan Jana, Asst. Prof., EE Dept.
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept.
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sannidha Banerjee, Asst. Prof., EE Dept.
7. Mr. Debasis Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept.
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept.
11. Mrs. Priyanka Ghosh, TA, EE Dept.

Mr. Anikendu Maitra, Coordinator, EE department, hosted the meeting, welcomed all the members and started the proceedings.

1. **Agenda Item #1: Student attendance monitoring**

Discussion: Discussions were held regarding student attendance in the ongoing semester. HOD, EE Dept. instructed all the faculty members and monitors to communicate with the students with poor attendance and instruct them to improve attendance.

Agenda Item #2: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

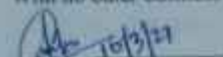
Agenda Item #3: Laboratory maintenance

Discussion: All items procured previously for the ongoing session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #4: Miscellaneous

Discussion: Department will look forward to organize at least one seminar (National level), workshop and industry visit for students during the current semester. Relevant committee will also organize intra college seminars in the current semester.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 P.M


Coordinator
EE Department




A.O.D.
Electrical Engineering
Hooghly Engineering & Technology College

Minutes of the meeting held on 14.09.2022 at 03:00 PM on the following agenda:

1. Student attendance monitoring
2. Accreditation related work
3. Laboratory maintenance
4. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept.
2. Mr. Anikendu Maitra, Coordinator, EE Dept. *A*
3. Mr. Chandan Jana, Asst. Prof., EE Dept. *Chandan Jana*
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. *Debolina Pradhan*
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sarmista Banerjee, Asst. Prof., EE Dept. *S. Banerjee*
7. Mr. Debasis Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept. *S. Bandyopadhyay*
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept. *S. Dey*
11. Mrs. Priyanka Ghosh, TA, EE Dept. *P. Ghosh*

Mr. Anikendu Maitra, Coordinator, EE department, hosted the meeting, welcomed all the members and started the proceedings.

1. **Agenda Item #1: Student attendance monitoring**

Discussion: Discussions were held regarding student attendance in the ongoing semester. HOD, EE Dept. instructed all the faculty members and mentors to communicate with the students with poor attendance and instruct them to improve attendance.

Agenda Item #1: Final Year Project selection for 2022-23

Discussion: Procedure of final year project distribution is discussed. Students are asked to form a group of six members each of their choice. They will be provided with the probable project topics as given by the faculty members and the same will be shared with all the project groups. Final project topic will be allotted through a counseling process on the merit of each group.

Agenda Item #2: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

Agenda Item #5: Laboratory maintenance

Discussion: All items procured previously for the ongoing session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #6: Miscellaneous

Discussion: Department will look forward to organize at least one seminar (National level), workshop and industry visit for students during the current semester. Relevant committee will also organize intra college seminars in the current semester.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 PM



Coordinator
EE Department



Hooghly Engineering and Technology College
Department of Electrical Engineering

Date: 16.09.2021

Minutes of the meeting held on 16.09.2021 at 04:30 PM on the following agenda:

1. Student attendance monitoring
2. Accreditation related work
3. Laboratory maintenance
4. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept.
2. Mr. Anikendu Maitra, Coordinator, EE Dept.
3. Mr. Chandan Jana, Asst. Prof., EE Dept.
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept.
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Samistha Banerjee, Asst. Prof., EE Dept.
7. Mr. Debasis Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept.
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept.
11. Mrs. Priyanka Ghosh, TA, EE Dept.

Mr. Anikendu Maitra, Coordinator, EE department, hosted the meeting, welcomed all the members and started the proceedings.

1. Agenda Item #1: Student attendance monitoring

Discussion: Discussions were held regarding student attendance in the ongoing semester. HOD, EE Dept. instructed all the faculty members and mentors to communicate with the students with poor attendance and instruct them to improve attendance.

Agenda Item #1: Final Year Project selection for 2021-22

Discussion: Procedure of final year project distribution is discussed. Students are asked to form a group of six members each of their choice. They will be provided with the probable project topics as given by the faculty members and the same will be shared with all the project groups. Final project topic will be allotted through a counseling process on the merit of each group.

Agenda Item #2: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

Agenda Item #5: Laboratory maintenance

Discussion: All items procured previously for the ongoing session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #6: Miscellaneous

Discussion: Department will look forward to organize at least one seminar (National level), workshop and industry visit for students during the current semester. Relevant committee will also organize intra college seminars in the current semester.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 5:00 P.M


16/9/21
Coordinator
EE Department


H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College



Hooghly Engineering and Technology College
Department of Electrical Engineering

Date: 24.02.2023

Minutes of the meeting held on 24.02.2023 at 03:00 PM on the following agenda:

1. Accreditation related work
2. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept. *Avijit*
2. Mr. Anikendu Maitra, Coordinator, EE Dept. *A*
3. Mr. Chandan Jana, Asst. Prof., EE Dept. *Chandan*
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. *Debolina*
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sannistha Banerjee, Asst. Prof., EE Dept. *S. Banerjee*
7. Ms. Swati De *Swati De*
8. Mr. Debasis Bose, STA, EE Dept. *S. Bose*
9. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept.
10. Mr. Ranjit Majhi, STA, EE Dept.
11. Mrs. Soumi Dey, TA, EE Dept. *S. Dey*
12. Mrs. Priyanka Ghosh, TA, EE Dept. *P. Ghosh*

Mr. Anikendu Maitra, Coordinator, EE department, hosted the meeting, welcomed all the members and started the proceedings.

Agenda Item #1: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

Agenda Item #2: Miscellaneous

Discussion: Department will look forward to organize at least one seminar (National level), workshop and industry visit for students during the current semester. Relevant committee will also organize intra college seminars in the current semester.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 P.M

[Signature]
24/2/23
Coordinator
EE Department



[Signature]
H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College



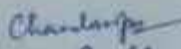
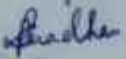

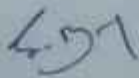


Hooghly Engineering and Technology College
Department of Electrical Engineering

Date: 10.02.2019

Minutes of the meeting held on 10.02.2019 at 03:00 PM on the following agenda:

1. Student attendance monitoring
2. Accreditation related work
3. Laboratory maintenance
4. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept. 
2. Mr. Anikendu Maitra 
3. Mr. Chandan Jana, Asst. Prof., EE Dept. 
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. 
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sannistha Banerjee, Asst. Prof., EE Dept. 
7. Mr. Debasis Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept. 
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept. 
11. Mrs. Priyanka Ghosh, TA, EE Dept. 

Dr. Avijit Maity, H.O.D, EE Dept., hosted the meeting, welcomed all the members and started the proceedings.

1. Agenda Item #1: Student attendance monitoring

Discussion: Discussions were held regarding student attendance in the on-going semester. HOD, EE Dept. instructed all the faculty members and mentors to communicate with the students with poor attendance and instruct them to improve attendance.

Agenda Item #2: Accreditation related work



Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

Agenda Item #3: Laboratory maintenance


Discussion: All items procured previously for the on-going session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #4: Miscellaneous

Discussion: Members discussed whether a national conference can be conducted or not in this college within 1 year.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 P.M

S. Deb


H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College


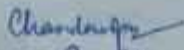
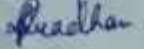
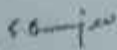
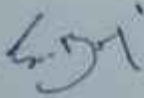


Hooghly Engineering and Technology College
Department of Electrical Engineering

Date: 22.09.2019

Minutes of the meeting held on 22.09.2019 at 03:00 PM on the following agenda:

1. Student attendance monitoring
2. Accreditation related work
3. Laboratory maintenance
4. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept.
2. Mr. Anikendu Maitra 
3. Mr. Chandan Jana, Asst. Prof., EE Dept. 
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. 
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sannistha Banerjee, Asst. Prof., EE Dept. 
7. Mr. Debasis Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept. 
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept. 
11. Mrs. Priyanka Ghosh, TA, EE Dept. 

Dr. Avijit Maity, H.O.D, EE Dept., hosted the meeting, welcomed all the members and started the proceedings.

1. Agenda Item #1: Student attendance monitoring

Discussion: Discussions were held regarding student attendance in the on-going semester. HOD, EE Dept. instructed all the faculty members and mentors to communicate with the students with poor attendance and instruct them to improve attendance.

Agenda Item #2: Accreditation related work



Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

Agenda Item #3: Laboratory maintenance

Discussion: All items procured previously for the on-going session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #4: Miscellaneous

Discussion: Pre-cautionary measures related to COVID-19 were discussed in this meeting.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 P.M




H.O.D.
Electrical Engineering
Vignana Engineering & Technology College

Hooghly Engineering and Technology College



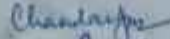


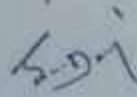


Department of Electrical Engineering

Date: 22.01.2020

Minutes of the meeting held on 22.01.2020 at 03:00 PM on the following agenda:

1. Student attendance monitoring
2. Accreditation related work
3. Laboratory maintenance
4. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept. 
2. Mr. Anikendu Maitra 
3. Mr. Chandan Jana, Asst. Prof., EE Dept. 
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. 
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sumiatha Banerjee, Asst. Prof., EE Dept. 
7. Mr. Debasis Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept. 
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept. 
11. Mrs. Priyanka Ghosh, TA, EE Dept. 

Dr. Avijit Maity, H.O.D, EE Dept., hosted the meeting, welcomed all the members and started the proceedings.

1. Agenda Item #1: Student attendance monitoring

Discussion: Discussions were held regarding student attendance in the on-going semester. HOD, EE Dept. instructed all the faculty members and mentors to communicate with the students with poor attendance and instruct them to improve attendance.

Agenda Item #2: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

Agenda Item #3: Laboratory maintenance

Discussion: All items procured previously for the on-going session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #4: Miscellaneous

Discussion: COVID-19 related matters were discussed in this meeting.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 P.M




H.O.D.
Electrical Engineering
Hogshy Engineering & Technology College

Hooghly Engineering and Technology College





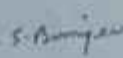
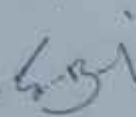
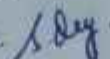

Department of Electrical Engineering

Date: 20.08.2020

Minutes of the meeting held on 20.08.2020 at 03:00 PM on the following agenda:

1. On-Line classes monitoring
2. Accreditation related work
3. Laboratory maintenance
4. Miscellaneous

Members Present:

1. Dr. Avijit Maity, H.O.D, EE Dept. 
2. Mr. Anikendu Maitra 
3. Mr. Chandan Jana, Asst. Prof., EE Dept. 
4. Mrs. Debolina Pradhan, Asst. Prof., EE Dept. 
5. Mr. Sandip Das, Asst. Prof., EE Dept.
6. Mrs. Sannistha Banerjee, Asst. Prof., EE Dept. 
7. Mr. Debasis Bose, STA, EE Dept.
8. Mr. Sajal Kumar Bandyopadhyay, STA, EE Dept. 
9. Mr. Ranjit Majhi, STA, EE Dept.
10. Mrs. Soumi Dey, TA, EE Dept. 
11. Mrs. Priyanka Ghosh, TA, EE Dept. 

Dr. Avijit Maity, H.O.D, EE Dept., hosted the meeting, welcomed all the members and started the proceedings.

1. Agenda Item #1: On-Line classes monitoring

Discussion: Discussions were held regarding on-line classes monitoring in the on-going semester. HOD, EE Dept. instructed all the faculty members and mentors to monitor it properly.

Agenda Item #2: Accreditation related work

Discussion: All the members are asked to prepare documents related to their class and other works as per instruction and direction given by accreditation committee of the college. Status of all the previous work is reviewed.

Agenda Item #3: Laboratory maintenance

Discussion: All items procured previously for the on-going session is listed and requirement for maintenance work for the all labs are reviewed. Concerned laboratory in charges are instructed follow appropriate procedure to procure items required for smooth running of the laboratories.

Agenda Item #4: Miscellaneous

Discussion: COVID-19 related matters were discussed in this meeting.

With no other business in the Agenda, the meeting ended on giving thanks to all the members at 4:00 P.M




A.D.D.
Electrical Engineering
Kecoby Engineering & Technology College

1.1.1

Academic Calendar



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): July 2022 – December 2023			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of Academic Programme	October 14, 2022, Orientation Programme	July 4, 2022
2	Induction Programme for newly admitted students	October 15 to November 3, 2022	N.A.
3	Admission activities (for ensuing new students) to be completed by	November 30, 2022	N.A.
4	Registration activities (for ensuing newly admitted students for the session 2022-23) will be completed by	As per admission dates. Would be notified separately	N.A.
5	Enrolment of students (for 3 rd , 5 th & 7 th semester)	As per university directive	July 7, 2022 to July 15, 2022
6	Enrolment of students (for 1 st & 3 rd semester-Lateral)	Tentatively in the month of December, 2022	N.A.
7	Continuous Assessment 1(CA1) (In the form of Power Point Presentation) (for 3 rd , 5 th & 7 th semester)	As per university directive	August 1, 2022 to August 4, 2022
8	Continuous Assessment 2(CA2) (In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	As per university directive	September 1, 2022 to September 4, 2022
9	A Guest Lecture organised by Mechanical Dept.	3 rd week of September, 2022	
10	Drawing competition on the occasion of World AIDS Day by the NSS unit	1 st week of December, 2022	
11	A sensitization workshop on "Implementation of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013" by the Internal Complaints Committee(ICC)	1 st week of December, 2022	
12	Continuous Assessment 3(CA3)(In the form of Class Test)	As per university directive	October 17, 2022 to October 20, 2022
13	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	As per university directive	November 9, 2022 to November 12, 2022
14	Pre-Examination activities (Form fill-up etc.)	November 16, 2022 to November 24, 2022	November 16, 2022 to November 24, 2022
15	Practical, Sessional and Viva-Voce examinations	November 25, 2022 to November 30, 2022	November 25, 2022 to November 30, 2022
16	Marks submission for Practical, Sessional and Viva-Voce exams	December 1, 2022 to December 5, 2022	December 1, 2022 to December 5, 2022
17	Theory Examinations	December 2, 2022 to December 24, 2022	December 2, 2022 to December 24, 2022
18	Inter Semester Break	December 25, 2022 to January 1, 2023	December 25, 2022 to January 1, 2023
19	Publication of Result	Results will be announced in the Univ. website	

During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.



Sd/L: L/H 02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.

Announcement regarding Special Trainings will be available in the College website/web portal in due course

Announcement regarding other activities of University/ College will be available in the University website/College website in due course

Sd/- H/ 02.07.22





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Odd Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
July 2022					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
Teaching Days: 20							
August 2022	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
Teaching Days: 20							
September 2022				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
Teaching Days: 21							
October 2022	31					1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
Teaching Days: 12							
November 2022		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				
Teaching Days: 19							
December 2022				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	
Teaching Days: 17							



Sd/- L/L, 09.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE


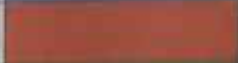

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	



S.D. 44 02.07.22

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hoochly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2023 – June 2023		
Events		For 2 nd , 4 th , 6 th & 8 th Semester
1	Commencement of Academic Programme	January 2, 2023
2	Enrolment of students	January 4, 2023 to January 12, 2023
3	Annual Cultural Fest, UTKARSHA 2023	2 nd week of January, 2023
4	Annual Sports Meet	January 14, 2023
5	Continuous Assessment 1(CA1)(In the form of Power Point Presentation)	February 1, 2023 to February 4, 2023
6	A seminar on "Embedded Systems and its Applications" by Electronics & Communications Engineering Dept.	4 th week of February, 2023
7	A Poster Design Competition on the occasion of International Women's Day by the Women's Cell	March 8, 2023
8	Continuous Assessment 2(CA2)(In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	March 1, 2023 to March 4, 2023
9	Technical Fest TechHetc	3 rd week of March, 2023
10	A 3-Day workshop on "Advanced Surveying Using DGPS and total Station" by Civil Engineering Dept.	Last week of March, 2023
11	Continuous Assessment 3(CA3)(In the form of Class Test)	April 1, 2023 to April 4, 2023
12	A National Conference on "Emerging Technologies in Computer Science and Electronics and Communications" jointly by Computer Science Engineering & Electronics and Communication Depts.	1 st week of April 2023
13	A Blood Donation Camp by NSS unit in collaboration with the Students Health Home, North-Hooghly Regional Centre	3 rd week of April, 2023
14	Examination of the Spoken Tutorial Program	Last week of April, 2023
15	A National Conference on "Recent Trends in Electrical and Mechanical Engineering" jointly by Electrical Engineering & Mechanical Engineering Depts.	Last week of April, 2023
16	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	May 1, 2023 to May 4, 2023
17	Pre-Examination activities (Form fill-up etc.)	May 8, 2023 to May 16, 2023
18	Practical, Sessional and Viva-Voce examinations	May 22, 2023 to May 27, 2023
19	Marks submission for Practical, Sessional and Viva-Voce exams	May 28, 2023 to May 30, 2023
20	Theory Examinations	June 1, 2023 to June 20, 2023
21	Inter Semester Break	Would be notified later
22	Publication of Result	Results will be announced in the Univ. website
23	Last date of reporting on Mentoring (Phase I)	March 31, 2023



Sd/- 44 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

24	Last date of reporting on Mentoring (Phase II)	May 31, 2023
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in July, 2023. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		



S.H.L. 44, 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Even Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
January 2023	30	31					1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
Teaching Days: 18							
February 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28					
Teaching Days: 17							
March 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
Teaching Days: 21							
M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
April 2023						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
Teaching Days: 15							
May 2023	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
Teaching Days: 20							
June 2023				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
Teaching Days: 21							



Sd/- 44, 02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE


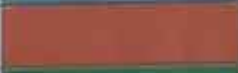

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	

S.P.L. L.H. 02.07.22

Dr. Smitadhi Ganguly

Principal in-Charge



Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): August 2021 – January 2022			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of University Registration process online for newly admitted students	August 25, 2021	N.A.
2	Teachers' Day Celebration (Virtual mode)	September 5, 2021	
3	TECHete 2k21 (Annual Technical Festival) (Virtual mode)	2 nd week of September, 2021	
4	Admission activities (for ensuing new students) to be completed by	September 15, 2021	N.A.
5	Commencement of Academic Programme	September 15, 2021	August 31, 2021
6	Orientation program & Fresher's welcome	September 22, 2021	N.A.
7	53rd NSS Day Celebration through Webinar	September 24, 2021	
8	Enrolment of students (for odd semesters)	October 1, 2021 to October 7, 2021	September 1, 2021 to September 10, 2021
9	Gandhiji's Birth Day Celebration(Virtual mode)	October 2, 2021	
10	Last date of continuous evaluation (Phase I)	N.A.	October 4, 2021
11	Induction Programme for newly admitted students	October 23, 2021	N.A.
12	Registration activities (for newly admitted students for the session 2021-22) will be completed by	October 25, 2021	N.A.
13	National Level Entrepreneurship Awareness Programme	Last week of October, 2021	
14	Swachh Bharat Activity in collaboration with MAKAUT NSS Unit (NSS)	Last week of October, 2021	
15	Last date of continuous evaluation (Phase II)	November 4, 2021	
16	SWACHHTA PAKHWADA – Azadi Ka Amrit Mahotsav celebration	December 1, 2021 to December 13, 2021	
17	Last date of continuous evaluation (Phase III)	December 4, 2021	
18	Last date of continuous evaluation (Phase IV)	January 5, 2022	
19	Pre-Examination activities (Form fill-up etc.)	January 6, 2022 to January 14, 2022	
20	Practical Examinations & Viva-Voce	January 15, 2022 to January 25, 2022	
21	Theory Examinations	January 17, 2022 to January 29, 2022	
22	Online Essay Competition (NSS)	Last week of January, 2022	
23	National Girl Child Day Celebration (NSS)	January 24, 2022	
24	73rd Republic Day Celebration (NSS)	January 26, 2022	
25	Alumni Meet	January 30, 2022	
26	Inter Semester Break	To be announced later	
27	Publication of Result	Results will be announced in the University website	
28	Last date of reporting on Mentoring (Phase I)	November 30, 2021	
29	Last date of reporting on Mentoring (Phase II)	January 31, 2022	
During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in March, 2021. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Signature and date: 24.08.21



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. H. L. Ganguly 24.08.21

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpatl, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): February 2022 – June 2022		
Events		For Continuing Batches
1	Commencement of Academic Programme	February 1, 2022
2	Enrolment of students (for each semester)	February 1, 2022 to February 10, 2022
3	International Matribhasha Diwas Celebration (NSS)	February 21, 2022
4	Last date of continuous evaluation (Phase I)	March 4, 2022
5	International Women's day celebration	March 8, 2022
6	Webinar (Organized by NSS) in Google meet	2 nd week of March, 2022
7	Annual Cultural Festival, UTKARSHA 2022	Last week of March, 2022
8	Last date of continuous evaluation (Phase II)	April 4, 2022
9	Blood Donation Camp (NSS)	3 rd week of April, 2022
10	Last date of continuous evaluation (Phase III)	May 4, 2022
11	Last date of continuous evaluation (Phase IV)	June 4, 2022
12	Pre-Examination activities (Form fill-up etc.)	June 5, 2022 to June 18, 2022
13	Practical Examinations & Viva-Voce	June 20, 2022 to June 30, 2022
14	Theory Examinations	June 20, 2022 to June 30, 2022
15	The International Yoga Day Celebration (NSS)	June 21, 2022
16	Inter Semester Break (Summer)	Will be published later
17	Publication of Result (Final Semester)	Results will be announced in the University website in July, 2022
18	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2022
19	Last date of reporting on Mentoring (Phase I)	30th April, 2022
20	Last date of reporting on Mentoring (Phase II)	30th June, 2022
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. S. Ganguly 21.08.23
Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hoochly Engineering & Technology College
Vivekananda Road, Pipulpatl, Hooghly.



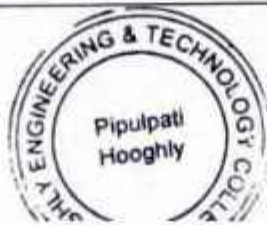
HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): November 2020 – March 2021			
Events		For Ensuing New Batch	For Continuing Batch
1	Admission activities (<i>for ensuing new students</i>) to be completed by	December, 2020	N.A.
2	Commencement of University Registration process online for newly admitted students	2 nd week of January, 2021	N.A.
3	Commencement of Academic Programme	3 rd week of January, 2021	1 st week of November, 2020
4	Induction Programme for newly admitted students	2 nd week of January, 2021 (Virtual Mode)	N.A.
5	Registration activities (<i>for ensuing newly admitted students for the session 2020-21</i>) will be completed by	3 rd week of January, 2021	N.A.
6	Republic Day Celebration	January 26, 2021 (Virtual Mode)	
7	Enrolment of students	Last week of January, 2021	Last week of November, 2020 (Except Lateral entries)
8	Alumni Meet	January 31, 2021 (Virtual Mode)	
9	Last date of Continuous Assessment (CA) I	Last week of January, 2021	
10	Last date of Continuous Assessment (CA) II	1 st week of February, 2021	
11	Practical Examinations & Viva-Voce (PCA I)	Last week of February, 2021	
12	Last date of Continuous Assessment (CA) III	Last week of February, 2021	
13	Last date of Continuous Assessment (CA) IV	2 nd week of March, 2021	
14	Practical Examinations & Viva-Voce (PCA II)	3 rd week of March, 2021	
15	Theory Examinations	Last week of March, 2021 (Online Mode)	
16	Inter Semester Break	Notice will be published later	
17	Publication of Result	Results will be announced in the Univ. website	
18	Last date of reporting on Mentoring	2 nd week of March, 2021	
During Inter-Semester-Break, Practical Training (<i>where applicable</i>) may be conducted.			
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Avijit Maity
03/11/2020



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020
Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): April 2021 – July 2021		
Events		For Continuing Batches
1	Commencement of Academic Programme	1 st week of April, 2021
2	Enrolment of students (for each semester)	April 20, 2021 to April 24, 2021
3	Last date of Continuous Assessment (CA) I	April 28, 2021 to May 3, 2021
4	Swachh Bharat Activity (NSS)	2 nd week of May, 2021 (Virtual Mode)
5	Last date of Continuous Assessment (CA) II	May 27, 2021 to May 31, 2021
6	Practical Examinations & Viva-Voce (PCA I)	May 27, 2021 to May 31, 2021
7	Last date of Continuous Assessment (CA) III	June 25, 2021 to June 30, 2021
8	Last date of Continuous Assessment (CA) IV	July 21, 2021 to July 24, 2021
9	Practical Examinations & Viva-Voce (PCA II)	July 21, 2021 to July 24, 2021
10	Theory Examinations	July, 2021
11	Semester Break	Notice will be published later
12	Publication of Result (Final Semester)	Results will be announced in the University website
13	Publication of Result (Other than Final Semester)	Results will be announced in the University website
14	Last date of reporting on Mentoring	Last week of June, 2021
During Inter-Semester-Break, Practical Training (<i>where applicable</i>) may be conducted.		
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020

Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2019 – December 2019			
Events		For Ensuing New Batch	For Continuing Batches
1	Commencement of University Registration process online for newly admitted students	July 22, 2019	N.A.
2	Admission activities (for ensuing new students) to be completed by	July 31, 2019	N.A.
3	Commencement of Academic Programme	August 1, 2019, Orientation Programme	July 15, 2019
4	Induction Programme for newly admitted students	August 1 to 21, 2019	N.A.
5	Registration activities (for newly admitted students for the session 2019-20) will be completed by	August 25, 2019	N.A.
6	Enrolment of students (for every semester)	August 14, 2019 to August 30, 2019	
7	Independence Day Celebration	August 15, 2019	
8	Last date of continuous evaluation (Phase I)	August 31, 2019	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2019	
10	Blood Donation Camp (NSS)	3 rd week of September, 2019	
11	Last date of continuous evaluation (Phase II)	September 30, 2019	
12	Last date of reporting on Mentoring (Phase I)	September 30, 2019	
13	Celebration of Gandhi Birthday (Workshop on Solar Lantern)	October 2, 2019	
14	One day Workshop/Seminar (Organized by CSE Dept)	4 th week of October, 2019	
15	Last date of continuous evaluation (Phase III)	October 31, 2019	
16	Entrepreneurship Awareness Programme	1 st week of November, 2019	
17	Last date of continuous evaluation (Phase IV)	November 30, 2019	
18	Practical Examinations & Viva-Voce	November 22 to 30, 2019	
19	Programme on AIDS Awareness (NSS)	December 1, 2019	
20	Theory Examinations	December 4 to 21, 2019	
21	Inter-Semester Break	December 22, 2019 to January 12, 2020	
22	Publication of Result	Results will be announced in the Univ. website in February 2020	
23	Last date of reporting on Mentoring (Phase II)	December 30, 2019	
During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya
Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Even Semester (2 nd , 4 th , 6 th & 8 th Semesters): January 2020 – June 2020		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 13, 2020
2	Annual Sports Meet	3 rd week of January, 2020
3	One day Workshop/Seminar (Organized by ECE Dept)	3 rd week of January, 2020
4	Enrolment of students (for every semester)	January 20, 2020 to January 31, 2020
5	Republic Day Celebration/ Alumni Meet	26 January, 2020 (Last Sunday of January)
6	Last date of continuous evaluation (Phase I)	January 31, 2020
7	Annual Cultural Festival	1 st week of February, 2020
8	Cricket Tournament	2 nd week of February, 2020
9	Badminton Tournament (For Girls)	3 rd week of February, 2020
10	Last date of continuous evaluation (Phase II)	February 28, 2020
11	TECHetc 2k20 (Annual Technical festival)	2 nd week of March, 2020
12	Swaccha Bharat Activity (NSS)	3 rd week of March, 2020
13	Football Tournament	3 rd week of March, 2020
14	Last date of continuous evaluation (Phase III)	March 31, 2020
15	Last date of reporting on Mentoring (Phase I)	March 31, 2020
16	One day Workshop/Seminar (Organized by EE Dept)	2 nd week of April, 2020
17	Last date of continuous evaluation (Phase IV)	April 30, 2020
18	Workshop/Seminar (In Collaboration With HETCAA)	1 st week of May, 2020
19	Practical Examinations & Viva-Voce	May 11 to May 16, 2020
20	Theory Examinations	May 22 to June 9, 2020
21	Inter-Semester Break (Summer)	June 10 to July 14, 2020
22	Publication of Result (Final Semester)	Results will be announced in the University website in July 2020
23	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2020
24	Last date of reporting on Mentoring (Phase II)	June 30, 2020
During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya

Principal

Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

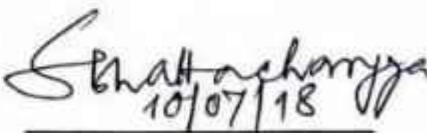
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2018 – December 2018			
Events		For Ensuring New Batch	For Continuing Batch
1	University-Registration process for ensuing newly admitted students process will be started on	June 11, 2018	N.A.
2	Admission activities (<i>for ensuing new students</i>) will be completed by	July 31, 2018	N.A.
3	Commencement of Academic Programme	August 1, 2018 Orientation Programme	July 13, 2018
4	Induction Programme for newly admitted students	August 1 to 21, 2018	N.A.
5	Registration activities (<i>for ensuing newly admitted students for the session 2018-19</i>) will be completed by	September 10, 2018	N.A.
7	Independence Day Celebration	August 15, 2018	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2018	
10	First Test Slot	September 14 to 20, 2018	
11	Annual Football Tournament	2 nd & 3 rd week of October, 2018	
12	Entrepreneurship Awareness Programme	1 st week of November, 2018	
13	Second Test Slot	November 14 to 20, 2018	
14	Practical Examinations & Viva-Voce	November 22 to 30, 2018	
15	Theory Examinations	December 4 to 21, 2018	
16	Inter Semester Break	December 24, 2018 to January 12, 2019	
17	Publication of Result	Results will be announced in the University website in February 2019.	
18	Last date of reporting on Mentoring (Phase I)	30 th September 2019	
19	Last date of reporting on Mentoring (Phase II)	30 th December 2019	
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.			
Separate Supplementary Examination for final year student will be held on September, 2018. Details will be available in the University website in due course.			
Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.			

* Dates of the events are subject to change in accordance with the situation.


10/07/18

Dr. S. Bhattacharyya

Principal, HETC



Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2019 – June 2019		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 14, 2019
2	Enrolment of students (for each semester)	January 20, 2020 to January 31, 2020
3	Annual Cultural Festival	4 th week of January, 2019
4	Annual Sports Meet	4 th week of January, 2019
5	Republic Day Celebration	January 26, 2019
6	Annual Alumni Meet	Last Sunday of January, 2019 (January 27, 2019)
7	Cricket Tournament	2 nd , 3 rd & 4 th Week of February, 2019
8	Badminton Tournament (For Girls)	1 st week of February, 2019
9	Panel Discussion by Magazine Committee	3 rd week of February, 2019
10	First Test Slot	2 nd week of March, 2019
11	TECHetc 2k19 (Annual Technical festival)	3 rd week of March, 2019
12	One Day Seminar by Student Chapter of IE(I)	4 th week of March, 2019
13	Seminar by INTERNSALA	1 st week of April, 2019
14	Second Test Slot	4 th week of April, 2019
15	First Improvement Test Slot	1 st week of May, 2019
16	Second Improvement Test Slot	2 nd week of May, 2019
17	Practical Examinations & Viva-Voce	May 15 to May 23, 2019
18	Theory Examinations	May 28 to June 17, 2019
19	Inter Semester Break (Summer)	June 18 to July 14, 2019
20	Publication of Result (Final Semester)	Results will be announced in the University website in July 2019
21	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2019

During Inter-Semester-Break (Summer), Practical Training (*where applicable*) may be conducted.

Separate Supplementary Examination for final year student will be held on September, 2018.

Details will be available in the University website in due course.

Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharya
18/07/18

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal

Hooghly Engineering & Technology College

1.1.1

Routine

HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE
 DEPARTMENT OF CECSE/CE/ET/ME Time-Table for Day/2nd Semester 2023
 DEFECTIVE FROM 21st February, 2023

No.	Sec.	08:00 AM - 09:30 AM	09:30 AM - 11:00 AM	11:00 AM - 12:30 PM	12:30 PM - 01:00 PM	01:00 PM - 02:30 PM	02:30 PM - 04:00 PM	04:00 PM - 05:30 PM	05:30 PM - 07:00 PM	07:00 PM - 08:30 PM	
Theory	CE	Mathematics (70) (Room No. A201)	Engineering Graphics & Design Lab (CE+ME) (SAG/DNB/TM)				Chemistry (AG) (Room No. A104)				
	CSE A	Mathematics (67) (Room No. A202)	Chemistry Lab (CSE A Gr II) (SAG/DNB/TM) PPS Lab (CSE A Gr II) (SAG/DNB/TM)				English (SFC 1) (Room No. A202)				
	CSE B	English (SFC 1) (Room No. A202)	PPS Lab (CSE B) (SAG/DNB/TM)				Chemistry (AG) (Room No. A203)				
	ECE	Physics (70) (Room No. A204)	Language Lab (ECE Gr II) (SAG/DNB/TM) | Library Workshop (ECE Gr II) (SAG/DNB/TM)				PPS (SAG) (Room No. A104)	Physics Lab (ECE Gr II) (SAG/DNB/TM)			
	EE	Mathematics (67) (Room No. A201)	Physics Lab (EE) (SAG/DNB/TM)				Physics (EPO) (Room No. A201)				
	ME	Mathematics (70) (Room No. A201)	Engineering Graphics & Design Lab (CE+ME) (SAG/DNB/TM)				Chemistry (AG) (Room No. A203)				
	Workshop	CE	PPS (SAG) (Room No. A201)	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	English (SFC 1) (Room No. A202)					
CSE A		Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	Workshop (CE) (Room No. A201)	PPS (SAG) (Room No. A201)					Chemistry Lab (CSE A Gr II) (SAG/DNB/TM) PPS Lab (CSE A Gr II) (SAG/DNB/TM)	
CSE B		English (SFC 1) (Room No. A202)	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	PPS (SAG) (Room No. A201)					Language Lab (ECE Gr II) (SAG/DNB/TM) Workshop Lab (ECE Gr II) (SAG/DNB/TM)	
ECE		Mathematics (67) (Room No. A201)	English (SFC 1) (Room No. A202)	Physics (70) (Room No. A204)	PPS (SAG) (Room No. A201)					Physics Lab (EE) (SAG/DNB/TM)	
EE		PPS (SAG) (Room No. A201)	Physics (70) (Room No. A204)	Mathematics (67) (Room No. A201)	English (SFC 1) (Room No. A202)						
ME		PPS (SAG) (Room No. A201)	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	English (SFC 1) (Room No. A202)						
Theory		CE	Chemistry (AG) (Room No. A201)	PPS (SAG) (Room No. A201)	PPS (SAG) (Room No. A201)	Library (Room No. A201)					PPS Lab (CE+ME+EE) (SAG/DNB/TM) Language Lab (ECE Gr II) (SAG/DNB/TM) Engineering Graphics & Design (CE A Gr II) (SAG/DNB/TM)
	CSE A	English (SFC 1) (Room No. A202)	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	PPS (SAG) (Room No. A201)					Chemistry Lab (CSE B) (SAG/DNB/TM)	
	CSE B	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	PPS (SAG) (Room No. A201)	Library (Room No. A201)					Physics Lab (ECE Gr II) (SAG/DNB/TM) PPS Lab (ECE Gr II) (SAG/DNB/TM)	
	ECE	Mathematics (67) (Room No. A201)	Physics (70) (Room No. A204)	English (SFC 1) (Room No. A202)	Mathematics (67) (Room No. A201)					PPS Lab (CE+ME+EE) (SAG/DNB/TM)	
	EE	Physics (70) (Room No. A204)	PPS (SAG) (Room No. A201)	PPS (SAG) (Room No. A201)	Library (Room No. A201)						
	ME	Chemistry (AG) (Room No. A201)	PPS (SAG) (Room No. A201)	PPS (SAG) (Room No. A201)	Library (Room No. A201)						
	Practical	CE	Mathematics (70) (Room No. A201)	Chemistry Lab (CE+ME) (SAG/DNB/TM)				Language Lab (SFC)		Slot for Yoga & Karate	
CSE A		Chemistry (AG) (Room No. A201)	Language Lab (CSE A Gr II) (SAG/DNB/TM) | Library Engineering Graphics & Design (CE A Gr II) (SAG/DNB/TM)				PPS (SAG) (Room No. A201)				
CSE B		Mathematics (67) (Room No. A201)	Essential Class (Mathematics) (PPS) (Room No. A201)				Library (Room No. A201)				
ECE			Physics Lab (ECE Gr II) (SAG/DNB/TM) PPS Lab (ECE Gr II) (SAG/DNB/TM)				Physics (EPO) (Room No. A201)				
EE		Mathematics (67) (Room No. A201)	Workshop Lab (EE) (SAG/DNB/TM)								
ME		Mathematics (67) (Room No. A201)	Chemistry Lab (CE+ME) (SAG/DNB/TM)								
Theory		CE	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	English (SFC 1) (Room No. A202)	Library (Room No. A201)					
	CSE A	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	Chemistry (AG) (Room No. A201)	Library (Room No. A201)						
	CSE B	Chemistry (AG) (Room No. A201)	Engineering Graphics & Design Lab (SAG/DNB/TM)								
	ECE	Mathematics (67) (Room No. A201)	Physics (70) (Room No. A204)	Essential Class (Room No. A204)	PPS (SAG) (Room No. A201)						
	EE	Physics (70) (Room No. A204)	Mathematics (67) (Room No. A201)	English (SFC 1) (Room No. A202)	Library (Room No. A201)						
	ME	Chemistry (AG) (Room No. A201)	Mathematics (67) (Room No. A201)	English (SFC 1) (Room No. A202)	Library (Room No. A201)						
										Slot for Yoga & Karate	

R E C E S S

Theory Class: CSE A (Roll 1-60) CSE B (Roll 61-93)
 Lab: CSE A-Gr II (Roll 1-30) CSE A Gr. II (Roll 31-60) CSE B (61-93) Lab: ECE Gr. II (Roll 1-30) ECE Gr. II (Roll 31-63)

Dr. Smita Ganguly
 (Principal-in-Charge)

Principal in Charge
 Hooghly Engineering & Technology College
 • Rudrananda Road, Pipitpall, Hooghly

ROUTINE FOR C&T Semester 2022

DEPARTMENT: C&T/CE/EE/ECE		20 Year				2022-23		
Sl. No.	Sl. No.	10 AM - 11 AM	11 AM - 12 PM	12 PM - 01 PM	01 PM - 02 PM	02 PM - 03 PM	03 PM - 04 PM	04 PM - 05 PM
Faculty	CE	Physics(CS-1A1) (P6A) [Room No. W3201]	Math(CS-1A1) (P7) [Room No. W3201]	Basic EE (CE) [Room No. A201]	Tutorial (CE-1A1) (G5) [Room No. A204]			
	CSE A	Library	Basic EE (CE) [Room No. A201]	Physics(CS-1A) (P6A) [Room No. A301]	3 Lab (CSE A1A1) [Room No. A201]			
	CSE B	Library	Physics(CS-1A) (P6A) [Room No. A201]	Basic EE (CE) [Room No. A201]	Math (CSE B) (P6) [Room No. A201]			Workshop Practice (CSE-A-G-0) (SUBSAR) (P6A) Physics Lab (CSE-A-G-0) (P6) (P6) (P6)
	ECE	Chemistry (CE-1A) (P6A) [Room No. A204]	Math (CE-1A) (P6) [Room No. A204]	Basic EE Lab (CE-1A) (P6) (P6) (P6)				Engineering Graphics & Design (CE-1A) (P6) (P6) (P6) Chemistry Lab (CE-1A) (P6) (P6) (P6)
	EE	Math (CE-1A) (P6) [Room No. A201]	Chemistry (CE-1A) (P6) [Room No. A201]	Basic EE (CE) [Room No. A201]	Tutorial (CE-1A) (P6) [Room No. A201]			
Wednesday	ME	Physics (CE-1A) (P6) [Room No. W3201]	Math (CE-1A) (P6) [Room No. W3201]	Basic EE (CE) [Room No. A201]	Tutorial (CE-1A) (P6) [Room No. A201]			
	CE	Math (CE-1A) (P6) [Room No. A201]		Physics Lab (CE-1A) (P6) (P6) (P6)				Physics (CE-1A) (P6) [Room No. A201]
	CSE-A	Physics (CE-1A) (P6) [Room No. A201]	Math (CE-1A) (P6) [Room No. A201]	Library	Library			Math (CSE A) (P6) [Room No. A201]
	CSE-B	Library	Library	Library	Physics (CSE-B) (P6) [Room No. A201]			Math (CSE B) (P6) [Room No. A201]
	ECE	Library	Basic EE (CE) [Room No. A204]	Library	Library			Basic EE Lab (CE-1A) (P6) (P6) (P6)
Thursday	EE	Chemistry (CE-1A) (P6) [Room No. A201]	Chemistry (CE-1A) (P6) [Room No. A201]	Library	Math (EE) (P6) [Room No. A201]			Engineering Graphics & Design (CE-1A) (P6) (P6) (P6) Chemistry Lab (CE-1A) (P6) (P6) (P6)
	ME	Math (CE-1A) (P6) [Room No. A201]		Physics Lab (CE-1A) (P6) (P6) (P6)				Physics (CE-1A) (P6) [Room No. A201]
	CE	Library	Library	Physics (CE-1A) (P6) [Room No. A201]	Basic EE (A204) [Room No. A201]			Physics Lab (CE-1A) (P6) (P6) (P6)
	CSE A	Library	Library	Basic EE (P6) [Room No. A201]	Physics (CSE-A) (P6) [Room No. A201]			
	CSE B		Physics Lab (CSE-B) (P6) (P6) (P6)		Basic EE (A204) [Room No. A201]			Math (CSE B) (P6) [Room No. A201]
Friday	ECE	Basic EE (CE) [Room No. A201]	Math (CE-1A) (P6) [Room No. A204]	Basic EE Lab (CE-1A) (P6) (P6) (P6)				Math (CSE B) (P6) [Room No. A201]
	EE		Chemistry Lab (CE-1A) (P6) (P6) (P6)					Math (CSE B) (P6) [Room No. A201]
	ME	Library	Library	Physics (CE-1A) (P6) [Room No. A201]	Basic EE (A204) [Room No. A201]			Physics Lab (CE-1A) (P6) (P6) (P6)
	CE	Math (CE-1A) (P6) [Room No. A201]	Basic EE (A204) [Room No. A201]	Basic EE Lab (A204) (P6) (P6) (P6)				
	CSE-A	Library	Basic EE (P6) [Room No. A201]	Physics (CSE-A) (P6) [Room No. A201]	Tutorial (P6) [Room No. A201]			Workshop Practice (CSE-A-G-0) (SUBSAR) (P6) (P6) (P6) Physics Lab (CSE-A-G-0) (P6) (P6) (P6)
Saturday	CSE-B	Physics (CE-1A) (P6) [Room No. A201]	Basic EE (A204) [Room No. A201]	Math (CSE B) (P6) [Room No. A201]	Tutorial (P6) [Room No. A201]			
	ECE	Basic EE (CE) [Room No. A204]	Chemistry (CE-1A) (P6) [Room No. A204]	Tutorial (CE) (A2) [Room No. A204]	Math (CSE B) (P6) [Room No. A204]			Chemistry (CE) (A2) [Room No. A201]
	EE	Math (CE-1A) (P6) [Room No. A201]	Basic EE (A204) [Room No. A201]	Basic EE Lab (A204) (P6) (P6) (P6)				
	ME	Math (CE-1A) (P6) [Room No. A201]	Basic EE (A204) [Room No. A201]	Basic EE Lab (A204) (P6) (P6) (P6)				
	CE	Basic EE (CE) [Room No. A201]	Math (CE-1A) (P6) [Room No. A201]	Physics (CE-1A) (P6) [Room No. A201]				Workshop Practice (CE-1A) (P6) (P6) (P6) (P6)
K	CSE-A	Library	Math (CE-1A) (P6) [Room No. A201]	Basic EE Lab (CE-1A) (P6) (P6) (P6)				Basic EE (P6) [Room No. A201]
	CSE-B	Basic EE (CE) [Room No. A201]	Workshop Practice (CSE-B) (SUBSAR) (P6) (P6) (P6)					Basic EE Lab (CE-1A) (P6) (P6) (P6)
	ECE	Chemistry (CE-1A) (P6) [Room No. A204]	Basic EE (CE) [Room No. A204]	Chemistry (CE-1A) (P6) [Room No. A204]	Math (CE) (P6) [Room No. A204]			Physics Lab (CE-1A) (P6) (P6) (P6)
	EE	Basic EE (CE) [Room No. A201]	Engineering Graphics & Design (CE-1A) (P6) (P6) (P6)					
	ME	Basic EE (CE) [Room No. A201]	Math (CE-1A) (P6) [Room No. A201]	Physics (CE-1A) (P6) [Room No. A201]	Library			Workshop Practice (CE-1A) (P6) (P6) (P6) (P6)

Theory Class: CSE A (Roll 1-60)
Lab: CSE A-Gr.I (Roll 1-30)
Lab: ECE Gr.I (Roll 1-30)

CSE B (Roll 61-93)
CSE A Gr.II (Roll 31-60) CSE B (61-93)
ECE Gr.II (Roll 31-63)

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Plupur, Hooghly.

Dr. Smita Ghosh
(Principal in Charge)

DEPARTMENTS: CE/ME/CSE/EE/ECE										
Time Table for 1st Semester 2023										
Day	Dept.	1st Year		1st Semester		Effective from 14th September 2023				
		9:45 A.M - 10:35 A.M	10:35 A.M - 11:25 P.M	11:25 AM - 12:15 PM	12:15 P.M - 01:05 P.M	1:05 P.M - 1:55 P.M	01:55 P.M - 02:45 P.M	02:45 P.M - 03:35 P.M	03:35 P.M - 04:25 P.M	
Tuesday	CE+ME			Math.(CE+ME) (PD) [Room No. A 201]	Physics(CE+ME) (PRG) [Room No. A 201]	B	Basic EE (CE+ME)(AU) [Room No. A 201]	Basic EE Lab. (SND, AU, RM)		
	CSE A	Basic EE(CSE A) (SNB) [Room No. A203]	Library	Physics(CSE A) (PRG) [Room No. A203]	Math.(CSE A)(SUB) [Room No. A203]		Workshop Practice I (CSE -A Gr.-I) (SDB/SAB/SBP/UKS) Physics Lab(CSE A Gr-I) (PRG/SRC/PB)			
	CSE B		Physics(CSE-B) (PRG) [Room No. A202]	Basic EE (CSE B)(SS) [Room No. A202]	Library		Math.(CSE B) (PD) [Room No. A202]	Engineering Graphics & Design (ECE Gr-I) (SAG/DNB/TM) Chemistry Lab (ECE Gr. II)(AG/AD/KM)		
	ECE+EE	Chemistry(ECE+EE)(AG) [Room No. A204]	Math.(ECE+EE)(SUB) [Room No. A204]	Basic EE Lab. Gr.-I (CJ, PG, SJB)						
Wednesday	CE+ME		Physics Lab (CE+ME)(PRG/SRC/PB)			R				
	CSE A	Physics(CSE A) (PRG) [Room No. A203]	Library	Basic EE (CSE A)(SNB) [Room No. A203]	Math.(CSE A) (SUB) [Room No. A203]		Math.(CSE A)(PD) [Room No. A203]	Basic EE Lab. CSE A Gr. II (SND,SOD,RM)		
	CSE B	Math.(CSE B) (SUB) [Room No. A202]	Library	Basic EE (CSE B)(SS) [Room No. A202]	Physics(CSE-B) (PRG) [Room No. A202]		Physics Lab CSE B Gr. II (PRG/SRC/PB)			
	ECE+EE	Basic EE(ECE+EE) (CJ) [Room No. A204]	Chemistry(ECE+EE)(AD) [Room No. A204]	Basic EE Lab. Gr.II (AKM, PG, SJB)						
Thursday	CE+ME			Physics(CE+ME) (PRG) [Room No. A 201]	Basic EE(CE+ME) (SND) [Room No. A 201]	E				
	CSE A			Basic EE(CSE A) (SS) [Room No. A203]	Physics(CSE A) (PRG) [Room No. A203]					
	CSE B	Physics Lab (CSE B Gr. I) (PRG/SRC/PB) Workshop Practice I (CSE -B Gr. II) (RJM/UKS/SAB/SBP)			Basic EE(CSE B) (SDE) [Room No. A202]		Math.(CSE B) (PD) [Room No. A202]	Basic EE Lab. Gr. I (SDE,DB,PG)		
	ECE+EE		Math.(ECE+EE)(PD) [Room No. A204]	Basic EE(ECE+EE) (AKM) [Room No. A204]	Math.(ECE+EE) (SUB) [Room No. A204]		Engineering Graphics & Design (ECE Gr-II)(SAG/DNB/TM) Chemistry Lab (ECE Gr. II)(AG/AD/KM)			
Friday	CE+ME	Math.(CE+ME)(PD) [Room No. A 201]	Basic EE(CE+ME) (SND) [Room No. A 201]	Physics(CE+ME) (PRG) [Room No. A 201]	Math.(CE+ME) (SUB) [Room No. A 201]	A				
	CSE A	Basic EE Lab. Gr. I (SS,SOD,RM)			Library		Physics(CSE-A) (PRG) [Room No. A203]	Workshop Practice I (CSE A Gr-II) (SHG/SAB/UKS/SBP) Physics Lab (CSE A Gr.-I)(PRG/SRC/PB)		
	CSE B	Math.(CSE B)(SUB) [Room No. A202]	Physics(CSE-B) (PRG) [Room No. A202]	Library						
	ECE+EE		Basic EE(ECE+EE) (AKM) [Room No. A204]	Chemistry(ECE+EE) (AD) [Room No. A204]	Math.(ECE+EE)(PD) [Room No. A204]					
Saturday	CE+ME	Basic EE(CE+ME) (AU) [Room No. A 201]	Math.(CE+ME) (SUB) [Room No. A 201]	Physics(CE+ME) (PRG) [Room No. A 201]		K	Workshop Practice I (CE+ME)(SHG/UKS/SBP/SAB)			
	CSE A	Basic EE(CSE A) (SS) [Room No. A203]	Math.(CSE A)(PD) [Room No. A203]							
	CSE B	Basic EE (CSE B)(SDE) [Room No. A202]	Workshop Practice I (CSE -B Gr. I) (RJM/UKS/SBP/SAB) Basic EE Lab. Gr. II (SS,DB,PG)					Physics(CSE-B) (PRG) [Room No. A202]		
	ECE+EE	Chemistry(ECE+EE) (AG) [Room No. A204]	Basic EE(ECE+EE) (CJ) [Room No. A204]							

Theory Class: CSE A (Roll 1-63)

Lab: CSE A-Gr.I (Roll 1-31)

Lab: ECE Gr.I (Roll 1-32)

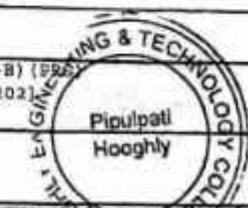
CSE B(Roll 64 TO 125)

CSE A Gr.II(Roll 32-63) CSE B Gr.II(64-94)

ECE Gr.II(Roll 33 TO REST) + EE

CSE B Gr.II(95 TO 125)

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



Dr. Smita Ganguly
(Principal-in-Charge)
12.09.23

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Time Table for Even Semester 2023 - 24

DEPARTMENT OF CEC/SE/EE/ECE/ME Semesters: 4th EFFECTIVE FROM: 1st March, 2024.

DAY	SEM	9:45 AM - 10:25 AM	10:25 AM - 11:25 AM	11:25 AM - 12:15 PM	12:15 PM - 01:05 PM	1:45 PM - 1:55 PM	2:45 PM - 3:25 PM	3:45 PM - 4:25 PM	4:25 PM - 5:15 PM
Tuesday	CE	SOLID MECH (SBD)	ENV. ENG. (SKR)	CONSC. TECH (TG)	CEEG (APD)	ORG BEHV. (RB)	FLUID MECH Lab (G-A) (DB-SMB) SOLID MECH Lab (G-B) (SK-D-SKB)		
	CSE-A	DM (MB)	CA (AB)	EVS (AG)	DAA (DBS/SUD)	INTERNAL TRAINING			
	CSE-B	CA (BB)	EVS (AG)	DAA (DBS/SUD)	DM (MB)	INTERNAL TRAINING			
	ECE	(A305) Analog Circuits (SRS)	(A305) Numerical Methods (SUB)	A404 Analog Elec. Lab (SM-FHS) (G-A) (AD 308) Numerical Lab (G-B) (DC-SRB)		(A305) Biotech for Engg. (SMB)			
Wednesday	EE	Electric machines-1 (SBR/A307)	Digital Electronics Lab (G-A) (SBD, DB) / Electric machines-1 Lab. (G-B) (SBL/SND, SOD, SJB)			Therm. Power Engg. (RMB) [A307]	Environ. SC (AD)(A307)		
	ME	Auto & Instru. (DNB)	Fluid Mech & Fluid MC's (RDM)	Applied Thermo (SHG)		MC Drawing I (SMG/PM)			
	CE	SOIL MECH (AC)	SURVEYING (APD)	ENV ENGG. (PD)	FLUID MECH (JB)	CONCRETE TECH Lab G-A (TG-SMD) SURVEYING LAB GR-B (APD-SKB)			
	CSE-A	PLAT (DBS)	DAA (SUD)	Biotech for Engg. (SMB)	CA (AB)	(NE 303) CA Lab G-A-I (AB-SG) DAA LAB - GR-A2 (DBS-SUD)	LIBRARY	LIBRARY	
Thursday	CSE-B	FLAT (MR)	Biotech for Engg. (SMB)	EVS (AD)	CA (DC)	DM (SBD)	LIBRARY	LIBRARY	
	ECE	(A305) Analog Comm. (SRS)	(A305) Analog Elec. (SM)	Microprocessor (JOB)	Design & Algo (SUD)	(A307) Biotech for Engg. (SMB)	A402 Microprocessor Lab (G-B) (SBR-RS) (AD 308) Numerical Lab (G-A) (DC-SRB)		
	EE	Therm. Power Engg. (RMB) [A307]	Digital Electronics Lab (G-A) (SBD, DB) / Electric machines-1 Lab. (G-B) (SBL/SND, SOD, SJB)			Electrical and Electronic Meas. (AU)(A307)	Electric machines-1 (SBR/A307)	Library	
	ME	Strength of Mat (SAG)	Applied Thermo (SHG)	Materials Engg (SDB)	Metu & Instru. (DNB)	Fluid Mech & Fluid MC's (RDM)		Receschal Class	
Friday	CE	SURVEYING (SND)	FLUID MECH (JB)	SOIL MECH (TG)	CONC. TECH. (SRD)	CONCRETE TECH Lab G-B (TG-SMD) SURVEYING LAB GR-A (APD-SKB)			
	CSE-A	DM (SBR)	FLAT (DBS/MB)	CA (DC)	EVS (AD)	INTERNAL TRAINING			
	CSE-B	DAA (DBS)	(NE 303) CA Lab G-B-I (RB-SG) DAA LAB - GR-B2 (SUD-SKB)			INTERNAL TRAINING			
	ECE	(A305) Design & Algo (SUD)	(A305) Microprocessor (SBR)	Analog Elec. (SM)	Numerical Methods (SUB)	(AD 304) Analog Elec. (TEB)			
Saturday	EE	Elec. & Electric Meas (AU)(A307)	Therm. Power Engg. Lab. (G-A) (RIM/SAR/UKS) / Electrical and Electronic Meas. Lab. (G-B) (AU, DB, SOD)			Values & Ethics (HB)(A307)	Digital Electronics (DIB)(A307)		
	ME	Materials Engg (SDB)	Applied Thermo (SHG)	Metu & Instru. (DNB)	Strength of Mat. (SAG)	LIBRARY	Environ. SC (AG)		
	CE	ENV. ENG. (SKR)	SOLID MECH (JB)	CONC. TECH. (SKR)	SOIL MECH. (SND)	TUTORIAL	FLUID MECH Lab (G-B) (DB-SMD) GEOLOGY Lab (G-A) (SKR-TD)		
	CSE-A	DM (SBR)	DAA (DBS)	FLAT (MR)	Biotech for Engg. (SMB)	(NE 303) CA Lab G-A2 LAB-SG DAA LAB - GR-A1 (SUD-SBR)	TUTORIAL	TUTORIAL	
Sunday	ECE	CA (DC)	DM (SBR)	DM (MB)	FLAT (DBS/SBR)				
	ECE	(A305) Design & Algo (SUD)	(A305) Microprocessor (RMB)	A404 Analog Elec. Lab (SM-FHS) (G-B) (AD 304) Soft Skill Development Lab (G-A) (SBRG)					
	EE	Elec. & Electric Meas (SGL)(A307)	Digital Electronics (SBR)(A307)	Electric machines-1 (SND)(A307)	Values & Ethics (HB)(A307)				
	ME	Applied Thermo (SHG)	Strength of Mat. (SAG)	Fluid Mech & Fluid MC's (RDM)	Metu & Instru. (DNB)	Remedial Class			
Monday	CE	CEEG (PID)	SURVEYING (APD)	FLUID MECH (AC)	SOLID MECH (TG)	TUTORIAL	SOLID MECH Lab (G-A) (SKD-SKR) GEOLOGY Lab (G-B) (SKR-TD)		
	CSE-A	DM (MB)	CA (DC)	Biotech for Engg. (SMB)	LIBRARY				
	CSE-B	Biotech for Engg. (SMB)	FLAT (DBS)	CA (MB)	DAA (SUD)	(NE 303) CA Lab G-B2 (RB-SG) DAA LAB GR-B1 (DBS-SUD)	TUTORIAL	TUTORIAL	
	ECE	(A305) Analog Circuits (SRS)	(A305) Biotech for Engg. (SMB)	Digital Electronics (SBR)(A307)	Therm. Power Engg (RMB) [A307]	A405 Analog Comm Lab (G-A) (SRS-RS)			
ME	Electrical and Electronic Meas (SGL)(A307)	Digital Electronics (SBR)(A307)	Electric machines-1 (SND)(A307)	Therm. Power Engg (RMB) [A307]	Values & Ethics (DKS)(A307)	Remedial Class	Library		
ME		Proc. Methods: Proc & Sys Lab (DNBSAR/SBP)		Materials Engg (SDB)	Fluid Mech & Fluid MC's (RDM)	Strength of Mat. (SAG)	Remedial Class		

Yogir Self-defence
(Audiogram)



Sd/- Lt. Lt. 29.02.24

Dr. Smitadhi Ganguly
Principals (in-charge)
Hooghly Engineering & Technology College
. Vivekananda Road, Pipulpati, Hooghly

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Time Table for Even Semester 2023 - 24

DEPARTMENT OF CE/CSE/ECE/EIE/ME Semester: 6th EFFECTIVE FROM: 2nd January, 2024. (Revised from 1st March, 2024)

DAY	SEM	09:45 AM - 10:35 AM	10:35 AM - 11:25 AM	11:25 AM - 12:15 PM	12:15 PM - 01:05 PM	1:05 PM - 1:55 PM	1:55 PM - 2:45 PM	2:45 PM - 3:35 PM	3:35 PM - 4:25 PM
Tuesday	CE	CEM (TG)	Str Analysis (APD)	WIRE(PID)	Foundation Engg (AC)		EIEE(SVD)	WRE Lab (Gr A) PID,TD / Steel Design Sectional (Gr-B) SBD	
	CSE-A	DBMS (SD)	NMP (RP)	DWDM (BID)	RESEARCH METH (BH)			DBMS LAB (GR-A) (SD+CS)	
	CSE-B	RESEARCH METH (BFG)	CN (MS)	DBMS (SD)	NMP (RP)			CN LAB (GR-B) (MS+MR) Technical Training (GR-C)	
	ECE	(A301) OOPS (SRB) (A406) OS (DIB)	(A301) VLSI Design (SM) A406 ITC (MKS)	(A301) Control Sys (SDM)	TUTORIAL			NE 301 Mini project Design Lab (Gr-A) (DKS+SYS+SG)	
	EE	HVDC transmission (AM)(A303)	Microprocessors (DB)(A303)	Industrial Electrical systems (SS)(A303)	DSP (BB)(A303)			Microprocessor Lab (Gr-A) (DB+BS) A402 / Power systems II Lab (Gr-B) (CI,AKM,SHJ,PG)(A205)	
	ME	IC Engine & Gas Turbines (SAG)	Operations Research (PD)	Design of M/C Elements (SMK)	Manufac. Tech (DNB)			Tutorial for GATE / Internal Training (Available Facilities)	Library
Wednesday	CE	WRE (SKRU)	Steel Design (SBD)	Steel Design (SBD)	Foundation Engg (SKD)		EIEE(SVD)	QSEV (AC) (Gr A) WRE Lab (Gr B) PID,TD	
	CSE-A	CN (MS)	DBMS (SD+CS)	DWDM (ARM)	RESEARCH METH (BH)			Technical Training (Gr-A) DBMS LAB (GR-B) (SD+CS) CN LAB (GR-C) (ARM+MR)	
	CSE-B	DWDM (BID) Pattern (DIB)	RESEARCH METH (BH)	Image Processing (SP/CS)	CN (ARM)			Tutorial for GATE / Internal Training (Available Facilities)	Library
	ECE	Computer NW (DC)	(A301) Computer NW (DC)	(A301) OOPS (DIB) (A406) OS (SRB)				Power system-II Lab (Gr-A) (CLAKMLKB,PG) (A205) / Elec. & Electro. sign Lab (P) (Gr-B) (SS, SDE)(A207)	
	EE	DSP (DKS)(A303)	Power System-II (AKM)(A303)	Design of M/C Elements (SMK)	Eco. for Engineers (DM)(A303)			MEC Engrg Lab (Design) (SAG,CKS+SHJ+SAB)	
	ME	Operations Research (PD)	Manufac. Tech (DNB)	Design of M/C Elements (SMK)	LIBRARY			Library	
Thursday	CE	CEM (PID)	Str Analysis (APD)	Foundation Engg (SKD)	SOFT SKILL (SMG)		Library	Steel Design Sectional (Gr-A) SBD; QSEV (AC) (Gr B)	
	CSE-A	NMP (RP)	DBMS (CS)	Image Processing (SP)	DWDM (ARM)			CN LAB (GR-A) (MS+MR) Technical Training (GR-B)	
	CSE-B	CN (MS+ARM)	Image Processing (SP)	NMP (RP)	DBMS (CS)			DBMS LAB (GR-C) (SD+CS)	
	ECE	(A301) Computer NW (DC)	(A301) VLSI Design (DB) A406 ITC (MKS)	(AD 304) Control Sys (TKB)	(A301) Econ. for Engrg (BS-HU-601) (BSH)			NE 301 Mini project Design Lab (Gr-B) (DKS+PES+SG) (AD 308) Computer NW Lab (Gr-A) (Gr-A) (ARM+DC)	
	EE	Library	Power System-II (AKM)(A303)	DSP (DKS)(A303)	Microprocessors (DB)(A303)			HVDC transmission (AM)(A303)	
	ME	Manufac. Tech (DNB)	Design of M/C Elements (SMG)	Operations Research (PD)	Refrigeration & AC (SHG)			Industrial Electrical systems (KS)(A303)	
Friday	CE	Steel Design (APD)	Steel Design (APD)	WIRE(PID)	Str Analysis (SBD)		Research Class	Research Class	Research Class
	CSE-A	Image Processing (CS)	CN (ARM)	Tutorial for GATE / Internal Training (Available Facilities)			RESEARCH METH (BH)	LIBRARY	
	CSE-B	DWDM (ARM) Pattern (DIB)	Image Processing (CS)		Research Class			RESEARCH METH (BH)	
	ECE	(A301) Control Sys (SM) A406 ITC (MKS+SRK)	(A301) VLSI Design (SM) A406 ITC (MKS+SRK)	UHV (MC-601) (BSH)	HVDC transmission (SS)(A303)			Microprocessor Lab (Gr-B) (DB+BS) A402 / Elec. & Electro. sign Lab (P) (Gr-A) (SS, SDE,PG)(A3210)	
	EE	Industrial Electrical systems (SNB)(A303)	Microprocessors (DB)(A303)	Power Systems-II (CJ)(A303)	Refrigeration & AC (SHG)			Research Class	
	ME	EIEE(B)	Str Analysis (SBD)	Operations Research (PD)	Refrigeration & AC (SHG)			Research Class	
Saturday	CSE-A	NMP (RP)	Image Processing (SP/CS)	Research Class	SOFT SKILL (SMG)		Tutorial for GATE / Internal Training (Available Facilities)		
	CSE-B	DWDM (ARM) Pattern (I)	NMP (RP)	DBMS (SD+CS)	Research Class		Tutorial for GATE / Internal Training (Available Facilities)		
	ECE	(A301) OOPS (SRB) (A406) OS (DIB)	(A301) Control Sys (MKS)	UHV (MC-601) (BSH)	Industrial Electrical systems (SNB)(A303)			Microprocessor Lab (Gr-A) (RM+MKS) (AD 308) Computer NW Lab (Gr-B) (ARM+DC)	
	EE	Power System-II (CJ)(A303)	HVDC transmission (SS)(A303)	Industrial Electrical systems (SNB)(A303)	Research Class			Tutorial for GATE / Internal Training (Available Facilities)	
	ME		Refrigeration & AC (SHG)	Design of M/C Elements (SMG)	IC Engine & Gas Turbines (SAG)			Constitution of India (BD)	
									Research Class

Date: 29.02.24

Dr. Smita Devi Ganguly
(Principal-in-Charge)

Principal in Charge

Hooghly Engineering & Technology College
Vivekananda Road, Pitrapati, Hooghly



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Time Table for Even Semester 2023 - 24

DEPARTMENT OF CE/CSE/ECE/EENI Semester: 8th EFFECTIVE FROM: 2nd January, 2024. (Revised from 1st March, 2024)									
DAY	SEM	09-05 AM-10:05 AM	10:05 AM-11:25 AM	11:25 AM-12:15 PM	12:15 PM-01:05 PM	1:05 PM-1:55 PM	1:55 PM-2:45 PM	2:45 PM-3:35 PM	3:35 PM-4:25 PM
Tuesday	CE	Project Part B (ALL AVAILABLE FACILITIES)		DEEP FTD (SAG)/ HREM (SAG)		LIBRARY			PAV MATERIAL (AC)/ Eec. Lab (SKE)
	CSE-A	E-Commerce & ERP (MS)	Crypt & Net Sec (MR)/ Web Tech (MB)	Mobile Comp (AGB)					
	CSE-B	Mobile Comp (AGB)	Crypt & Net Sec (MR)/ Web Tech (MB)	E-Commerce & ERP (MS)					
	ECE	(A410) IoT (SJM)	(AD 204) OB (SRD)	(AD 314) FOC (TEB)	(A410) Mixed Sig. Desg (AB)	(A410) Indus. Control (PKS)			
Wednesday	CE	Line Comm. & Adv. Net. Sec (SRP)(A409) / Ind. Auto. & Control (A3)(AD210) / Adv. Btc. Drives (DM)(A307)	Remedial Class	Utilization of Elec. Pow. (SDE)(A409)	Remedial Class				
	CSE-A	Project: Part B (All ME Facilities)	DEEP FTD (SAG)/HREM (SRD)	Internet of Things (SYS)	Indus. Pollution & Control (RDM)				
	CSE-B	(A410) IoT (SJM)	(A410) Mixed Sig. Desg. (AB)	(A410) FOC (DKS)	(AD 304) OB (SRD)	(A410) AI (SBR)			
	ECE	Sensors & Trans. (SDE)(AD210)/ Inno. to M.L. (PKS)(A407)	Remedial Class	Remedial Class	Utilization of Elec. Pow. (S)(A400)				
Thursday	CE	Project: Part B (All CE Facilities)	3D Printing & Design (SDB)	Indus. Pollution & Control (RDM)	Power Plant Engineering (SAG)				
	CSE-A	(A410) FOC (SBS)	(A410) IoT (SJM)	Project: Part B (All CE Facilities)					
	CSE-B	Utilization of Elec. Pow. (S)(A400)	Sensors & Trans. (SDE)(AD210)/ Inno. to M.L. (SYS)(A400)	Remedial Class	(AD 304) OB (SRD)	(A410) AI (SBR)			
	ECE	Indus. Pollution & Control (RDM)	Power Plant Engineering (SAG)	3D Printing & Design (SDB)	Internet of Things (SYS)	Project: Part B (All ME Facilities)			
Friday	CE	Project: Part B (All CE Facilities)	Crypt & Net Sec (MR)/ Web Tech (MB)	Mobile Comp (SD)	Remedial Class				
	CSE-A	Crypt & Net Sec (MR)/ Web Tech (MB)	E-Commerce & ERP (SJD)	Remedial Class	Internet of Things (SYS)				
	CSE-B	Crypt & Net Sec (MR)/ Web Tech (MB)	Mobile Comp (SD)	E-Commerce & ERP (SJD)	Remedial Class				
	ECE	Project: Stage II (EC 801) (ALL AVAILABLE FACILITIES)	Remedial Class	Line Comm. & Adv. Net. Sec (SRP)(A409) / Ind. Auto. & Control (SDE)(A409) / Ind. Auto. & Control (SYS)(AD210) / Adv. Btc. Drives (DM)(A307)	Line Comm. & Adv. Net. Sec (SRP)(A409) / Ind. Auto. & Control (SDE)(A409) / Ind. Auto. & Control (SYS)(AD210) / Adv. Btc. Drives (DM)(A307)				
Saturday	CE	ENV DAP (SKE)(URBAN TRAN (TG))	Project: Part B (All CE Facilities)	Project: Part B (All CE Facilities)	Project: Part B (All CE Facilities)				
	CSE-A	E-Commerce & ERP (SUDAS)	Mobile Comp (SD-AGB)	Mobile Comp (SD-AGB)	Mobile Comp (SD-AGB)				
	CSE-B	Mobile Comp (SD-AGB)	E-Commerce & ERP (SUDAS)	E-Commerce & ERP (SUDAS)	E-Commerce & ERP (SUDAS)				
	ECE	Project: Stage II (EC 801) (ALL AVAILABLE FACILITIES)	Project: Stage II (All available facilities)	Project: Stage II (All available facilities)	Project: Stage II (All available facilities)				

S.H.L: L.Y 29.02.24
Dr. Smitaditya Ganguly
(Principal-in-Charge)

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



Day	10:00-10:30	10:30-11:00	11:00-11:30	12:30-1:30	1:30-2:15	2:15-3:00	3:00-3:30	3:30-4:45	4:45-5:30
Tuesday	DEP								
	CHE	PROGRAMMING (AD)	Math (BT)	MOOCGPTTHORQMS			Graphics Lab (Co-B) (SADTAN)		
	ME	←	Chemistry Lab (Co-A + B) (AD/AD, SD)				Library		
	ECE	Math (SUB)	English (TMAD)	MOOCGPTTHORQMS					
Wednesday	EE	Math (TO)	PROGRAMMING (DBS)	Library			Eng. Lang Lab (T) (B) (SB)		
	CE	PROGRAMMING (SD)	Math (SUB)	Math (TO)			Eng. Lang Lab (T) (A + B) (TMAD)		
	CBE	English (SB)	Chemistry (AD)	MOOCGPTTHORQMS			Eng. Lang Lab (T) (A/B) (SBOTM)		
	ME	PROGRAMMING (SP)	Chemistry (AD)	Math (SUB)			Physics Lab (Co-A) (PBO/PB)		
Thursday	ECE	Math (TO)	English (SB)	PROGRAMMING (MS)			Workshop (Co-B) (SAD/CS/SB)		
	EE	Math (SUB)	Math (TO)	Physics (PBC)			PROGRAMMING FOR PROBLEM SOLVING (Co-A) (DBS-8P)		Library
	CE	ET & TD (SB)	PROGRAMMING (SD)	English (TMAD)			PROGRAMMING FOR PROBLEM SOLVING (Co-A) (SD-505)		
	CBE	PROGRAMMING (SD)	Chemistry (AD)	Math (BT)			Chemistry Lab (Co-B) (AD/AD)		
Friday	ME	Math (TO)	PROGRAMMING (SP)	Chemistry (AD)			Graphics Lab (Co-A) (SAD/SD)		
	ECE	Physics (AN)	Math (TO)	PROGRAMMING (QAD)			PROGRAMMING FOR PROBLEM SOLVING (Co-A-A) (SP+SD)		
	EE	Math (SUB)	PROGRAMMING (DBS)	English (TMAD)			PROGRAMMING FOR PROBLEM SOLVING (Co-A) (MS+MS)		
	CE	ET & TD (SB)	PROGRAMMING (SD)	Chemistry (AD)			Eng. Lang Lab (T) (B) (TMAD)		
Saturday	CBE	PROGRAMMING (SD)	Chemistry (AD)	English (TMAD)			Physics Lab (Co-A) (PBO/PB)		
	ME	PROGRAMMING (SP)	Math (TO)	Math (SUB)			Workshop (Co-A) (SAD/MS/SB)		
	ECE	PROGRAMMING (QAD)	Math (SUB)	Physics (PBC)			PROGRAMMING FOR PROBLEM SOLVING (Co-B) (SAS-5P)		
	EE	Physics (PBC)	Physics (AB)	MOOCGPTTHORQMS			Eng. Lang Lab (T) (A) (TMAD)		
Sunday	CE	English (TMAD)	Chemistry (AD)	Math (TO)			Optics Lab (Co-A + B) (SB+SB)		
	CBE	Math (BT)	Chemistry (AD)	PROGRAMMING (SD)			PROGRAMMING FOR PROBLEM SOLVING (Co-B) (MS-SD)		Library
	ME	English (SB)	PROGRAMMING (SP)	Chemistry (AD)			Library		
	ECE	Physics (AD)	Physics (PBC)	PROGRAMMING (MS)			PROGRAMMING FOR PROBLEM SOLVING (Co-B) (SAS-SD)		
Monday	EE	PROGRAMMING (DBS)	Physics (AD)	English (SB)			Workshop (Co-A) (SAD/MS/SB)		
	CE	PROGRAMMING (SP)	Chemistry (AD)	Math (SUB)			Physics Lab (Co-B) (AD/AD)		
	CBE	English (SB)	Chemistry (AD)	PROGRAMMING (SD)			Workshop (Co-B) (SAD/CS/SB)		
	ME	English (SB)	PROGRAMMING (SP)	Chemistry (AD)			Chemistry Lab (Co-A + B) (AD/AD, SD)		

Prof(Dr.) S. Bhattacharyya (PRINCIPAL)

S. Bhattacharyya 22/12/18

HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE

4th SEMESTER EFFECTIVE FROM: 02.01.2019

Revised On: 1.06.2018

2nd Year	4th Semester	Effective From: 02.01.2019				Revised On:
Day	16.00-17.30	18.00-19.30	19.30-21.00	21.00-22.30	22.30-24.00	24.00-25.30
Friday	TRADING	AUTOMATA (M4)	Math (M7)			
	Eng Lab (M40)	←	←			
	Thermal Power Lab (M4)	←	←			
	Pr. Mech (S8B)	←	←			
	Math (M7)	←	←			
Thursday	AUTOMATA (M4)	←	←			
	Eng Lab (M40)	←	←			
	Thermal Power Lab (M4)	←	←			
	Pr. Mech (S8B)	←	←			
	Math (M7)	←	←			
Wednesday	TRADING	AUTOMATA (M4)	Math (M7)			
	Eng Lab (M40)	←	←			
	Thermal Power Lab (M4)	←	←			
	Pr. Mech (S8B)	←	←			
	Math (M7)	←	←			
Tuesday	TRADING	AUTOMATA (M4)	Math (M7)			
	Eng Lab (M40)	←	←			
	Thermal Power Lab (M4)	←	←			
	Pr. Mech (S8B)	←	←			
	Math (M7)	←	←			
Monday	TRADING	AUTOMATA (M4)	Math (M7)			
	Eng Lab (M40)	←	←			
	Thermal Power Lab (M4)	←	←			
	Pr. Mech (S8B)	←	←			
	Math (M7)	←	←			
Sunday	TRADING	AUTOMATA (M4)	Math (M7)			
	Eng Lab (M40)	←	←			
	Thermal Power Lab (M4)	←	←			
	Pr. Mech (S8B)	←	←			
	Math (M7)	←	←			

Prof.(Dr.) S. Bhattacharyya (PRINCIPAL) 22/12/18

Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30 - 1:20	1:30-2:10	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30	
Tuesday	CBE	OR (15)	Information TA (20)	Practical Mgmt (LAB) (20)	B	CONVERTER NETWORK LAB (OR-A) (100-1002)	OR LAB (OR-A) (100-1002)		Remedial class	
	ECE	Practical Mgmt (LAB) (20)	Dig Comm (15)	Complex		APPLIED LAB (OR-A) (100-1003)	SEMI-CON LAB (OR-B) (100-1003)			
	EE	Power Sys-II (20)	Power Electronics (20)	Power Electronics (20)		Control Sys-II (20)	Power Electronics Lab (OR-A) (100-1004)	Power Electronics Lab (OR-B) (100-1004)		
	CE	Des of SS (100)	Des of SS (100)	They & Team (AC)		CHNACTO	Practical Mgmt (LAB) (20)	CAD LAB (OR-A) (100-1005)	CAD LAB (OR-B) (100-1005)	
	ME	Practical Mgmt (LAB) (20)	IC Engine (20)	Mechanical Drawing (20)			Mechan Design (20)	Assembling & Debugging Lab (OR-A) (100-1006)	Disassembly of M/C Lab (OR-B) (100-1006)	
Wednesday	CBE	OR (15/20)	CONVER (20)	MULTIMEDIA (20)	A	OPERATIONAL SYSTEM LAB (OR-A) (100-1007)	OR LAB (OR-A) (100-1007)		Remedial class	
	ECE	Dig Comm (15)	Information TA (10)	OR (20)		Power Sys-II Lab (OR-A) (100-1008)	Dig Comm Lab (OR-B) (100-1008)			
	EE	OR (20)	Power Electronics (20)	Control Sys-II (20)		Highway Lab (OR-A) (100-1009)	Power Sys-II Lab (OR-B) (100-1009)			
	CE	CHNACTO	They & Team (20)	Des of SS (20)		IC Engine Lab (OR-A) (100-1010)	IC Engine Lab (OR-B) (100-1010)		Library	
	ME	←	←	←		←	←	←	←	←
Thursday	CBE	CONVER (20)	←	OPERATIONAL SYSTEM LAB (OR-B) (100-1011)	E	Information TA (20)	Technical Apprais (20)	TRAINING	Remedial class	
	ECE	OR (20)	Practical Mgmt (LAB) (20)	TRAINING		Library	Technical Apprais (20)	SEMI-CON LAB (OR-A) (100-1012)	OR LAB (OR-B) (100-1012)	
	EE	Practical Mgmt (LAB) (20)	Power Sys-II (20)	TRAINING		←	←	←	←	←
	CE	←	←	←		←	←	←	←	←
	ME	←	←	←		←	←	←	←	←
Friday	CBE	OR (20)	Information TA (20)	MULTIMEDIA (20)	A	APPLIED CLASS (Dept. Faculty)	CONVERTER NETWORK LAB (OR-B) (100-1002-101)	TECH LAB		
	ECE	Information TA (10)	Technical Apprais (20)	OR (20)		Power Electronics (20)	OR LAB (OR-A) (100-1003)	OR LAB (OR-B) (100-1003)		
	EE	Power Sys-II (20)	Power Electronics (20)	OR (20)		←	←	←	←	
	CE	Practical Mgmt (LAB) (20)	IBAD (LAB)	Practical Mgmt (LAB) (20)		←	←	←	←	
	ME	←	←	←		←	←	←	←	
Saturday	CBE	CONVER (20)	TNO	MULTIMEDIA (20)	E	←	←	←	←	
	ECE	Dig Comm (20)	OR (20)	Information TA (10)		←	←	←	←	LIBRARY
	EE	OR (20)	Practical Mgmt (LAB) (20)	Power Sys-II (20)		←	←	←	←	←
	CE	←	←	←		←	←	←	←	←
	ME	←	←	←		←	←	←	←	←

Day	10:00-10:30	10:30-11:00	11:00-12:30	12:30-1:30	1:30-2:15	2:15-3:00	3:00-3:30	3:30-4:00	4:00-4:30
Monday	CSE	E-Commerce (S111)	E-Commerce (S11DMS)	Cryptography (S11)	Cryptography (S11SMB)	Org. Binder (S11)	Project EE-481 (All Available EE Faculties)	Design Lab (CA-B)	_____
	ECE	_____	PROJECT (ALL FACULTY)		_____	_____	PROJECT (ALL FACULTY)	_____	
	EE	Energy Management and Audit EE-401C (SMB)	Energy & Transformers EE-401B (S10C)	_____	Org. Binder (S11)	Project EE-481 (All Available EE Faculties)	_____	_____	
	CE	Power Dns (TD)	Env. Poll. control	Project (A+B) (All available Faculties)	_____	Project (A+B) (All Available Faculties)	_____	_____	
Tuesday	ME	_____	Project Part B (All ME Faculties)		_____	_____	Project Part B (All ME Faculties)	_____	
	CSE	_____	DESIGN LAB (CA-A)		_____	_____	DESIGN LAB (CA-B)	_____	
	ECE	Sat. Comm (S10B)	Sat. Comm (S10A)	Renewable Energy (S10)	Renewable Energy (S10)	Org. Binder (S11)	Project EE-481 (All Available EE Faculties)	Project (A+B) (All Available Faculties)	
	EE	_____	Project EE-481 (All Available EE Faculties)		_____	_____	Project (A+B) (All Available Faculties)	_____	
Wednesday	CE	Env. Poll. control	_____	Project (A+B) (All Available Faculties)	_____	Org. Binder (S11)	Project (A+B) (All Available Faculties)	_____	
	ME	Env. for Enrg (S10A)	Assembly Enrg. (S10)	Quality & Reliability Enrg. (S10C)	_____	_____	Project Part B (All ME Faculties)	_____	
	CSE	Cryptography (S11)	E-Commerce (SMB)	Renewable class	Renewable class	Org. Binder (S11)	DESIGN LAB (CA-B)	_____	
	ECE	Sat. Comm (S10A)	Sat. Comm (S10B)	Renewable Energy (S10C)	Renewable Energy (S10C)	Org. Binder (S11)	Project EE-481 (All Available EE Faculties)	Project (A+B) (All Available Faculties)	
Thursday	CE	Power Dns(AC)	Env. Poll. control	Renewable class	Renewable class	Org. Binder (S11)	Project EE-481 (All Available EE Faculties)	_____	
	ME	Quality & Reliability Enrg. (S10A)	Assembly Enrg. (S10B)	_____	Env. for Enrg (S10A)	_____	Project Part B (All ME Faculties)	_____	
	CSE	_____	PROJECT (ALL FACULTY)		_____	_____	PROJECT (ALL FACULTY)	_____	
	ECE	Renewable class	DESIGN LAB (CA-B) (S10S/W10S10)	_____	Org. Binder (S11)	DESIGN LAB (CA-B) (S10S/W10S10)	_____		
Friday	EE	Energy & Transformers EE-402B (S10C)	Electrical system Lab-II EE-483 (CA-A+B) (S10D/S10E/S10F/S10G/S10H/PQ)	_____	_____	_____	DESIGN LAB (CA-B) (S10S/W10S10)	_____	
	CE	Power Dns(TD)	_____	Structural design & practice (A+B) (RUP/APD/S11)	_____	_____	Project EE-481 (All Available EE Faculties)	_____	
	ME	Env. for Enrg (S10A)	Quality & Reliability Enrg. (S10A)	_____	_____	_____	Design of Mechanical Systems (S10S/T10)	_____	
	CSE	_____	PROJECT (ALL FACULTY)		_____	_____	PROJECT (ALL FACULTY)	_____	
Saturday	ECE	_____	PROJECT (ALL FACULTY)		_____	_____	PROJECT (ALL FACULTY)	_____	
	EE	_____	Project EE-481 (All Available EE Faculties)		_____	_____	PROJECT (ALL FACULTY)	_____	
	CE	Structural design & practice (A+B) (RUP/APD/S11)	_____	_____	_____	_____	Electrical system Lab-II EE-483 (CA-A+B) (S10D/S10E/S10F/S10G/S10H/PQ)	_____	
	ME	_____	Project Part B (All ME Faculties)		_____	_____	Project Part B (All ME Faculties)	_____	

Prof.(Dr.) S. Bharadwajya (PRINCIPAL)
22/12/18

1st Year		HODGKIN ENGINEERING AND TECHNOLOGY COLLEGE			
2nd Semester		EFFECTIVE FROM: 21.01.2020			
Day	Time	10:00-11:30	11:00-12:30	12:30-1:30	3:00-4:00
Tuesday	CSE	PROGRAMMING (AD)	MCOCS (ETHICS)		Graphical Lab (Gr-B) (DMGT/TH)
	ME + CE	Chemistry Lab (Gr-A + B) (AG/AD, KAO)			Chemistry Lab (Gr-A) (AG/AD, KAO)
	ECE + EE	Math (SUB)	MCOCS (ETHICS) (SUB)		PROGRAMMING FOR PROBLEM SOLVING (Gr-A/B) (RP+SUB+SB)
	CHE	English (REG)	MCOCS (PYTHON) (SUB)		Physics (B Covers) Library
Wednesday	ME + CE	Chemistry (AD)	MCOCS (PYTHON) (SUB)		Eng. Lang Lab (T) (Gr-A) (EB/EG)
	ECE + EE	Chemistry (AG)	Math (SUB)		Library
	CSE	PROGRAMMING (MCO)	Physics (SUB)		English (REG)
	ME + CE	Chemistry (AD)	Math (REG)		Chemistry Lab (Gr-A + B) (AG/AD, KAO)
Thursday	ECE + EE	PROGRAMMING (RP)	Chemistry (AD)		Physics Lab (Gr-A) (PDC/PP/REC) Workshop (Gr-B) (PDC/PP/REC)
	CSE	Math (PD)	Math (REG)		Chemistry Lab (Gr-B) (AG/AD, KAO) Graphical Lab (Gr-A) (AG/AD, KAO)
	ME + CE	Physics (REG)	Chemistry (AD)		PROGRAMMING FOR PROBLEM SOLVING (Gr-A) (RP+SUB+SB)
	CSE	Chemistry (AG)	English (REG)		Eng. Lang Lab (T) (Gr-B) (EB/G)
Friday	ME + CE	Math (SUB)	English (REG)		Chemistry Lab (Gr-B) (AG/AD, KAO)
	ECE + EE	Chemistry (AD)	Math (PD)		Library
	CSE	Math (SUB)	PROGRAMMING (SUB)		Eng. Lang Lab (T) (Gr-B) (EB/G)
	ME + CE	Physics (REG)	PROGRAMMING (SUB)		PROGRAMMING FOR PROBLEM SOLVING (Gr-A) (RP+SUB+SB)
Saturday	ME + CE	Chemistry (AG)	Library		Physics Lab (Gr-A) (PDC/PP/REC) Workshop (Gr-A) (PDC/PP/REC)
	ECE + EE	Math (SUB)	PROGRAMMING (MCO)		Eng. Lang Lab (T) (Gr-A) (EB/G)
	CSE	Physics (SUB)	PROGRAMMING (MCO)		PROGRAMMING FOR PROBLEM SOLVING (Gr-A) (RP+SUB+SB)
	ME + CE	English (REG)	Physics (SUB)		Chemistry Lab (Gr-A) (AG/AD, KAO)

1st Year
18.07.20

S. S. Bhattacharya 18/07/2020
Prof. (Dr.) S. Bhattacharya (PRINCIPAL)

2nd YEAR		HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE						
4th SEMESTER		EFFECTIVE FROM: 01.02.2020						
Day	Time	10:00-10:50	10:50-11:40	11:40-12:20	12:30-1:20	2:10-3:00	3:00-3:50	
Tuesday	CSE	Technical Aptitude (MKT)	Biology (SMB)	Autonuta (MD)	DAA (DBS/SUD)	2:10-3:00	3:00-3:50	4:40-5:30
	ECE	Analog Communication (SBS)	←	Analog Communication Lab (Gr-A) (SBS-SO) Microprocessor & Microcontroller Lab (Gr-B) (SBS-SO)	DAA (DBS/SUD)	←	←	Remedial Class
	EE	Thermal Power (RMA)	E & E Measurement (SMB)	Digital Electronics (MKS)	←	←	←	←
	CE	Solid Mech (RJP)	Env. Engg (SB)	Training (TP/DEPT)	←	←	←	←
Wednesday	ME	Fluid Mechanics (SMA)	Applied Thermo (SHEG)	Materials Engg. (RDB)	Strength of Materials (SAG)	←	←	←
	CSE	DM (SD)	Autonuta (DBS/MD)	DAA (SUD)	Computer Architecture (MKT)	←	←	←
	ECE	Microprocessors & Microcontroller (DB)	Analog Electronics (WAM)	Biology (SMB)	←	←	←	←
	EE	Value & Ethics (DKS)	Electrical MC - I (AM)	Technical Aptitude (UD)	←	←	←	←
Thursday	CE	Social & Global (MFD)	Soil Mech (TG)	Fluid Mech (JB)	Solid Mech (RJP)	←	←	←
	ME	Strength of Materials (SAG)	Applied Thermo (SHEG)	General Aptitude (SJB)	←	←	←	←
	CSE	Computer Architecture (MKT)	EVS (AG)	DAA (DBS)	DM (MD)	←	←	←
	ECE	Analog Communication (SBS)	Biology (SMB)	DAA (SIB)	Microprocessors & Microcontroller (SBS)	←	←	←
Friday	EE	Digital Electronics (SM)	←	E & E Measurement Lab (Gr-A) (SBS-SO) Digital Electronics Lab (Gr-B) (SBS-SO)	←	←	←	←
	CE	Fluid Mech (JB)	Social & Global (MFD)	Com. Tech (SBS)	Survey & Geo (AC)	←	←	←
	ME	Fluid Mechanics (SAG)	Applied Thermo (SHEG)	Materials Engg. (SJB)	Metrology & Instr. (SHEG)	←	←	←
	CSE	Training (TP/DEPT)	←	DM (MD)	Autonuta (DBS)	←	←	←
Saturday	ECE	Analog Electronics (SMA)	Analog Electronics (SMA)	Analog Communication (TKB)	Analog Communication (TKB)	←	←	←
	EE	E & E Measurement (SBS)	←	Thermal Power Lab (Gr-B) (RMA/GB-SAB) E & E Measurement Lab (Gr-B) (SBS-SO)	←	←	←	←
	CE	Solid Mech (SIB)	Survey & Geo (AC)	Env. Engg (RDB)	Soil Mech (SIB)	←	←	←
	ME	←	Machine Drawing I (Gr. A+B) (SMA/DB/TLA)	←	EVS (AG)	←	←	←


 Prof. (Dr.) S. Bhattacharya (PRINCIPAL)

BHOOSHEE ENGINEERING AND TECHNOLOGY COLLEGE

3rd YEAR		EFFECTIVE FROM: 01.02.2020					Revised on: 21.01.2020	
6th SEMESTER	10:00-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:00-3:50	3:30-4:40	4:40-5:30	
Tuesday	Day	10:00-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:00-3:50	3:30-4:40	
	CSE	DBMS (DBMS2)	OS (OS)	Princl. Mgmt (AIM)	Computer Network (MCS&CD)	DBMS LAB (DB-A) (DB-10)	OS LAB (OS-A) (OS-10)	
	ECE	Information Th (IM)	Princl. Mgmt (AIM)	COOP/UM	Dig Comm LAB (DB-B) (DB-11)	DBMS LAB (DB-B) (DB-11)	TUTORIAL	
	EE	Power Sys-II (CS)	Power Electronics (PE)	DBMS/MS	Training (CD) (M) (TP / Dept.)	Control Sys-II Lab (CS-11) (CS-11A), (CS-11B), (CS-11C)	Library	
Wednesday	ME	Prod. & Operations Management (AOM)	IC Engine (S&G)	Air Conditioning & Refrigeration (ACR)	General Aptitude (Math) (PD/SP/UB)	Dynamics of Machine Lab (Dr B) (S&G/MS/SP)	Air Conditioning & Refrigeration Lab (Dr A) (S&G/MS/SP)	
	CSE	OS (OS/OS2)	DBMS (DB)	Technical Aptitude (TE)	Information Th (IM)	Computer Network Lab (DB-C) (DB-12)	REPAIR LAB (DB-A)	
	ECE	Dig Comm (DC)	DBP (DM)	REMEDIAL	Technical Aptitude (TE)	COOP LAB (DB-A) (DB-12)	DBP (DB-B) (DB-13)	
	EE	DBP (DB)	Power Sys-II (ACM)	Control Sys-II (CS)	DBMS/MS	DBMS LAB (DB-A) (DB-12)	Power Electronics Lab. (DB-13) (DB-13A), (DB-13B)	
Thursday	CE	CPM/PTD	Pro. Conv (PC)	Hy & Trans (AC)	Princl. Mgmt (AIM)	Highway Lab (H) (TC, RC)	Highway Lab (H) (TC, RC)	
	ME	Mechanics & Machine Tools Lab (Dr B) (S&G/MS/SP)	Design Practice II Lab (Dr A) (S&G/MS/SP)	Materials Handling (MH)	IC Engine (S&G) (T)	Air Conditioning & Refrigeration Lab (Dr B) (S&G/MS/SP)	Dynamics of Machine Lab (Dr A) (S&G/MS/SP)	
	CSE	DBMS (DB)	Computer Network Lab (DB-A) (DB-12)	OS LAB (DB-B) (DB-13)	TRAINING (DP/MP) (TP / Dept.)	TECHNICAL TRAINING LAB	TECHNICAL TRAINING LAB	
	ECE	DBP (DM)	Princl. Mgmt (AIM)	Training (DP/MP) (TP / Dept.)	General Aptitude (Math) (PD/SP/UB)	Dig Comm LAB (DB-A) (DB-10)	COOP LAB (DB-B) (DB-11)	
Friday	EE	Control Sys-I (CS)	Power Sys-II (ACM)	Training (DP/MP) (TP / Dept.)	Technical Aptitude (TE)	Power Sys-II Lab (CS-11) (CS-11A), (CS-11B), (CS-11C)	Control Sys-II Lab (CS-11) (CS-11A), (CS-11B), (CS-11C)	
	CE	Hy & Trans (AC)	Pro. Conv (PC)	Princl. Mgmt (AIM)	General Aptitude (Math) (PD/SP/UB)	IC Engine Lab (Dr A) (S&G/MS/SP)	Design Practice II Lab (Dr B) (S&G/MS/SP)	
	ME	Mechanics Principles & Machine Tools (MS)	IC Engine Lab (Dr B) (S&G/MS/SP)	Design Practice II Lab (Dr A) (S&G/MS/SP)	Training (DP/MP) (TP / Dept.)	OS LAB (DB-A) (DB-10)	DBMS LAB (DB-B) (DB-11)	
	CSE	Computer Network (MCS)	Microcos (MP)	OS (OS)	Information Th (IM)	OS LAB (DB-A) (DB-10)	DBMS LAB (DB-B) (DB-11)	
Saturday	ECE	Dig Comm (DC)	Dig Comm (DB)	Information Th (IM)	Telecom (DC)	Library	TECH LAB (DB-A+H)	
	EE	DBP (DB)	Control Sys-I (CS)	DBMS/MS	Princl. Mgmt (AIM)	Power Electronics Lab. (DB-A) (DB-10)	DBMS LAB (DB-B) (DB-11)	
	CE	Pro. Conv (PC)	CPM/DB	REMEDIAL	Technical Aptitude (TE)	Highway Lab (H) (TC, RC)	COOP LAB (DB-B) (DB-12)	
	ME	Materials Handling (MH)	Air Conditioning & Refrigeration (ACR)	Prod. & Operations Management (AOM)	Mechanics Principles & MTC Tools (MS)	Mechanics & Machine Tools Lab (Dr A) (S&G/MS/SP)	IC Engine Lab (Dr B) (S&G/MS/SP)	
	CSE	Computer Network (MCS)	Materials Handling (MH)	Princl. Mgmt (AIM)	GATE/Technical (MATH) (PD/SP/UB)	TECHNICAL TRAINING LAB	TECHNICAL TRAINING LAB	
	ECE	DBP (DM)	Information Th (IM)	COOP/UM	GATE/Technical (MATH) (PD/SP/UB)	REPAIR LAB (DB-B) (DB-11)	DBP (DB-B) (DB-13)	
	EE	Power Sys-II (CS)	DBP (MCS)	Control Sys-II (CS)	GATE/General (MATH) (PD/SP/UB)	Princl. Mgmt (AIM)	REMEDIAL class	
	CE	Pro. Conv (PC)	Hy & Trans (TC)	IC Engine (S&G)	GATE/General (MATH) (PD/SP/UB)	Technical Aptitude (TE)	Seminar/AC	
ME	Mechanics Principles & Machine Tools (MS)	Mechanics Design (MD)	Mechanics Design (MD)	GATE/General (MATH) (PD/SP/UB)	Materials Handling (MH)	Materials Handling (MH)	GATE (Dep. Fee)	



Prof. (Dr.) S. Bhattacharya (PRINCIPAL)

31/01/2020

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Time Table for Old Semester 2023 DEPARTMENT OF CHEMISTRY

DAY	TIME	10.30 AM - 12.30 PM	12.30 PM - 02.30 PM	02.30 PM - 04.30 PM	04.30 PM - 06.30 PM
Tuesday	CE	MATH III (R) (A-107)	BIOLGY (R) (A-107)	ENERGY (R) (R) (A-107)	11TH-12TH PH
	CSE-A	CO (MS) (A-206)	Analogue & Digital Electronics Lab (DCS-502) (C/A) (A-401)	ECO ENGG (R) (A-206)	REMEMBRAL CLASS
	CSE-B	DS (R) (A-206)	Computer Organization Lab (C/O) (R) (A-401)	TUTORIAL CLASS	LIBRARY
	ECE	ANMATH III (R) (A-206)	CO (MS) (A-206)	ASISig. & Sys (R) (A-206)	Electronics & Digital Lab (E/D) (A-206)
	EE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	Engg. Mech (R) (A-107)	Indian Constitution (S. Dm) (A-307)
	ME	Thermo (R) (A-107)	Math (R) (A-107)	Remedial	Remedial Class
	CE	MATH III (R) (A-107)	ENERGY (R) (R) (A-107)	ENGLAB (R) (A-107)	REMEMBRAL CLASS
	CSE-A	DS (R) (A-206)	MATH III (R) (A-107)	Computer Organization Lab (C/O) (R) (A-401)	Analogue & Digital Electronics Lab (DCS-502) (C/A) (A-401)
	CSE-B	DS (MS) (A-206)	ITW LAB (R) (A-107) (R) (A-206)	ECO ENGG (R) (A-206)	TUTORIAL CLASS
	ECE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	Engg. Mech (R) (A-107)	Indian Constitution (S. Dm) (A-307)
Wednesday	EE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	Engg. Mech (R) (A-107)	LIBRARY
	EE	E. Circuit Theory (R) (A-107)	ANMATH III (R) (A-206)	Engg. Mech (R) (A-107)	LIBRARY
	ME	Basic Electronics (R) (A-107)	Thermo (R) (A-107)	Page Mech (R) (A-107)	Indian Constitution (S. Dm) (A-307)
	CE	BIOLGY (R) (A-107)	MATH III (R) (A-107)	Practice of Manufacturing Process (M) (A-307)	REMEMBRAL CLASS
	CSE-A	CO (MS) (A-206)	DS (MS) (A-206)	ITW LAB (R) (A-107) (R) (A-206)	LIBRARY
	CSE-B	MATH III (R) (A-107)	ECO ENGG (R) (A-206)	Analogue & Digital Electronics Lab (DCS-502) (C/A) (A-401)	Computer Organization Lab (C/O) (R) (A-401)
	ECE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	Engg. Mech (R) (A-107)	Indian Constitution (S. Dm) (A-307)
	EE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	Engg. Mech (R) (A-107)	LIBRARY
	ME	Thermo (R) (A-107)	ANMATH III (R) (A-206)	Engg. Mech (R) (A-107)	LIBRARY
	CE	ENG MESH (R) (A-107)	LIBRARY	EFFECTIVE TECH COMM (R) (A-107)	REMEMBRAL CLASS
Thursday	CSE-A	DS (R) (A-206)	ANALOG (R) (A-206)	ECO ENGG (R) (A-206)	TECHNICAL APTI
	CSE-B	CO (MS) (A-206)	MATH III (R) (A-107)	ANALOG (R) (A-206)	TUTORIAL CLASS
	ECE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	Library
	EE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	ME	Thermo (R) (A-107)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	CE	ENG MESH (R) (A-107)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	CSE-A	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)
	CSE-B	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)
	ECE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	EE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
Saturday	CE	ENG MESH (R) (A-107)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	CSE-A	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)
	CSE-B	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)
	ECE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	EE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	ME	Thermo (R) (A-107)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	CE	ENG MESH (R) (A-107)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)
	CSE-A	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)
	CSE-B	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)	ANALOG (R) (A-206)
	ECE	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANMATH III (R) (A-206)	ANALOG (R) (A-206)

180725
 PRADOSH KR. ADHARYU
 Principal
 Hooghly Engineering & Technology College




HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Time Table for Odd Semester 2023

DEPARTMENT OF CEE/CSE/ECE/EEE/ME		Semester: 7th		EFFECTIVE FROM: 19th July, 2023		
DAY	SEM	08:45 AM - 10:30 AM	10:35 AM - 11:25 AM	11:25 AM - 12:15 PM	12:15 PM - 01:05 PM	
Tuesday	CE	Project (Available Faculty)	Project (Available Faculty)	Disaster Mang. (PFD) A107 Hydrolic. Sec. (SBD) A306	Cyber Law & Ethics (SVD) A306 Seminar (Adv. Faculty) A306	
	CSE-A	CYBER SEC (BRS)	CLOUD COMP (PS)	PROJECT (ALL FACULTY)	PROJECT-III	
	CSE-B	MULTIMEDIA (DD)	CYBER SEC (BIB)	PROJECT (ALL FACULTY)		
	ECE	A410 Digital Image (ISM)	A410 Entrepreneurship (AB)	Wireless Sensor N/W (MKS) A410	Power Gen Econ (AEM) [A409]	(AD 305) Prupl. of Mang. (SRD)
	EE	Electric Drive (DPN) [A409]	Power Gen Econ (AM) [A409]	IoT (SBH) / AI (SH) [A409 / A307]	Comp Net (SH) [A409]	(AD 305) Prupl. of Mang. (SRD)
	ME	Automobile Engg (PE-ME701 A)	Non-Con. Elec. Res. (DE-ME701D) (SAG)	Econo. For Engg. (EM-HU701)	PW-ME701 Project-III	
	CE	Project (Available Faculty)	Project (Available Faculty)	Project (Available Faculty)	Advs. Str (AFD) A306 Consult Hyd. (SRD) A107	Advs. Str. (SBD) A105 Consult Hyd. (TG) A306
	CSE-A	CYBER SEC (BRS/SED)	CLOUD COMP (PS)	MULTIMEDIA (DD)	PROJECT-III	PROJECT (ALL FACULTY)
	CSE-B	MULTIMEDIA (SP)	CLOUD COMP (DD)	CYBER SEC (BIB)	PROJECT (ALL FACULTY)	
	ECE	A410 Mobile Comm (SBS)	A410 Entrepreneurship (AB)	A410 Digital Image (ISM)	Wireless Sensor N/W (MKS) A410	PROJECT (ALL FACULTY)
EE	Electric Drive (DPN) [A409]	Power Gen Econ (AKM) [A409]	Comp Net (SH) [A409]	(AD 305) Prupl. of Mang. (SRD)		
ME		Adv. Working (RDM)	Automobile Engg. (PE-ME701 A) (SRD)	Adv. Manufac. (SRD)	PROJECT (ALL FACULTY)	
CE	Project (Available Faculty)	Project (Available Faculty)	Railway Engg (AC) A306	PW-ME701 Project-III		
Wednesday	CSE-A	TUTORIAL CLASS				
	CSE-B	TUTORIAL CLASS				
	ECE	A410 Digital Image (ISM)	Wireless Sensor N/W (MKS) A410	Entrepreneurship (TEB) (AD 365)	A410 Mobile Comm (SBS)	PROJECT (ALL FACULTY)
	EE	Electric Drives Lab (A207) [Gr. A] (SAG) (SIB, SOD)	Electric Drives Lab (A207) [Gr. A] (SAG) (SIB, SOD)	IoT (SBH) / AI (SH) [A409 / A307]	Electric Drives Lab (A207) [Gr. B] (SAP, SIB, SOD)	PROJECT (ALL FACULTY)
	ME	Adv. Manufac. (PC-ME701) (SDB)	Adv. Working (RDM)	Non-Con. Elec. Res. (DE-ME701D) (SAG)	Mech. Engg. Lab III (Manufacturing) (SOB/SBP)	
	CE	Library	Print. Conc. (AFD) A306 Repair & Rehab. (GB) A107	Disaster Mang. (T) (PFD) A306 Hydr. Sec. (SBD) A107	Print. Conc. (T) (SBD) A306 Repair & Rehab. (TLA) (SBD) A107	PROJECT (ALL FACULTY)
	CSE-A	MULTIMEDIA (SP)	CYBER SEC (BIB)	PROJECT MGMT (DD)	CLOUD COMP (DD)	
	CSE-B	CYBER SEC (BRS/SED)	MULTIMEDIA (DD)	CLOUD COMP (DD)	PROJECT MGMT (RSH)	PROJECT (ALL FACULTY)
	ECE	IoT (SBH) / AI (SH) [A409 / A410]	Power Gen Econ (AM) [A409]	Electric Drive (SND) [A409]	Comp Net (SH) [A409]	
	EE	Non-Con. Elec. Res. (DE-ME701D) (SAG)	Adv. Manufac. (SDB)	Adv. Working (RDM)	PW-ME701 Project-III	Yoga/ Self-defence (Auditorium)
CE	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)		
Thursday	CSE-A	TUTORIAL CLASS				
	CSE-B	TUTORIAL CLASS				
	ECE	Disaster Mang. (AC) A107 Hydr. Sec. (SBD) A306	Disaster Mang. (AC) A107 Hydr. Sec. (SBD) A306	Disaster Mang. (AC) A107 Hydr. Sec. (SBD) A306	Disaster Mang. (AC) A107 Hydr. Sec. (SBD) A306	PROJECT (ALL FACULTY)
	EE	Remedial Class / Technical Class	Remedial Class / Technical Class	Remedial Class / Technical Class	Remedial Class / Technical Class	PROJECT (ALL FACULTY)
	ME	Remedial Class / Technical Class	Remedial Class / Technical Class	Remedial Class / Technical Class	Remedial Class / Technical Class	
	CE	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)
	CSE-A	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	
	CSE-B	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)
	ECE	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	
	EE	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)
ME	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)	PROJECT (ALL FACULTY)		




PROF. (DR.) PRADOSS K. ADHVARYYU
 Principal
 Hooghly Engineering & Technology College

18/07/23

HIGHER ENGINEERING AND TECHNOLOGY COLLEGE

EFFECTIVE FROM: 04th July 2019

Revised on: 21.08.2019

3RD YEAR

5TH SEMESTER

Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30
Tuesday	CSE	←	Training	←	←	DAA (DBS)	←	Microprocessor Lab (Gr-A) (SBR,BS) DAA LAB (Gr-B) (SUD+DBS)	←
	ECE	←	Micro processor (JDB)	←	←	Eco for Engg (ARM)	←	ANALOG COMM Lab (Gr-A) (SRS/SG) Control Lab (Gr-B) (SJM/MKS)	←
	EE	←	Eco for Engg (ARM)	←	←	TUTORIAL	←	TUTORIAL	←
	ME	←	Electrical Machines (DP)	←	←	←	←	Heat Transfer (RJM)	←
CE	←	Des of RC (JB)	←	←	←	←	Soil Lab-II (Gr-B) (SBD,SMD) Concrete Lab(Gr-A) - (RJP,SKB)	←	←
Wednesday	CSE	←	Eco for Engg (ARM)	←	←	←	←	TECHNICAL LAB	←
	ECE	←	Micro processor (JDB)	←	←	←	←	Microprocessor Lab (Gr-B) (JDB/BS) Tech LAB (Gr-A)	←
	EE	←	Micro processor (MOD)	←	←	←	←	Power System Lab-II(Gr-A)(CJ,AKM,SJB) Control Sys Lab-I(Gr-B)(SS,DB)	←
	ME	←	←	←	←	←	←	Design I (Gr-B) (SMGTM) Electrical Machines Lab (Gr-A) (DP,SOD,RM)	←
CE	←	Engg. Geology (AC)	←	←	←	←	←	Concrete Lab (Gr-B) (TG,SKB) Geology Lab(Gr-A) - (AC,SKM)	←
Thursday	CSE	←	Eco for Engg (ARM)	←	←	←	←	DAA LAB (Gr-A) (SUD+DBS) OOP LAB (Gr-B) (SH+SBH)	←
	ECE	←	Analog Communication(SRS)	←	←	←	←	DS LAB (Gr-A) (MKD+SB) Tech LAB (Gr-B)	←
	EE	←	Power Sys-I (AKM)	←	←	←	←	Power System Lab-I(Gr-B)(CJ,AKM,SJB) Electrical M/C II Lab(Gr-A)(SND,DB,RM)	←
	ME	←	DOM (SAG)	←	←	←	←	Seminar (Gr-A) (SHG/SAB) Appl. Thermo. & Heat Transfer Lab (Gr-B) (RJM/GB)	←
CE	←	Des of RC (JB)	←	←	←	←	←	QSSV Lab (Gr-A) (JB,SKB) Geology Lab(Gr-B) - (AC,SKM)	←
Friday	CSE	←	Micro processor (SBR)	←	←	←	←	OOP LAB(Gr-A) (SH+SBH) C++ LAB (Gr-B) (MKD+MS)	←
	ECE	←	Control System(MKS)	←	←	←	←	Training	←
	EE	←	Electric M/C II (DP)	←	←	←	←	Remedial	←
	ME	←	Heat Transfer (RJM)	←	←	←	←	Microprocessor Lab (Gr-A) (MOD,BS) Seminar (Gr-B) (RJM/GB)	←
CE	←	Foundation (TG)	←	←	←	←	←	Soil Lab-II (Gr-A) (SBD,SMD) QSSV Lab(Gr-B) - (JB,SKM)	←
Saturday	CSE	←	DM (DBS)	←	←	←	←	TECHNICAL TRAINING	←
	ECE	←	Micro processor (JDB)	←	←	←	←	←	←
	EE	←	Micro processor (MOD)	←	←	←	←	←	←
	ME	←	MC Design (SMG)	←	←	←	←	←	←
CE	←	Eco for Engg (ARM)	←	←	←	←	←	←	
Sunday	CSE	←	DM (DBS)	←	←	←	←	←	←
	ECE	←	Micro processor (JDB)	←	←	←	←	←	←
	EE	←	Micro processor (MOD)	←	←	←	←	←	←
	ME	←	MC Design (SMG)	←	←	←	←	←	←
CE	←	Eco for Engg (ARM)	←	←	←	←	←	←	

S. Bhattacharya 21/08/19
Prof.(Dr.) S. Bhattacharya (PRINCIPAL)

Day	Dept.	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30
Tuesday	CSE	CD(SUD)	CC(SH/SBH)	SW (SD)	AI (SP)			AI LAB (GR-A) (SP+SMS) SW ENGG LAB (GR-B) (RS+SD)		
	ECE	DBMS (SD)	VLSI (SM)	Optical Comm & NW (SRS) CN (RS/SUD)	Wireless Comm & NW (MOD)		VLSI (WM)	Project - I (Gr. A & B) (All available ECE Faculty)		
	EE	Computer Network (MKD)		Elec. Drive (AM)	PS-III (SNB)	B	Ren. & Non. Conv. (AKM)	Computer NW Lab (Gr-B) (MS+SB) Electric Drives Lab (Gr-A) (AM, DP, RM, SJ, B)		
	ME		Project (Part I) (Gr. A & B) (All ME Faculty)				Operations Research (SAG)	Advanced Manufacturing Lab (Gr-A) (SDB /SBP)		
Wednesday	CE	Adv. Highway (TG)	Hydr. Structure (APD)	Env. Engrg. (JB)	WIRE(PID)		EE Measurement (SNB)	WIRE(PID)	Adv. Highway (AC)	OFF
	CSE	IT (SH/SBH)		IT LAB (GR-B) (SH+SBH) SW ENGG LAB (GR-A) (RS+SD)				IT LAB (GR-A) (SH+SBH) AI LAB (GR-B) (SP+SMS)		OFF
	ECE	Optical Comm & NW (SRS) | CN (SUD)		Project - I (Gr. A) (All available ECE Faculty)			Radar (MKS)	Group Discussion (Gr-A) (SM, SRS) DBMS LAB (GR-B) (RS+SD)		
	EE	Computer Network (MS/MKD)		Ren. & Non. Conv. (AKM)	Elec. Drive (DP)	R	Utilization of Elec. Pwr. (SND)			OFF
Thursday	ME	Adv. Manufac. (SDB)	Power Plant (SAG)	Operations Research (SMG)	Renew. Energy (SHG)			Advanced Manufacturing Lab (Gr-B) (SDB /SBP)		OFF
	CE	Hydr. Structure (SBD)		EE Measurement Lab (SNB, SIB, SOD) Environmental Lab (GR- KPID, TD)			EE Measurement (SNB)	Env. Engrg. (JB)	Hydr. Structure (SBD)	OFF
	CSE	CD (SUD)	CC (SBH)		Training			PROJECT (Part I) (Gr. A & Gr. B) (All Faculty)		OFF
	ECE		Training	VLSI (WM)	DBMS (RS)			DBMS LAB (GR-A) (RS+SD) Project - I (Gr. B) (All available ECE Faculty)		
Friday	EE		COMPUTER NETWORK LAB (GR-A) (MS+SB) Electric Drives Lab (Gr-B) (AM, DP, RM, SOD)		Computer Network (MS)	E	Project - I (Gr. A & Gr. B) (All available EE Faculties)			OFF
	ME	Adv. Manufac. (SDB)	Renew. Energy (SHG)	Power Plant (SAG)	Adv. Welding (RJM)		Training		Project (Part I) (Gr. A & Gr. B) (All ME Faculty)	
	CE	Adv. Highway (AC)	WRE(RJP)	Env. Engrg. (PID)	Adv. Highway (TG)		EE Measurement (SNB)	Project Part-I (GR-A+BX) (All Available Facilities)		
	CSE	AI (SP)	IT (SBH)	SW (RS/SID)	CC (SH)			PROJECT (Part I) (Gr. A & Gr. B) (All Faculty)		
Saturday	ECE	DBMS (SD)		Group Discussion (Gr-B) (SM, MKS) VLSI Lab (Gr-A) (WM/BS)			Radar (MKS)	COMPUTER NETWORK LAB (SUD+RS) Optical Comm. & NW Lab (SRS, SG)		
	EE		Training	Ren. & Non. Conv. (AKM)	Utilization of Elec. Pwr. (SND)	A	PS-III (SNB)	Elec. System design - I Lab (Gr. A & Gr. B) (AKM, SND, SNB)		
	ME	Operations Research (SAG)	Adv. Welding (RJM)	Adv. Manufac. (SDB)	Power Plant (SAG)		Hydr. Structure (APD)	Project (Part I) (Gr. A & Gr. B) (All ME Faculty)		OFF
	CE	WRE(RJP)	Env. Engrg. (PID)		Training			Project Part-I (GR-A+BX) (All Available Facilities)		
Saturday	CSE	CD (MKD)	IT (SH)	SW (RS)	AI (SP)			GD (Gr. A - SH) & (Gr. B - SBH)		
	ECE	Optical Comm & NW (SRS) | CN (RS)	VLSI (WM)	Wireless Comm & NW (MOD)	Radar (MKS)		Wireless Comm & NW (SJM)	Project - I (Gr. A) (All available ECE Faculty)		
	EE		PS-III (CI)	Elec. Drive (DP)	Utilization of Elec. Pwr. (SND)	K		Project - I (Gr. A & Gr. B) (All available EE Faculties)		
	ME	Power Plant (SAG)	Renew. Energy (SHG)	Adv. Manufac. (SDB)	Adv. Welding (RJM)			Viva Voce on VT (Gr. A + B) (SDB/SAB)		OFF
CE	EE Measurement (SNB)		EE Measurement Lab (SNB, SIB, SOD) Environmental Lab (GR- KPID, TD)					CE Practice (RJP, TG) (GR-A+B)		

 21/08/19
Prof.(Dr.) S. Bhattacharya (PRINCIPAL)

Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30
Tuesday	CSE	Math (SUB)	→ Analog & Digital Elec. Lab (Gr-B) (SBR, DKS) DS Lab (Gr-A)-(DBS+ND)	12:30-1:20	CO (MED/MS)	Economics for Engineers (ARM)	Technical Apt Practice	OFF
	ECE	EVS (AD)	Math (RP)	Digital System Design (SDM)	Electronic Device (TKB)	Electronic Device (TKB)	Technical Apt Practice	Library
	EE	Math (RP)	Elec. Circuit Theory (SS)	Indian Constitution	General Aptitude Practice	Engg. Mech (RJM)	Field Th. (AKR)	OFF
	CE	Engg. Mech(RJP)	Basic Electronics (MOD)	Biology for Engineers (AG)	Math (SUB)	→	CAD Lab (Gr. B) (APD,TD) Life Science Lab-Gr-A	→
	ME	Thermo (SDB)	Basic Electronics (WM)	Math (RP)	Engg. Mech (SMG)	→	OFF	→
Wednesday	CSE	DS (DBS)	CO (ND)	Math (SUB)	Analog & Digital (DKS)	→	DS Lab (Gr-B) (MD-DBS) CO Lab (Gr-A)-(MS+SG)	→
	ECE	Digital System Design (WM)	Math (RP)	DS (MD,SP)	Math (RP)	General Aptitude Practice	Remedial	OFF
	EE	Elec. Circuit Theory (SS)	Analog Electronics (BB)	Field Th. (PRG)	Indian Constitution	Biology for Engineers (AG/AD)	→	OFF
	CE	Intro. CE/APD	Energy Science (TG)	Remedial	Engg. Mech(RJP)	→	Basic Electronics Lab (Gr. B) (MOD,MKS) CAD Lab (Gr-A) (APD,SMID)	→
	ME	Technical Apt Practice	General Aptitude Practice	Manuf. Process (SDB)	Thermo (SHG)	→	OFF	→
Thursday	CSE	Math (RP)	DS (MD)	Analog & Digital (SBR)	Library	→	Library	OFF
	ECE	Digital System Design (WM)	Signal & System (SBR)	Network Theory (DKS)	DS (SP)	→	Digital System Design Lab (GR-B)(SJM,WM) Data Structure Lab (Gr-A) (SP-SMS)	→
	EE	Biology for Engineers (AG)	Math (RP)	Analog Electronics (TKB)	Engg. Mech (RJM)	Field Th. (AKR)	Indian Constitution	OFF
	CE	Intro. CE/APD	Tech Comm (THMD)	Math (PD)	General Aptitude Practice	→	Basic Electronics Lab (Gr. A) (MOD,MKS) Life Science Lab (Gr.B)	→
	ME	Thermo (SHG)	Manuf. Process (SDB)	Math (RP)	Engg. Mech (SMG)	→	Manuf. Practice Lab (Gr A+B) (SDB/SAB/SBP)	→
Friday	CSE	Economics for Engineers (ARM)	→	→	Math (PD)	DS (MD/DBS)	Analog & Digital (SBR)	OFF
	ECE	Electronic Device (SM)	Math (RP)	EVS (AG)	Network Theory (DKS)	→	Remedial	→
	EE	→	Analog Elec. Lab (Gr-A) (SBR, SJB) NMP Lab (Gr-B) (MD+SMS)	Elec. Circuit Theory (CI)	→	Elec. Circuit Th. Lab (Gr-A)(CI, SOD) Analog Elec. Lab (Gr-B) (SBR, SJB)	→	Technical Apt Practice
	CE	Engg. Mech(SDB)	Energy Science (JB)	Math (PD)	Biology (SH)	→	Technical Apt Practice	Library
	ME	Manuf. Process (SDB)	Engg. Mech (SMG)	Basic Electronics (SRS)	Library	→	Library	OFF
Saturday	CSE	→	Analog & Digital Elec. Lab (Gr-A) (SBR, DKS) SCI LAB (GR-B) (SUD+SB)	General Aptitude Practice	Analog & Digital (DKS)	SCI LAB (SP)	OFF	OFF
	ECE	Digital System Design (SJM) (T)	→	→	DS (MD)	→	Electronic Device Lab (Gr-B) (SM/SG) Digital System Design Lab (Gr-A)(SJM,WM)	→
	EE	Math (RP)	Analog Electronics (BB)	Elec. Circuit Theory (CI)	Field Th. (PRG)	→	Elec. Circuit Th. Lab (Gr-B)(SS,SOD) NMP LAB (Gr-B) (SD+SMS)	→
	CE	Intro. CE(AC)	Biology for Engineers (AD)	Energy Science (JB)	Energy Science (T) (JB/TG)	→	Remedial	OFF
	ME	Biology (AG)	Manuf. Process (SDB)	Math (RP)	Math (RP)	Basic Electronics (WM)	Library	Library	OFF

S. Bhattacharya 21/08/19
Prof.(Dr.) S. Bhattacharya (PRINCIPAL)

HOOGLI ENGINEERING AND TECHNOLOGY COLLEGE

EFFECTIVE FROM: 22nd August 2019

1ST YEAR
1ST SEMESTER

Revised on

Day	Sec	Dept.	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30
Tuesday	A	CSE	←	Basic EE Lab (Gr-A) (SNB, DB, SUB) Physics Lab (Gr-B)(AKR/PB)	→	B	Physics (AB)	Math(B. Course)(PD)	Basic EE (SM)	MOOCS	TUTORIAL
		ECE EE	Basic EE (CJ)	Chemistry (AG)	Math (PD)		Chem (B. Course)(AG)	Math (SUB)	Phys (B. Course)(PRG)	Chem (B. Course)(AD)	
	B	CE ME	Math (PD)	Math(B. Course)(SUB)	Basic EE (BB)	R	MOOCS	←	Basic EE Lab (Gr-A+B) (BB/SS,DB,SOD)	→	TUTORIAL
		A	CSE	←	Basic EE Lab (Gr-B) (DKS, DB, RM) Physics Lab(Gr-A)(AB/SRC)		→	Math (PD)	Chem (B. Course)(AG)	English Comm. Gr A (SBG) / Gr. B (TMD)	Chem (B. Course)(AD)
	C	ECE EE	Basic EE (CJ)	Chemistry (AD)	Math (SUB)	E	Phys(B. Course)(AKR)	Math(B. Course)(PD)	←	Chemistry Lab (Gr. A) (AG/AD / KM)	→
		CE ME	Math (SUB)	Physics (PRG)	Basic EE (SS)		←	←	Workshop CE (Gr-A+B) (RJM/UKS/GB)	→	
Wednesday	A	CSE	Math (SUB)	Math(B. Course)(SUB)	Basic EE (SNB)	E	Basic EE (SM)	Physics (AKR)	Math (PD)	Phys (B. Course)(PRG)	TUTORIAL
		ECE EE	Math (PD)	Chemistry (AD)	Basic EE (JDB)		←	←	Engg. Graphics & Design (Gr-B) (SAG/DNB) Chemistry Lab (Gr-A) (AG/AD/KM)	→	
	B	CE ME	Physics (PRG)	Chem (B. Course)(AG)	Basic EE (DKS)	A	English Comm. Gr (A+B) (SBG)	Phys (B. Course)(PRG)	Phys (B. Course)(PRG)	TUTORIAL	
		A	CSE	Physics (PRG)	Math (SUB)		Phys(B. Course)(AKR)	←	Physics Lab (Gr-B) (PRG/SSC) Workshop CSE (Gr-A) (SDB/SAB/SBP/TH)	→	
	C	ECE EE	←	Basic EE Lab (Gr-A) (SND,RM,DB) Chemistry Lab (Gr-B) (AG/AD/KM)	→	A	←	←	Engg. Graphics & Design EE (Gr-A) (SAG/ DNB) Basic EE Lab (Gr-B) (ECE) (JDB, RM,DB)	→	
		CE ME	Physics (AB)	Math (PD)	Math (SUB)		Phys (B. Course)(AKR)	←	Physics Lab (Gr-A+B) (AB / PB)	→	Chem (B. Course)(AD)
Thursday	A	CSE	←	Physics Lab (Gr-A) (PRG/PB) Workshop CSE (Gr-B) (RJM/UKS/GB)	→	K	←	BREAK	Physics (AKR)	Basic EE (SNB)	TUTORIAL
		ECE EE	English Comm. Gr A (SBG) / Gr. B (TMD)	Chemistry (AG)	Math(B. Course)(SUB)		←	←	Chemistry Lab (Gr-B) (AG/AD / KM)	→	MOOCS
	B	CE ME	←	Physics Lab (Gr-A+B) (AKR / SRC)	→	K	Physics (AKR)	Basic EE (SS)	Math(B. Course)(PD)	TUTORIAL	
		C	CE ME	←	←		←	←	←	←	←

S. Bhattacharya 21/08/19
Prof.(Dr.) S. Bhattacharyya (PRINCIPAL)

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Time Table for Even Semester 2023 - 24

DEPARTMENT OF CEASER/CEET/EME Semester: Bk EFFECTIVE FROM: 2nd January, 2024. (Revised from 1st March, 2024)

Day	SEM	09:45 AM - 11:30 AM	11:30 AM - 01:15 PM	01:15 PM - 03:00 PM	03:00 PM - 03:30 PM	03:30 PM - 05:00 PM	05:00 PM - 05:30 PM	05:30 PM - 07:00 PM	
Tuesday	CE	Project Part 2 (ALL AVAILABLE FACILITIES)			DEEP TO (SD) / HEDM (SD)	LIBRARY	PAV MATERIAL (C) / Sen. Lab (SD)	PLS - 2-D	
	CE-4	A-Concepts & DEP (MS)	Cryst & Net Sys (MS) / Web Tech (MS)	Mobile Comp (ASB)	Essential Class	PROJECT - 2			
	CE-6	Mobile Comp (ASB)	Cryst & Net Sys (MS) / Web Tech (MS)	S-Concepts & DEP (MS)	Essential Class	NO (N) Project Stage 2 (DC (M)) - ALL AVAILABLE FACILITIES			
	EE	IA (1) IOT (SM)	IA (2) IOT (SM) / IA (3) AI (SD)	IA (2) IOT (TK)	IA (1) IOT (SM) / IA (2) IOT (TK) / IA (3) AI (SD)	Project Stage 2 (All available facilities)			
	EE	Lab Course & AI (Part B) (SD) (A) (SD) / AI (SD) / AI (SD) / AI (SD) / AI (SD)	Essential Class	Utilization of Sim. Pkt (SD) (A) (SD)	Essential Class	AI Writing @ Design (SD) / Project Part Engineering (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)			
Wednesday	CE	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)			CONVIMP (SD) / URBAN TRANS (TD)	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)	ANY MATERIAL (C) / Sen. Lab (SD)		
	CE-4	PROJECT - 2							General Training
	CE-6	PROJECT - 2							Project Stage 2 (DC (M)) - ALL AVAILABLE FACILITIES
	EE	IA (1) IOT (SM)	IA (1) IOT (SM) / IA (2) IOT (SM) / IA (3) AI (SD)	IA (1) IOT (TK)	IA (1) IOT (SM) / IA (2) IOT (TK) / IA (3) AI (SD)	Project Stage 2 (All available facilities)			
	EE	IA (1) IOT (SM)	IA (1) IOT (SM) / IA (2) IOT (SM) / IA (3) AI (SD)	IA (1) IOT (TK)	IA (1) IOT (SM) / IA (2) IOT (TK) / IA (3) AI (SD)	Project Stage 2 (All available facilities)			
Thursday	CE	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)			CONVIMP (SD) / URBAN TRANS (TD)	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)	ANY MATERIAL (C) / Sen. Lab (SD)		
	CE-4	PROJECT - 2							General Training
	CE-6	PROJECT - 2							Project Stage 2 (DC (M)) - ALL AVAILABLE FACILITIES
	EE	IA (1) IOT (SM)	IA (1) IOT (SM) / IA (2) IOT (SM) / IA (3) AI (SD)	IA (1) IOT (TK)	IA (1) IOT (SM) / IA (2) IOT (TK) / IA (3) AI (SD)	Project Stage 2 (All available facilities)			
	EE	IA (1) IOT (SM)	IA (1) IOT (SM) / IA (2) IOT (SM) / IA (3) AI (SD)	IA (1) IOT (TK)	IA (1) IOT (SM) / IA (2) IOT (TK) / IA (3) AI (SD)	Project Stage 2 (All available facilities)			
Friday	CE	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)			CONVIMP (SD) / URBAN TRANS (TD)	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)	ANY MATERIAL (C) / Sen. Lab (SD)		
	CE-4	PROJECT - 2							General Training
	CE-6	PROJECT - 2							Project Stage 2 (DC (M)) - ALL AVAILABLE FACILITIES
	EE	IA (1) IOT (SM)	IA (1) IOT (SM) / IA (2) IOT (SM) / IA (3) AI (SD)	IA (1) IOT (TK)	IA (1) IOT (SM) / IA (2) IOT (TK) / IA (3) AI (SD)	Project Stage 2 (All available facilities)			
	EE	IA (1) IOT (SM)	IA (1) IOT (SM) / IA (2) IOT (SM) / IA (3) AI (SD)	IA (1) IOT (TK)	IA (1) IOT (SM) / IA (2) IOT (TK) / IA (3) AI (SD)	Project Stage 2 (All available facilities)			
Saturday	CE	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)			CONVIMP (SD) / URBAN TRANS (TD)	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)	ANY MATERIAL (C) / Sen. Lab (SD)		
	CE-4	Cryst & Net Sys (MS)	A-Concepts & DEP (MS)	Mobile Comp (ASB)	Essential Class	Type Self-Admin. / Autonomic			
	CE-6	Cryst & Net Sys (MS)	Mobile Comp (ASB)	S-Concepts & DEP (MS)	Essential Class	Type Self-Admin. / Autonomic			
	EE	Project Stage 2 (DC (M)) - ALL AVAILABLE FACILITIES			Lab Course & AI (Part B) (SD) (A) (SD) / AI (SD) / AI (SD) / AI (SD)	Lab Course & AI (Part B) (SD) (A) (SD) / AI (SD) / AI (SD) / AI (SD)	Project Stage 2 (All available facilities)		
	EE	Utilization of Sim. Pkt (SD) (A) (SD)	Essential Class	Utilization of Sim. Pkt (SD) (A) (SD)	Essential Class	Project Stage 2 (All available facilities)			
Sunday	CE	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)			CONVIMP (SD) / URBAN TRANS (TD)	Project Part 2 (AI) (SD) / Project Part 2 (AI) (SD)	ANY MATERIAL (C) / Sen. Lab (SD)		
	CE-4	A-Concepts & DEP (MS)	Mobile Comp (ASB)	Cryst & Net Sys (MS) / Web Tech (MS)	Essential Class	PROJECT - 2			
	CE-6	Mobile Comp (ASB)	S-Concepts & DEP (MS)	Cryst & Net Sys (MS) / Web Tech (MS)	Essential Class	PROJECT - 2			
	EE	Project Stage 2 (DC (M)) - ALL AVAILABLE FACILITIES							Project Stage 2 (All available facilities)
	EE	Project Stage 2 (All available facilities)							Project Stage 2 (All available facilities)

Sd/- 1/4 29-01-24
 Dr. Sandhya Chandra
 (Principal-in-Charge)
Principal in Charge
 Hooghly Engineering & Technology College



1.1.1

Course Plans

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING
LECTURE PLAN

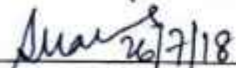


Department: Electronics & Communication Engineering Year: 3rd Paper Name: Analog Communication Contact: 3L+1T Available Weeks: 12 Name of the Faculty: Swarup Samanta	Session: 2018- 2019 Semester: 5th Paper Code: EC-501 Credit: 4 No. of Periods: 36L Designation: Asst. Professor
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------

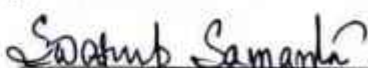
Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
I	Elements of communication system - Transmitters, Transmission channels & receivers, Concept of modulation, its needs. Continuous Wave Linear Modulation: a) Amplitude modulation(AM-DSB/TC): Time domain representation of AM signal (expression derived using a single tone message), modulation index, frequency domain (spectral) representations, illustration of the carrier and side band components; transmission bandwidth for AM; Phasor diagram of an AM signal; Calculation of Transmitted power & sideband power & Efficiency ; concept of under, over and critical modulation of AM-DSB-TC. b) Other Amplitude Modulations: Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, bandwidth and transmission power for DSB. Single side band modulation (SSB) both TC & SC and only the basic concept of VSB, Spectra and band-width.	L1-L8	T1-T2
II	Generation & Detection of Amplitude Modulation: a) Generation of AM: Concept of I) Gated and II) Square law modulators, Balanced Modulator.	L9-L15	T3-T4

	<p>b) Generation of SSB: Filter method, Phase shift method and the Third method</p> <p>Demodulation for Linear Modulation:</p> <p>Demodulation of AM signals: Detection of AM by envelope detector, Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections.</p> <p>Principle of Super heterodyne receivers:</p> <p>Super heterodyning principle, intermediate frequency, Local oscillator frequency, image frequency.</p>		
III	<p>Angle Modulation:</p> <p>a) Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations, Spectral representation of FM and PM for a single tone message, Bessel's functions and Fourier series. Phasor diagram</p> <p>b) Generation of FM & PM: Narrow and Wide-band angle modulation, Basic block diagram representation of generation of FM & PM, Concept of VCO & Reactance modulator</p> <p>c) Demodulation of FM and PM: Concept of frequency discriminators, Phase Locked Loop</p>	L16-L23	T5
IV	<p>Multiplexing</p> <p>a) Frequency Division Multiplexing (FDM), Time Division Multiplexing (TDM)</p> <p>b) Stereo – AM and FM: Basic concepts with block diagrams</p>	L24-L25	

Note: The rest part of the syllabus will be covered by Prof. T.K. Bandyopadhyay


Signature of the HOD

DIC, ECE Deptt.
HETC, Hooghly.


Signature of the Faculty 26/7/18



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING




COURSE PLAN

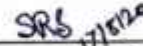
Department: Electronics and Communications Engineering	Session: 2020-21
Year: 3rd	Semester: 5th
Paper Name: Digital Communication and Stochastic Process	Paper Code: EC-503
Contact/week: 12	Credit: 3.5
Available Weeks: 12	No. of Periods available: 36
Name of the Faculty: Swarup Samanta	
Designation: Assistant Professor	

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
III	Introduction to digital communication Elements of digital communication system (Block diagram) Advantages and disadvantages of digital communication	1	
	Different types of sampling and Pulse Modulation (PAM, PWM, PPM)	1	
	Waveform coding: Introduction and PCM	1	
	Quantization Process, uniform quantization and quantization error, Transfer characteristics and error characteristics of different types of quantizer.	2	
	Non-uniform quantization, A-Law and μ -law companding	1	
	Delta Modulation and Adaptive Delta modulation Differential PCM	2	
	Digital transmission components, source, multiplexer, line coder, regenerative repeater, concept of line coding – polar/unipolar/bipolar NRZ and RZ, Manchester, differential encoding and their PSDs, pulse shaping, Inter Symbol Interference (ISI), Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction	2	
	Doubt clearance and Problem solving		2
	Digital Modulation Techniques: Types of Digital		

IV	Modulation, coherent and non-coherent Binary Modulation Techniques, Basic digital carrier modulation technique types Concept of BASK.	1	
	Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals, generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal	2	
	Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal; error probability of BPSK, generation and detection of BPSK Signal, power spectrum of BPSK. Concept of M-ary Communication, M-ary phase shift keying, the average probability of symbol error for coherent M-aryPSK, power spectra of MPSK, Quadrature Phase Shift Keying (QPSK), error probability of QPSK signal, generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase Shift Queuing (OQPSK)	3	
	Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal, Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation diagram, Some performance issues for different digital modulation techniques - Error Vector Magnitude (EVM), Eye Pattern and Relative Constellation Error (RCE), Conceptual idea for Vector Signal Analyzer (VSA)	4	
	Doubt clearance and Problem solving		2
I	Introduction to Stochastic Processes (SPs): Definition and examples of SPs, classification of random processes according to state space and parameter space, elementary problems.	2	
	Stationary and ergodic processes, correlation coefficient, covariance, auto correlation function and its properties,	2	

	Random binary wave, power spectral density.	2	
	Definition and examples of Markov Chains, transition probability matrix, Chapman Kolmogorov equations; calculation of n-step transition probabilities.	2	
	Doubt clearance and Problem solving		2
II	Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality, basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals, likelihood functions,	2	
	Schwartz inequality, Gram-Schmidt orthogonalization procedure, response of the noisy signal at the receiver, maximum likelihood decision rule, decision boundary	1	
	Optimum correlation receiver; probability of error, error function, complementary error function, Type-I and Type-II errors.	3	
	Doubt clearance and Problem solving		2


 17/8/2020
 Signature of the HOD/DIC
 HOD/DIC/Coordinator
 Dept. of ECE, HETC, Hooghly.


 17/8/2020
 Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS
ENGINEERING
COURSE PLAN




Department: Electronics and Communications Engineering	Session: 2020-21
Year: 2nd	Semester: 4th
Paper Name: Analog Communication	Paper Code: EC-401
Contact/week: 12	Credit: 3
Available Weeks:12	No. of Periods available: 36
Name of the Faculty: Mr. Swarup Samanta	Designation: Assistant Professor

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
I	Introduction: Elements of Communication System- Transmitters, transmission channels, and receivers. Different types of communication, Concepts of modulation	2	
	Continuous Wave Linear Modulation: Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index,	1	
	Frequency domain (spectral) representations, illustration of the carrier and sideband components; transmission bandwidth for AM; Phasor diagram of an AM signal.	1	
	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation of AM-DSB-TC.	1	
	Other Amplitude Modulations: Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, bandwidth, and transmission power for DSB.	1	

	Single sideband modulation (SSB) both TC & SC and only the basic concept of VSB, Spectra, and bandwidth.	2	
II	Generation & Detection of Amplitude Modulation: Generation of AM: Concept of I) Gated and II) Square law modulators, Balanced Modulator.	2	
	Generation of SSB: Filter method, Phase shift method, and the Third method.	2	
	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	1	
	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections.	2	
	Principle of Superheterodyne receivers: Super heterodyning principle, intermediate frequency, Local oscillator frequency, image frequency.	2	
	Mod-3 Angle Modulation: Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations, Spectral representation of FM and PM for a single tone message, Bessel's functions, and Fourier series.	2	
III	Phasor diagram	1	
	Generation of FM & PM: Narrow and Wide-band angle modulation, Basic block diagram representation of the generation of FM & PM, Concept of VCO & Reactance modulator.	2	
	Concept of frequency discriminators	1	
	Phase Locked Loop	2	

IV	Multiplexing a) Frequency Division Multiplexing, Time Division Multiplexing, (FDM)	1	
	Stereo – AM, and FM: Basic concepts with block diagrams	1	
	Random Signals and Noise in Communication System: Noise in Communication systems – Internal & External noise, Noise Temperature, Signal-to-Noise ratio, White noise, thermal noise, Figure of Merit.	1	
	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC, SSB-TC, SSBSC & FM.	2	
	Conditional probability, communication example, joint probability, statistical independence, random variable-continuous and discrete, cumulative distribution function, probability density function – Gaussian, Rayleigh, and Rician.	3	


13/4/21

Signature of the HOD/DIC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



Signature of the Faculty



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE PLAN

Department: Electronics and Communications Engineering
Year: 3rd
Paper Name: Digital Communication and Stochastic Process
Contact/week: 12
Available Weeks: 12
Name of the Faculty: Swarup Samanta
Designation: Assistant Professor

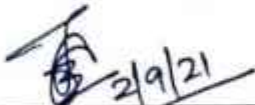
Session: 2021-22
Semester: 5th
Paper Code: EC-503
Credit: 3.5
No. of Periods available: 36

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
III	Introduction to digital communication Elements of digital communication system (Block diagram) Advantages and disadvantages of digital communication	1	
	Different types of sampling and Pulse Modulation (PAM, PWM, PPM)	1	
	Waveform coding: Introduction and PCM	1	
	Quantization Process, uniform quantization and quantization error, Transfer characteristics and error characteristics of different types of quantizer.	2	
	Non-uniform quantization, A-Law and μ -law companding	1	
	Delta Modulation and Adaptive Delta modulation Differential PCM	2	
	Digital transmission components, source, multiplexer, line coder, regenerative repeater, concept of line coding – polar/unipolar/bipolar NRZ and RZ, Manchester, differential encoding and their PSDs, pulse shaping, Inter Symbol Interference (ISI), Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction	2	
	Doubt clearance and Problem solving		2
	Digital Modulation Techniques: Types of Digital		

Random
Defin

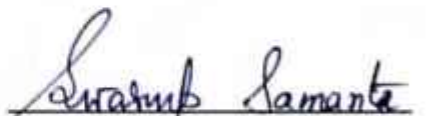
IV	Modulation, coherent and non-coherent Binary Modulation Techniques, Basic digital carrier modulation technique types Concept of BASK.	1	
	Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals, generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal	2	
	Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal; error probability of BPSK, generation and detection of BPSK Signal, power spectrum of BPSK.	3	
	Concept of M-ary Communication, M-ary phase shift keying, the average probability of symbol error for coherent M-aryPSK, power spectra of MPSK, Quadrature Phase Shift Keying (QPSK), error probability of QPSK signal, generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase Shift Queuing (OQPSK)		
	Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal, Gaussian Minimum Shift Keying; GMSK, basic concept of OFDM, constellation diagram, Some performance issues for different digital modulation techniques - Error Vector Magnitude (EVM), Eye Pattern and Relative Constellation Error (RCE), Conceptual idea for Vector Signal Analyzer (VSA)	4	
Doubt clearance and Problem solving		2	
I	Introduction to Stochastic Processes (SPs): Definition and examples of SPs, classification of random processes according to state space and parameter space, elementary problems.	2	
	Stationary and ergodic processes, correlation coefficient, covariance, auto correlation function and its properties.	2	

	Random binary wave, power spectral density.	2	
	Definition and examples of Markov Chains, transition probability matrix, Chapman Kolmogorov equations; calculation of n-step transition probabilities.	2	
	Doubt clearance and Problem solving		2
II	Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality, basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals, likelihood functions,	2	
	Schwartz inequality, Gram-Schmidt orthogonalization procedure, response of the noisy signal at the receiver, maximum likelihood decision rule, decision boundary	1	
	Optimum correlation receiver; probability of error, error function, complementary error function, Type-I and Type-II errors.	3	
	Doubt clearance and Problem solving		2

 2/9/21

Signature of the HOD/DIC

DIC, ECE Deptt.
HETC, Hooghly.


Signature of the Faculty 2/09/21



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS




ENGINEERING
COURSE PLAN

Department: Electronics and Communications Engineering	Session: 2021-2022
Year: 2nd	Semester: 4th
Paper Name: Analog Communication	Paper Code: EC-401
Contact/week: 12	Credit: 3
Available Weeks:12	No. of Periods available: 36
Name of the Faculty: Mr. Swarup Samanta	Designation: Assistant Professor

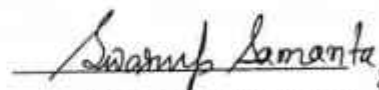
Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
I	Introduction: Elements of Communication System- Transmitters, transmission channels, and receivers. Different types of communication, Concepts of modulation	2	
	Continuous Wave Linear Modulation: Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index,	1	
	Frequency domain (spectral) representations, illustration of the carrier and sideband components; transmission bandwidth for AM; Phasor diagram of an AM signal.	1	
	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation of AM-DSB-TC.	1	
	Other Amplitude Modulations: Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, bandwidth, and transmission power for DSB.	1	

	Single sideband modulation (SSB) both TC & SC and only the basic concept of VSB, Spectra, and bandwidth.	2	
II	Generation & Detection of Amplitude Modulation: Generation of AM: Concept of I) Gated and II) Square law modulators, Balanced Modulator.	2	
	Generation of SSB: Filter method, Phase shift method, and the Third method.	2	
	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	1	
	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections.	2	
	Principle of Superheterodyne receivers: Super heterodyning principle, intermediate frequency, Local oscillator frequency, image frequency.	2	
	Mod-3 Angle Modulation: Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations, Spectral representation of FM and PM for a single tone message, Bessel's functions, and Fourier series.	2	
III	Phasor diagram	1	
	Generation of FM & PM: Narrow and Wide-band angle modulation, Basic block diagram representation of the generation of FM & PM, Concept of VCO & Reactance modulator.	2	
	Concept of frequency discriminators	1	
	Phase Locked Loop	2	

IV	Multiplexing a) Frequency Division Multiplexing, Time Division Multiplexing, (FDM)	1	
	Stereo – AM, and FM: Basic concepts with block diagrams	1	
	Random Signals and Noise in Communication System: Noise in Communication systems – Internal & External noise, Noise Temperature, Signal-to-Noise ratio, White noise, thermal noise, Figure of Merit.	1	
	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC, SSB-TC, SSBSC & FM.	2	
	Conditional probability, communication example, joint probability, statistical independence, random variable-continuous and discrete, cumulative distribution function, probability density function – Gaussian, Rayleigh, and Rician.	3	

 8/2/22

Signature of the HOD/DIC
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

 8/2/22
Signature of the Faculty



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE PLAN

Department: Electronics and Communications Engineering Year: 3rd Paper Name: Digital Communication and Stochastic Process Contact/week: 12 Available Weeks: 12 Name of the Faculty: Mr. Swarup Samanta Designation: Assistant Professor	Session: 2022-23 Semester: 5th Paper Code: EC-503 Credit: 3.5 No. of Periods available: 36L+6T
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
III	Introduction to digital communication: Elements of digital communication system (Block diagram) Advantages and disadvantages of digital communication Different types of sampling and Pulse Modulation (PAM, PWM, PPM) Waveform coding: Introduction and PCM Quantization Process, uniform quantization and quantization error, Transfer characteristics and error characteristics of different types of quantizer. Non-uniform quantization, A-Law and μ -law companding Delta Modulation and Adaptive Delta modulation Differential PCM Digital transmission components, source, multiplexer, line coder, regenerative repeater, concept of line coding – polar/unipolar/bipolar NRZ and RZ, Manchester, differential encoding and their PSDs, pulse shaping, Inter Symbol Interference (ISI), Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction Doubt clearance and Problem solving	L1-L10	T1-T2

IV	<p>Digital Modulation Techniques: Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, Basic digital carrier modulation technique types Concept of BASK.</p> <p>Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals, generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal; error probability of BPSK, generation and detection of BPSK Signal, power spectrum of BPSK.</p> <p>Concept of M-ary Communication, M-ary phase shift keying, the average probability of symbol error for coherent M-ary PSK, power spectra of MPSK, Quadrature Phase Shift Keying (QPSK), error probability of QPSK signal, generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase Shift Queuing (OQPSK)</p> <p>Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal, Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation diagram, Some performance issues for different digital modulation techniques - Error Vector Magnitude (EVM), Eye Pattern and Relative Constellation Error (RCE), Conceptual idea for Vector Signal Analyzer (VSA)</p> <p>Doubt clearance and Problem solving</p>	L11-L20	T3-T4
----	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------	-------

I	<p>Introduction to Stochastic Processes (SPs): Definition and examples of SPs, classification of random processes according to state space and parameter space, elementary problems.</p> <p>Stationary and ergodic processes, correlation coefficient, covariance, auto correlation function and its properties, Random binary wave, power spectral density.</p> <p>Definition and examples of Markov Chains, transition probability matrix, Chapman Kolmogorov equations; calculation of n-step transition probabilities.</p> <p>Doubt clearance and Problem solving</p>	L21-L28	T5
II	<p>Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality, basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals, likelihood functions,</p> <p>Schwartz inequality, Gram-Schmidt orthogonalization procedure, response of the noisy signal at the receiver, maximum likelihood decision rule, decision boundary</p> <p>Optimum correlation receiver; probability of error, error function, complementary error function, Type-I and Type-II errors.</p> <p>Doubt clearance and Problem solving</p>	L-29-L36	T6

S.S.
7/7/22
Signature of the HOD/DIC
DIC, ECE Deptt.
HETC, Hooghly.

S.S.
7/7/22
Signature of the Faculty

82.07.07.22
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpani, Hooghly. 3



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS




ENGINEERING
COURSE PLAN

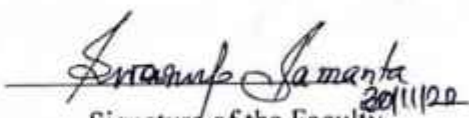
Department: Electronics and Communications Engineering	Session: 2022-23
Year: 2nd	Semester: 4th
Paper Name: Analog Communication	Paper Code: EC-401
Contact/week: 12	Credit: 3
Available Weeks: 12	No. of Periods available: 36
Name of the Faculty: Mr. Swarup Samanta	Designation: Assistant Professor

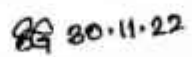
Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
I	Introduction: Elements of Communication System- Transmitters, transmission channels, and receivers. Different types of communication, Concepts of modulation	2	
	Continuous Wave Linear Modulation: Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index,	1	
	Frequency domain (spectral) representations, illustration of the carrier and sideband components; transmission bandwidth for AM; Phasor diagram of an AM signal.	1	
	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation of AM-DSB-TC.	1	
	Other Amplitude Modulations: Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, bandwidth, and transmission power for DSB.	1	

	Single sideband modulation (SSB) both TC & SC and only the basic concept of VSB, Spectra, and bandwidth.	2	
II	Generation & Detection of Amplitude Modulation: Generation of AM: Concept of I) Gated and II) Square law modulators, Balanced Modulator.	2	
	Generation of SSB: Filter method, Phase shift method, and the Third method.	2	
	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	1	
	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections.	2	
	Principle of Superheterodyne receivers: Super heterodyning principle, intermediate frequency, Local oscillator frequency, image frequency.	2	
III	Mod-3 Angle Modulation: Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations, Spectral representation of FM and PM for a single tone message, Bessel's functions, and Fourier series.	2	
	Phasor diagram	1	
	Generation of FM & PM: Narrow and Wide-band angle modulation, Basic block diagram representation of the generation of FM & PM, Concept of VCO & Reactance modulator.	2	
	Concept of frequency discriminators	1	
	Phase Locked Loop	2	

IV	Multiplexing a) Frequency Division Multiplexing, Time Division Multiplexing, (FDM)	1	
	Stereo – AM, and FM: Basic concepts with block diagrams	1	
	Random Signals and Noise in Communication System: Noise in Communication systems – Internal & External noise, Noise Temperature, Signal-to-Noise ratio, White noise, thermal noise, Figure of Merit.	1	
	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC, SSB-TC, SSBSC & FM.	2	
	Conditional probability, communication example, joint probability, statistical independence, random variable-continuous and discrete, cumulative distribution function, probability density function – Gaussian, Rayleigh, and Rician.	3	


 Signature of the HOD/DIC
 DIC, ECE Deptt.
 HETC, Hooghly.


 Signature of the Faculty


 Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Electronics And Communications Engineering Year: 2 nd Paper Name: Mathematics-III (Probability And Statistics) Contact: 3L+0T Available Weeks: 12 Name of the Faculty: Dr. Rajesh Patra	Session: 2022- 2023 Semester: 3 rd Paper Code: BS-M301 Credit: 3 No. of Periods: 3 Designation: Assistant Professor
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (7L)	Probability spaces, Some general properties of probability	L1	T1
	Conditional probability, Independent events and related problems.	L2	
	Discrete Random variables, Independent Random variables, the multinomial distribution	L3	
	Distribution Functions, Expectation, mean and variance	L4	
	Binomial distribution and its mean , variance and related problems, Binomial approximation to Poisson	L5	
	Moments, variance of sums, Correlations and related problems	L6	
	Tchebycheff's inequality and related problems	L7	
Module-II: Continuous Probability distribution (L4)	Continuous Random variables and their properties, distribution functions and density functions	L8	T2
	Normal distribution and its mean, variance, Standard normal distribution and related problems	L9	
	Exponential distribution and its mean, variance and related problems	L10	
	Gamma distribution and its mean, variance and related problems	L11	
Module-III: Bivariate distribution (4L)	Bivariate distributions and their properties	L12	T3
	Bivariate distribution of sums and quotients and related problems	L13	
	Conditional densities	L14	
	Statement and proof of Baye's theorem and its applications	L15	
Module-IV: Basic Statistics (6L)	Measures of Central tendency: Mean, Median and Mode	L16	T4
	Moments, skewness and Kurtosis and related problems	L17	
	Evaluation of statistical parameters for the distributions-Binomial, Poisson and Normal	L18,L19	
	Correlation and regression	L20	
	Rank correlation and related examples	L21	
Module-V: Applied Statistics (6L)	Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves	L22,L23	T5
	Test of significance: Large sample test for single proportion, difference of proportions, single mean	L24,L25	
	difference of means, and difference of standard deviations.	L26	
		L27	
Module-VI: Small samples (4L)	Test for single mean, difference of means	L28	
	Correlation coefficients , test for ratio of variances	L29	
	Chi-square test for goodness of fit and independence of attributes.	L30,L31	

R. Patra
07/07/2022

Signature of the H.O.D.

H. O. D.
Basic Science & Humanities Department
H.E.T.C. Hooghly.

sg
07-07-22

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

R. Patra
07/07/2022

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Computer Science And Engineering Year: 1 st Paper Name: Mathematics-IIA Contact: 3L+1T Available Weeks: 10 Name of the Faculty: Dr. Rajesh Patra	Session: 2022- 2023 Semester: 2 nd Paper Code: BS-M201 Credit: 4 No. of Periods: 4 Designation: Assistant Professor
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (10L+1T)	Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	L1	T1
	Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	L2	
	Applications of Conditional Probability and Baye's Theorem, Related problems	L3	
	Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	L4	
	Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	L5	
	Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	L6	
	Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	L7	
	Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	L8	
	Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	L9	
	Properties of correlation Coefficient, Variance of sums of random variables, Related sums	L10	
Module-II: Continuous Probability Distributions (3L+1T)	Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	L11	T2
	Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	L12	
	Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	L13	
Module-III: Bivariate Distributions (4L+1T)	Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	L14	T3
	Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0, (x, -\infty)=0, F(+\infty, +\infty)=1$ etc. (Statements only)	L15	
	Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	L16	
	Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples Determination of conditional distributions with examples	L17	

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-IV: Basic Statistics (7L.+1T)	Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	L18	T4
	Frequency distribution and its representations, tabular and graphical, including histogram and ogives	L19	
	Determination of Mean, Median and Mode, related examples	L20	
	Range, Mean deviation, Standard deviation, Coefficient of variation		
	Moments, skewness and kurtosis and their interpretations, related examples	L21	
	Scatter diagram, Determination of correlation coefficient	L22	
	Determination of Rank correlation. Concept of linear regression	L23	
	Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	L24	
Module-V: Applied Statistics (7L.+1T)	Principle of least squares, Fitting of straight lines by the method of least squares, Related sums	L25	T5
	Fitting of polynomials (2nd degree) and exponential curves	L26	
	Definitions of random sample, Parameter and statistic, Sampling distribution of a statistic, Sampling distribution of sample mean	L27	
	Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion		
	Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	L28	
	Large sample tests: use of CLT for testing single proportion, difference of two proportions	L29	
	Tests for single mean, difference of two means	L30	
Tests for standard deviation and difference of standard deviations	L31		
Module-VI: Small samples (3L.+1T)	Basic concepts of Student's t, Chisquare and F Distributions	L32	T6
	Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	L33	
	Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	L34	
	Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table		

R. Patre
17/02/2023

Signature of the H.O.D.

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Sd/- 4/ 17.02.23
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpatil, Hooghly.

R. Patre 17/02/2023

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Electronics And Communications Engineering Year: 2 nd Paper Name: Mathematics-III (Probability And Statistics) Contact: 3L+0T Available Weeks: 12 Name of the Faculty: Dr. Rajesh Patra	Session: 2021- 2022 Semester: 3 rd Paper Code: BS-M301 Credit: 3 No. of Periods: 3 Designation: Assistant Professor
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (7L)	Probability spaces, Some general properties of probability	L1	T1
	Conditional probability, Independent events and related problems.	L2	
	Discrete Random variables, Independent Random variables, the multinomial distribution	L3	
	Distribution Functions, Expectation, mean and variance	L4	
	Binomial distribution and its mean, variance and related problems, Binomial approximation to Poisson	L5	
	Moments, variance of sums, Correlations and related problems	L6	
	Tchebycheff's inequality and related problems	L7	
Module-II: Continuous Probability distribution (L4)	Continuous Random variables and their properties, distribution functions and density functions	L8	T2
	Normal distribution and its mean, variance, Standard normal distribution and related problems	L9	
	Exponential distribution and its mean, variance and related problems	L10	
	Gamma distribution and its mean, variance and related problems	L11	
Module-III: Bivariate distribution (4L)	Bivariate distributions and their properties	L12	T3
	Bivariate distribution of sums and quotients and related problems	L13	
	Conditional densities	L14	
	Statement and proof of Baye's theorem and its applications	L15	
Module-IV: Basic Statistics (6L)	Measures of Central tendency: Mean, Median and Mode	L16	T4
	Moments, skewness and Kurtosis and related problems	L17	
	Evaluation of statistical parameters for the distributions-Binomial, Poisson and Normal	L18,L19	
	Correlation and regression	L20	
	Rank correlation and related examples	L21	
Module-V: Applied Statistics (6L)	Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves	L22,L23	T5
	Test of significance: Large sample test for single proportion, difference of proportions, single mean	L24,L25	
	difference of means, and difference of standard deviations.	L26	
		L27	
Module-VI: Small samples (4L)	Test for single mean, difference of means	L28	T5
	Correlation coefficients, test for ratio of variances	L29	
	Chi-square test for goodness of fit and independence of attributes.	L30,L31	

Mukherjee 04/07/2021

Signature of the H.O.D.

H. O. D.

Basic Science & Humanities Department
H. E. T. C., Hooghly.

R. Patra 04/09/2021

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Computer Science And Engineering Year: 1 st Paper Name: Mathematics-IIA Contact: 3L+1T Available Weeks: 10 Name of the Faculty: Dr. Rajesh Patra	Session: 2021- 2022 Semester: 2 nd Paper Code: BS-M201 Credit: 4 No. of Periods: 3 Designation: Assistant Professor
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (10L+1T)	Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	L1	T1
	Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	L2	
	Applications of Conditional Probability and Baye's Theorem, Related problems	L3	
	Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	L4	
	Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	L5	
	Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	L6	
	Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	L7	
	Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	L8	
	Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables, Properties of correlation Coefficient, Variance of sums of random variables, Related sums	L9	
Module-II: Continuous Probability Distribution (3L+1T)	Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	L10	T2
	Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	L11	
	Gamma Distribution and its properties, Related sums, Normal Distribution and its Properties, Related sums	L12	
Module-III: Bivariate Distribution (4L+1T)	Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples, Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0, (x, -\infty)=0, F(+\infty, +\infty)=1$ etc. (Statements only)	L13	T3
	Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples, Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples, Determination of conditional distributions with examples	L14	

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-IV: Basic Statistics (7L+1T)	Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	L15	T4
	Frequency distribution and its representations, tabular and graphical, including histogram and ogives, Determination of Mean, Median and Mode, related examples	L16	
	Range, Mean deviation, Standard deviation, Coefficient of variation	L17	
	Moments, skewness and kurtosis and their interpretations, related examples		
	Scatter diagram, Determination of correlation coefficient, Determination of Rank correlation. Concept of linear regression	L18	
Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	L19		
Module-V: Applied Statistics (7L+1T)	Principle of least squares, Fitting of straight lines by the method of least squares, Related sums, Fitting of polynomials (2nd degree) and exponential curves	L20	
	Definitions of random sample, Parameter and statistic, Sampling distribution of a statistic, Sampling distribution of sample mean	L21	
	Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion		
	Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	L22	
	Large sample tests: use of CLT for testing single proportion, difference of two proportions	L23	
Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	L24		
Module-VI: Small samples (3L+1T)	Basic concepts of Student's t, Chisquare and F Distributions, Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	L25	
	Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	L26	
	Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table		

Mukherjee 15/03/2022

Signature of the H.O.D.

H.O.D.

Basic Science & Humanities Department
H. E. T. C., Hooghly.

R. Patra 15/03/2022

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Electronics And Communications Engineering Year: 2 nd Paper Name: Mathematics-III (Probability And Statistics) Contact: 3L+0T Available Weeks: 12 Name of the Faculty: Mr. Rajesh Patra	Session: 2020- 2021 Semester: 3 rd Paper Code: BS-M301 Credit: 3 No. of Periods: 3 Designation: Assistant Professor
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (7L)	Probability spaces, Some general properties of probability	L1	T1
	Conditional probability, Independent events and related problems.	L2	
	Discrete Random variables, Independent Random variables, the multinomial distribution	L3	
	Distribution Functions, Expectation, mean and variance	L4	
	Binomial distribution and its mean , variance and related problems, Binomial approximation to Poisson	L5	
	Moments, variance of sums, Correlations and related problems	L6	
	Tchebycheff's inequality and related problems	L7	
Module-II: Continuous Probability distribution (L4)	Continuous Random variables and their properties, distribution functions and density functions	L8	T2
	Normal distribution and its mean, variance, Standard normal distribution and related problems	L9	
	Exponential distribution and its mean, variance and related problems	L10	
	Gamma distribution and its mean, variance and related problems	L11	
Module-III: Bivariate distribution (4L)	Bivariate distributions and their properties	L12	T3
	Bivariate distribution of sums and quotients and related problems	L13	
	Conditional densities	L14	
	Statement and proof of Baye's theorem and its applications	L15	
Module-IV: Basic Statistics (6L)	Measures of Central tendency: Mean, Median and Mode	L16	T4
	Moments, skewness and Kurtosis and related problems	L17	
	Evaluation of statistical parameters for the distributions-Binomial, Poisson and Normal	L18,L19	
	Correlation and regression	L20	
	Rank correlation and related examples	L21	
Module-V: Applied Statistics (6L)	Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves	L22,L23	T5
	Test of significance: Large sample test for single proportion, difference of proportions, single mean	L24,L25	
	difference of means, and difference of standard deviations.	L26	
		L27	
Module-VI: Small samples (4L)	Test for single mean, difference of means	L28	
	Correlation coefficients , test for ratio of variances	L29	
	Chi-square test for goodness of fit and independence of attributes.	L30,L31	

Mukherjee 17/08/2020
Signature of the H.O.D.

R. Patra 17/08/2020
Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Computer Science And Engineering Year: 1 st Paper Name: Mathematics-IIA Contact: 3L+1T Available Weeks: 10 Name of the Faculty: Dr. Rajesh Patra	Session: 2020- 2021 Semester: 2 nd Paper Code: BS-M201 Credit: 4 No. of Periods: 4 Designation: Assistant Professor
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (10L+1T)	Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	L1	T1
	Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	L2	
	Applications of Conditional Probability and Baye's Theorem, Related problems	L3	
	Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	L4	
	Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	L5	
	Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	L6	
	Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	L7	
	Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	L8	
	Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	L9	
	Properties of correlation Coefficient, Variance of sums of random variables, Related sums	L10	
Module-II: Continuous Probability Distributions (3L+1T)	Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	L11	T2
	Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	L12	
	Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	L13	
Module-III: Bivariate Distributions (4L+1T)	Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	L14	T3
	Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0, (x, -\infty)=0, F(+\infty, +\infty)=1$ etc. (Statements only)	L15	
	Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	L16	
	Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples Determination of conditional distributions with examples	L17	

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-IV: Basic Statistics (7L+1T)	Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	L18	T4
	Frequency distribution and its representations, tabular and graphical, including histogram and ogives	L19	
	Determination of Mean, Median and Mode, related examples	L20	
	Range, Mean deviation, Standard deviation, Coefficient of variation	L21	
	Moments, skewness and kurtosis and their interpretations, related examples		
	Scatter diagram, Determination of correlation coefficient	L22	
	Determination of Rank correlation. Concept of linear regression	L23	
	Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	L24	
Module-V: Applied Statistics (7L+1T)	Principle of least squares, Fitting of straight lines by the method of least squares, Related sums	L25	T5
	Fitting of polynomials (2nd degree) and exponential curves	L26	
	Definitions of random sample, Parameter and statistic, Sampling distribution of a statistic, Sampling distribution of sample mean	L27	
	Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion		
	Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	L28	
	Large sample tests: use of CLT for testing single proportion, difference of two proportions	L29	
	Tests for single mean, difference of two means	L30	
	Tests for standard deviation and difference of standard deviations	L31	
Module-VI: Small samples (3L+1T)	Basic concepts of Student's t, Chisquare and F Distributions	L32	T6
	Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	L33	
	Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	L34	
	Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table		

Mukherjee 13/04/2021

Signature of the H.O.D.

H. O. D.

Basic Science & Humanities Department
H. E. T. G., Hooghly.

R. Patra 13/04/2021

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Electronics And Communications Engineering Year: 2 nd Paper Name: Mathematics-III (Probability And Statistics) Contact: 3L+0T Available Weeks: 12 Name of the Faculty: Mr. Rajesh Patra	Session: 2019- 2020 Semester: 3 rd Paper Code: BS-M301 Credit: 3 No. of Periods: 4 Designation: Assistant Professor
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (7L)	Probability spaces, Some general properties of probability	L1	T1,T2
	Conditional probability, Independent events and related problems.	L2	
	Discrete Random variables, Independent Random variables, the multinomial distribution	L3	
	Distribution Functions, Expectation, mean and variance	L4	
	Binomial distribution and its mean , variance and related problems,	L5	
	Binomial approximation to Poisson	L6	
	Moments, variance of sums,	L7	
	Correlations and related problems	L8	
	Tchebycheff's inequality and related problems	L9	
Module-II: Continuous Probability distribution (L4)	Continuous Random variables and their properties,	L10	T3,T4
	Distribution functions and density functions	L11	
	Normal distribution and its mean, variance,	L12	
	Standard normal distribution and related problems	L13	
	Exponential distribution and its mean, variance and related problems	L14	
	Gamma distribution and its mean, variance and related problems	L15	
Module-III: Bivariate distribution (4L)	Bivariate distributions and their properties	L16	T5
	Bivariate distribution of sums and quotients and related problems	L17	
	Conditional densities	L18	
	Statement and proof of Baye's theorem and its applications	L19	
Module-IV: Basic Statistics (6L)	Measures of Central tendency: Mean	L20	T6,T7
	Median and Mode	L21	
	Moments, skewness and related problems	L22	
	Kurtosis and related problems	L23	
	Evaluation of statistical parameters for the distributions-Binomial, Poisson and Normal	L24,L25	
	Correlation and regression	L26	
	Rank correlation and related examples	L27	
Module-V: Applied Statistics (6L)	Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves	L28,L29, L30	T8
	Test of significance: Large sample test for single proportion,	L31,L32, L33	
	difference of proportions, single mean	L34,L35	
	difference of means, and difference of standard deviations.	L36	
Module-VI: Small samples (4L)	Test for single mean, difference of means	L37	
	Correlation coefficients , test for ratio of variances	L38	
	Chi-square test for goodness of fit and independence of attributes.	L39,L40	

Mukherjee 05/07/2019
Signature of the H.O.D.

R. Patra 05/07/2019
Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Computer Science And Engineering Year: 1 st Paper Name: Mathematics-IIA Contact: 3L+1T Available Weeks: 10 Name of the Faculty: Mr. Rajesh Patra	Session: 2019- 2020 Semester: 2 nd Paper Code: BS-M201 Credit: 4 No. of Periods: 4 Designation: Assistant Professor
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (10L+1T)	Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	L1	T1
	Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	L2	
	Applications of Conditional Probability and Baye's Theorem, Related problems	L3	
	Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	L4	
	Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	L5	
	Bernoullian Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	L6	
	Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	L7	
	Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	L8	
	Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	L9	
	Properties of correlation Coefficient, Variance of sums of random variables, Related sums	L10	
Module-II: Continuous Probability Distribution s (3L+1T)	Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	L11	T2
	Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	L12	
	Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	L13	
Module-III: Bivariate Distribution s (4L+1T)	Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	L14	T3
	Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0$, $F(x, -\infty)=0$, $F(+\infty, +\infty)=1$ etc. (Statements only)	L15	
	Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	L16	
	Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples Determination of conditional distributions with examples	L17	

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-IV: Basic Statistics (7L+1T)	Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	L18	T4
	Frequency distribution and its representations, tabular and graphical, including histogram and ogives	L19	
	Determination of Mean, Median and Mode, related examples	L20	
	Range, Mean deviation, Standard deviation, Coefficient of variation	L21	
	Moments, skewness and kurtosis and their interpretations, related examples		
	Scatter diagram, Determination of correlation coefficient	L22	
	Determination of Rank correlation. Concept of linear regression	L23	
	Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	L24	
Module-V: Applied Statistics (7L+1T)	Principle of least squares, Fitting of straight lines by the method of least squares, Related sums	L25	T5
	Fitting of polynomials (2nd degree) and exponential curves	L26	
	Definitions of random sample, Parameter and statistic, Sampling distribution of a statistic, Sampling distribution of sample mean	L27	
	Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion		
	Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	L28	
	Large sample tests: use of CLT for testing single proportion, difference of two proportions	L29	
	Tests for single mean, difference of two means	L30	
	Tests for standard deviation and difference of standard deviations	L31	
Module-VI: Small samples (3L+1T)	Basic concepts of Student's t, Chisquare and F Distributions	L32	T6
	Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	L33	
	Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	L34	
	Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table		

Mukherjee 17/01/2020
Signature of the H.O.D.

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

R. Patra
17/01/2020
Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

Department: Electronics And Communications Engineering

Session: 2018- 2019 Year: 2nd
Semester: 3rd

Paper Name: Mathematics-III

Paper Code: M302

Contact: 3L+1T

Credit: 4

Available Weeks: 12

No. of Periods: 3

Name of the Faculty: Mr. Rajesh Patra

Designation: Assistant Professor

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
I Fourier Series and Fourier Transform	Introduction, Periodic functions: Properties, Even & Odd functions: Properties; Euler's Formulae for Fourier Series, Fourier Series for functions of period 2π , Fourier Series for functions of period $2L$	L1,L2 ,L3	T1,T2
	Dirichlet's conditions, Sum of Fourier series. Examples; Special wave forms: Square wave, Half wave Rectifier, Full wave Rectifier, Saw-toothed wave, Triangular wave.	L4,L5,L6	
	Theorem for the convergence of Fourier Series (statement only). Fourier Series of a function with its periodic extension; Half Range Fourier Series: Construction of Half range Sine Series, Construction of Half range Cosine Series.	L7,L8,L9	T3,T4
	Parseval's Identity (statement only). Examples; Fourier Integral Theorem (statement only), Fourier Transform of a function, Fourier Sine and Cosine Integral Theorem (statement only); Fourier Cosine & Sine Transforms. Fourier, Fourier Cosine & Sine Transforms of elementary functions.	L10,L11,L12	
	Properties of Fourier Transform: Linearity, Shifting, Change of scale, Modulation. Examples. Fourier Transform of Derivatives. Examples; Convolution Theorem (statement only), Inverse of Fourier Transform, Examples.	L13,L14	T5,T5

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
III Probability	Classical definition and its limitations. Axiomatic definition.	L15,L16 ,L17	T6, T7
	Elementary deduction, Frequency interpretation of probability, Addition rule. Compound and conditional problem, Independent events, Multiplication rule, Baye's theorem(only statement) and problems.	L18,L19,L20	
	Random Variables. (Discrete and continuous) mass and density function, expectation, variance and examples.	L21,L22,L23	T8, T9
	Probability distributions- Binomial, Poisson, Uniform , Exponential ,Normal distributions and related problems, Mean and variance – Binomial, Poisson and Normal distributions.	L24,L25,L26,L27	

P. Debnath 25.7.18
Signature of the HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

R. Patra 25/07/2018
Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES



LECTURE PLAN

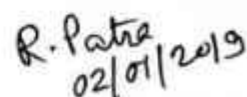
Department: Computer Science And Engineering	Session: 2018- 2019
Year: 1 st	Semester: 2 nd
Paper Name: Mathematics-IIA	Paper Code: BS-M201
Contact: 3L+1T	Credit: 4
Available Weeks: 10	No. of Periods: 4
Name of the Faculty: Mr. Rajesh Patra	Designation: Assistant Professor

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-I: Basic Probability (10L+1T)	Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	L1	T1
	Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	L2	
	Applications of Conditional Probability and Baye's Theorem, Related problems	L3	
	Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	L4	
	Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	L5	
	Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	L6	
	Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution		
	Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	L7	
	Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	L8	
	Properties of correlation Coefficient, Variance of sums of random variables, Related sums	L9	
Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	L10		
Module-II: Continuous Probability Distributions (3L+1T)	Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	L11	T2
	Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	L12	
	Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	L13	
Module-III: Bivariate Distributions (4L+1T)	Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	L14	T3
	Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0, (x, -\infty)=0, F(+\infty, +\infty)=1$ etc. (Statements only)	L15	
	Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	L16	
	Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples		
Determination of conditional distributions with examples	L17		

Module	Topics to be covered	Assigned no. of Lectures	Assigned no. of Tutorials
Module-IV: Basic Statistics (7L+1T)	Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	L18	T4
	Frequency distribution and its representations, tabular and graphical, including histogram and ogives	L19	
	Determination of Mean, Median and Mode, related examples	L20	
	Range, Mean deviation, Standard deviation, Coefficient of variation	L21	
	Moments, skewness and kurtosis and their interpretations, related examples		
	Scatter diagram, Determination of correlation coefficient	L22	
	Determination of Rank correlation, Concept of linear regression	L23	
	Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	L24	
Module-V: Applied Statistics (7L+1T)	Principle of least squares, Fitting of straight lines by the method of least squares, Related sums	L25	T5
	Fitting of polynomials (2nd degree) and exponential curves	L26	
	Definitions of random sample, Parameter and statistic, Sampling distribution of a statistic, Sampling distribution of sample mean	L27	
	Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion		
	Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	L28	
	Large sample tests: use of CLT for testing single proportion, difference of two proportions	L29	
	Tests for single mean, difference of two means	L30	
	Tests for standard deviation and difference of standard deviations	L31	
Module-VI: Small samples (3L+1T)	Basic concepts of Student's t, Chisquare and F Distributions	L32	T6
	Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	L33	
	Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	L34	
	Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table		

 2.1.19
Signature of the H.O.D.

H. O. D.
Basic Science & Humanities Department
H. E. T. Co. Hooghly.

 02/01/2019

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING

COURSE PLAN



Department: Civil Engineering
 Year: 2nd
 Paper Name: Solid Mechanics
 Contact/week: 2
 Available Weeks: 12
 Name of the Faculty: Shibasish Deb

Session: 2018-19
 Semester: 3rd
 Paper Code: CE301
 Credit: 3
 No. of Periods available: 24
 Designation: Asst. Professor

Module	Topics to be covered	Assigned Number of Lectures
3	Concepts of redundancy	1
	Analysis by method of joints	1
	Analysis by method of joints- Numericals	1
	Analysis by method of joints- Numericals	1
	Analysis by method of sections	1
	Analysis by method of sections- Numericals	1
	Analysis by method of sections- Numericals	1
	Introduction to two Dimensional problems for like stresses	1
	Introduction to two Dimensional problems for unlike stresses	1
	maximum shear stresses, shear stress combined with like/unlike stresses	1
	Numericals	1
	Numericals	1
	Mohr's circle of stresses, construction of Mohr's circle	1
	Mohr's circle of stresses, construction of Mohr's circle	1
4	Hoop stress and meridional stress	1
	Numericals	1
	volumetric changes and related numericals	1
	Pure torsion, torsion of circular solid shaft	1
	torsion of circular hollow shaft	1
	torsional equation, torsional rigidity	1
	Numericals	1
	closed coil helical springs	1
	Numericals	1
	Fundamentals of Column and criteria for stability in equilibrium	1
	Column buckling theory, Euler's load for columns with different end conditions	1
	limitations of Euler's theory – problems	1
	Rankines formula	1
Secant formulae for eccentric loading in columns	1	

J. Chattopadhyay
 Signature of the HOD/DIC

Shibasish Deb
 Signature of the Faculty





HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF CIVIL ENGINEERING
COURSE PLAN



Department: Civil Engineering
 Year: 3rd
 Paper Name: Design of Steel Structures
 Contact/week: 2
 Available Weeks: 12
 Name of the Faculty: Shibasish Deb

Session: 2018-19
 Semester: 6th
 Paper Code: CE602
 Credit: 3
 No. of Periods available: 24
 Designation: Asst. Professor

Module	Topics to be covered	Assigned Number of Lectures
3	Introduction to tension members	1
	Effective area and net effective area	1
	Concepts of shear lag	1
	Is code provisions	1
	Design Problems	1
	Design Problems contd...	1
	Design Problems contd...	1
5	Permissible stresses in bending, compression and tension.	1
	Lateral Torsional Buckling	1
	Laterally supported beams and unsupported beams; IS Code Provisions	1
	Web Buckling and Web crippling	1
	Design Problems on Laterally supported beams	1
	Design Problems on Laterally unsupported beams	1
	Design of Purlins; IS Code Provisions	1
Design Problems on Purlin beams	1	
6	Introduction to Plate Girder	1
	Design steps of Plate Girder	1
	Design steps of Plate Girder contd...	1
	IS Code Provisions	1
	Design of Stiffeners	1
	Design Problem on Plate Girder	1
Design Problem on Plate Girder contd...	1	

A. Chattopadhyay
 Signature of the HOD/DIC

Shibasish Deb.
 Signature of the Faculty





HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF CIVIL ENGINEERING



COURSE PLAN

Department: Civil Engineering
Year: 2nd
Paper Name: Energy Science and Engineering
Contact/week: 1
Available Weeks: 12
Name of the Faculty: Jayanta Banerjee

Session: 2019-20
Semester: 3rd
Paper Code: ESC211
Credit: 2
No. of Periods available: 12
Designation: Assit. Professor

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
1	Introduction, different types of energies	1	
	Principles, basis, energy reserves and consumption	1	
	Energy system: overview	1	
2s	Energy system: thermal, hydrel, nuclear and solar	1	
	Pros & cons of thermal, hydrel,nuclear & solar	1	
	Energy system: wind,bio-mass, geothermal & wind	1	
	Energy storage	1	
	Hydrogen energy	1	
4	Solar energy	1	
	Civil engineering Project: hydro power plant	1	
	Coal mining technology	1	
	Off-shore oil platform	1	

A. Chatterjodhyay

Signature of the HOD/DIC



Jayanta Banerjee

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE DEPARTMENT OF CIVIL ENGINEERING



COURSE PLAN

Department: Civil Engineering
Year: 2nd
Paper Name: Introduction to Fluid Mechanics
Contact/week: 2
Available Weeks: 12
Name of the Faculty: Jayanta Banerjee

Session: 2019-20
Semester: 4th
Paper Code: CE(ES)401
Credit: 2
No. of Periods available: 24
Designation: Assit. Professor

Module	Topics to be covered	Assigned Number of Lectures
1	Properties of fluids: Fluid – definition, distinction between solid and fluid - Units and dimensions	1
	Properties of fluids - density, specific weight, specific volume, specific gravity	1
	Viscosity, compressibility, vapour pressure, surface tension	1
	Capilarity, compressibility and problems	1
2	Fluid statics: Pressure at a point, absolute pressure, gauge pressure vacuum pressure.	1
	Basic equation for pressure field, pressure variation in a fluid at rest- incompressible fluid, compressible fluid.	1
	Pressure measurements by manometers – general, inclined, inverted, micro-manometer;	1
	Pressure and forces on submerged planes and curved surfaces, centre of pressure.	1
	Continuation of previous class	1
	Buoyancy and floatation, Stability of submerged and floating bodies, metacentric height.	1
4	Bernoulli Equation, Kinetic energy head, potential energy head and pressure energy head, total energy head,	1
	Pitot tube, Examples of use of Bernoulli Equation, measurement of flows - venturimeter	1
5	Dimensional Analysis: Buckingham Pi Theorem, determination of Pi terms.	1
	Model analysis: correlation of experimental data, examples.	1
	Problems on Buckingham pi theorem	1
8	Hydraulic Machines: Basics of hydraulic machines, PPT on Turbine	1
	Centrifugal pump specific speed of pumps	1
	Reciprocating pump, problems	1
	General theory of turbo machine	1
	Francis and Kaplan turbines	2

A. Chattopadhyay
 Signature of the HOD/DIC

Jayanta Banerjee
 Signature of the Faculty





HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE PLAN

Department: Civil Engineering	Session: 2020- 2021
Year: 3 rd	Semester: 5 th
Paper Name: Foundation Engineering Contact: 3L+1T	Paper Code: CE-501 Credit: 4
Available Weeks: 12	No. of Periods: 10
Name of the Faculty: Tanumoy Ghosh	Designation: Asst. Prof

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	Introduction to Earth pressure theories and plastic equilibrium of soil with earth pressure at rest	L1	T1
1	Active & passive earth pressure with detailed problems	L2	T1
1	Rankine's & Coulomb's earth pressure theories	L3	T1
1	Wedge method of analysis	L4	T1
1	Introduction to Site investigation & Soil exploration	L5	T1
1	Planning of sub-surface exploration	L6	T1
4	Methods, Sampling, Samples of sub-surface exploration	L7	T2
4	Insitu tests: SPT, SCPT, DCPT	L8	T2
4	Insitu tests: Field Vane Shear and Plate load test.	L9	T2
4	Numerical problems on Soil exploration	L10	T2

A. Chattopadhyay

Signature of the HOD

Tanumoy Ghosh

Signature of the Faculty





HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE DEPARTMENT OF CIVIL ENGINEERING



COURSE PLAN

Department: Civil Engineering

Year: 3rd

Paper Name: Construction Engineering & Management

Contact/week: 2

Available Weeks: 12

Name of the Faculty: Jayanta Banerjee

Session: 2020-21

Semester: 6th

Paper Code: CE(PC)601

Credit: 2

No. of Periods available: 24

Designation: Assit. Professor

Module	Topics to be covered	Assigned Number of Lectures
1	Planning: General consideration, Definition of aspect, prospect.	1
	Planning : Roominess, grouping, circulation, Privacy.	1
2	Regulation and Bye laws: Bye Laws in respect of side space, Back and front space..	1
	Covered areas, height of building, ground coverage & FAR	1
	Lavatory blocks , ventilation, Requirements for stairs, lifts in public assembly building, offices	1
	Problems on building bye-laws	1
3	Fire Protection: General requirements in public, assembly, office buildings,	1
	Classification buildings, fire loads, fire zones	1
	Fire fighting arrangements in buildings and planning .	1
4	Planning & Scheduling of constructions Projects: PERT & CPM- definition, objective, phases ; activities, events and network	1
	Properties, drawing & numbering of network	1
	PERT – time estimate, critical path & problem	1
	S.D. ,variance & probability of meeting schedule time	1
	CPM – difference between pert & cpm, activity time estimate.	1
	Different types of floats and relation.	1
	Problems of net work analysis.	1
	Bar diagrams and problems	1
5	Construct ion Methods basics: types of foundations & construction methods	1
	Conventional method of construction of common building	1
	Modular & block wall construction etc.	1

A. Chattopadhyay

Signature of the HOD/DIC

Jayanta Banerjee

Signature of the Faculty





HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE DEPARTMENT OF CIVIL ENGINEERING



COURSE PLAN

Department: Civil Engineering

Year: 3rd

Paper Name: Structural Analysis – I

Contact/week: 2L+1T

Available Weeks: 12

Name of the Faculty: Prof. Arpita Das

Session: 2021-22

Semester: 5th

Paper Code: CE(PC)503

Credit: 03

No. of Periods available: 02

Designation: Assistant Professor

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
1	Concept of static and kinematic indeterminacy, Determination of degree of indeterminacy for different types of structures.	1	
	Example on Degree of Freedom		1
	Example on Static Indeterminacy of structure	1	
	Theorem of minimum potential energy, law of conservation energy, principle of virtual work, the first and second theorems of Castiglano, Betti's law, Clark Maxwell's theorem of reciprocal deflection	1	
2	Analysis of Portal Frames	1	
	Concept of Three hinged arches and analysis of three hinge arch	1	1
	Problem on three hinge arch	1	
	Concept of Cable and analysis of cable structure Problem on cable	1	1
4	Concept of Influence Line Diagram	1	
	Influence Line Diagram of Statically determinate beams	1	
	Problem on ILD of Statically determinate beams		1
	Criteria for maximum absolute shear.	1	
	Criteria for maximum moments	1	
	Problem to find out the criteria for maximum and absolute maximum moments and shear		1
	Influence Line Diagram of trusses under series of concentrated Influence Line Diagram of trusses under series of uniformly distributed rolling loads. Problem on truss for ILD	1 1 1	1
6	Concept of Influence Line Diagram for Indeterminate Structures	1	
	Theory of Muller – Breslau principle.	1	
	Method of application of Muller – Breslau principle	1	
	Analysis of Influence Line Diagram for Indeterminate Structures		1
	Analysis of Influence Line Diagram for Indeterminate Structures		1

A. Chattopadhyay

Signature of the HOD/DIC

Arpita Das.

Signature of the Faculty





HIGHER ENGINEERING & TECHNOLOGY COLLEGE DEPARTMENT OF CIVIL ENGINEERING



COURSE PLAN

Department: Civil Engineering Year: 3 rd Paper Name: Design of Steel Structures Contact/week: 2L+0T Available Weeks: 14 Name of the Faculty: Prof. Arpita Das Professor	Session: 2021-22 Semester: 5 th Paper Code: CE(PC)604 Credit: 02 No. of Periods available: 02 Designation: Assistant
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Number of Lectures
1	Materials and Specification of Rolled steel sections, mechanical properties of steel and their specifications for structural use. Type of Steel structures using tubular, rectangular and square section	1
2	Riveted, welded and bolted connections including High strength friction grip bolted joints.	1
	Types of riveted & bolted joints, assumptions, failure of joints, efficiency of joints	1
	Design of bolted connection for axial load and Code (IS 800:2007) provision	1
	Problem on strength of joint and number of bolt required,	1
	Problem on Efficiency of joint	1
	Code provision of Frictional grip type bolt/Ling joint /Packing plate etc	1
	Concept and Design criteria of welded joints for axial load.	1
	Design of truss member	1
	Example on design of welded joints for axial load	1
	Concept of Eccentric connection	1
	Riveted & bolted joints subjected to torsion & shear	1
	Riveted & bolted joints subjected to tension & shear,	1
	Example on Riveted & bolted joints subjected to torsion & shear	1
	Example on Riveted & bolted joints subjected to tension & shear	1
Design of riveted, bolted & welded connection.	1	
4	Introduction of Design of Compression members	1
	Effective lengths about major & minor principal axes, IS code provisions.	1
	Permissible stresses, Design rules, Design of one component,	1
	Design of two components and built up compression members under axial load.	1
	Examples. Built up columns under eccentric loading: Design of lacing	1
	Design of batten plates,	1
	Different types of Column Bases- Slab Base ,	1
	Gusseted Base design, Connection details	1
7	Concept of Gantry Girder	1
	Load calculation of Gantry Girder	1
	Gantry girder considering lateral buckling – IS code provisions	1
	Example on Gantry girder considering lateral buckling	1

for A. Chattopadhyay

Dr. RAJDIP PAUL

Signature of the HOD/DIC

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

Arpita Das .

Signature of the Faculty



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



COURSE PLAN

Department: Civil Engineering
Year: 2nd
Paper Name: Engineering Mechanics
Contact/week: 2
Available Weeks: 12
Name of the Faculty: Jayanta Banerjee

Session: 2022-23
Semester: 3rd
Paper Code: CE(ES) 301
Credit: 4
No. of Periods available: 24
Designation: Assit. Professor

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
2	Friction: definition, types, laws, limiting friction	1	
	Angel of friction and repose, motion on different planes.	1	
	Problem practice		1
	Wedge friction & Screw Jack	1	
4	Centroid & centre of gravity: definition, CM of simple geometrical lamina	1	
	First principle for determination of composite lamina and application	1	
	Area moment of inertia: definition, application	1	
	Theorems of M.I. application	1	
	Mass M.I. of circular plate, cylinder.....	1	
6	Review of particle dynamics: Rectilinear motion	1	
	Motion under gravity inst . line.	1	
	Projectile motion	1	
	Relative and constrained motion	2	
	Newton's 2 nd law, Impulse-momentum impact	1	
	Work, kinetic energy, power, potential energy	1	
	Mechanical vibrations: basic terminology, free & forced vibrations, resonance.....	1	
	Derivation for frequency & amplitude of free vibrations without damping...	2	
	Types pendulum, use of simple pendulum, compound and torsion pendulums	1	
	Problem practice		1

for A. Chattopadhyay

Dr. RAJDIP PAUL

Signature of the HOD/DIC

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

Jayanta Banerjee

Signature of the Faculty



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



COURSE PLAN

Department: Civil Engineering	Session: 2022-23
Year: 3rd	Semester: 6th
Paper Name: Construction Engineering & Management	Paper Code: CE(PC)601
Contact/week: 2	Credit: 2
Available Weeks: 12	No. of Periods available: 24
Name of the Faculty: Jayanta Banerjee	Designation: Assit. Professor

Module	Topics to be covered	Assigned Number of Lectures
1	Planning: General consideration, Definition of aspect, prospect.	1
	Planning : Roominess, grouping, circulation, Privacy.	1
2	Regulation and Bye laws: Bye Laws in respect of side space, Back and front space,.	1
	Covered areas, height of building, ground coverage & FAR	1
	Lavatory blocks , ventilation, Requirements for stairs, lifts in public assembly building, offices	1
	Problems on building bye-laws	1
3	Fire Protection: General requirements in public, assembly, office buildings,	1
	Classification buildings, fire loads, fire zones	1
	Fire fighting arrangements in buildings and planning .	1
4	Planning & Scheduling of constructions Projects: PERT & CPM- definition, objective, phases ; activities, events and network	1
	Properties, drawing & numbering of network	1
	PERT – time estimate, critical path & problem	1
	S.D. ,variance & probability of meeting schedule time	1
	CPM – difference between pert & cpm, activity time estimate.	1
	Different types of floats and relation.	1
	Problems of net work analysis.	1
Bar diagrams and problems	1	
5	Construct ion Methods basics: types of foundations & construction methods	1
	Conventional method of construction of common building	1
	Modular & block wall construction etc.	1

for A. Chattopadhyay
Dr. RAJDIP PAUL
Signature of the HOD/DIC

H.O.D.
Civil Engineering
Hooghly Engineering & Technology College

Jayanta Banerjee
Signature of the Faculty



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



LECTURE PLAN

Department: Mechanical Engineering	Session: 2022-2023
Year: 2nd	Semester: 4 th
Paper Name: Strength of Materials	Paper Code: PC-ME403
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 10	No. of Periods: 40
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	1. Deformation in solids, stress and strain, Hooke's Law 2. Tension, Compression, shear stresses 3. Linear, volumetric and shear strains	L1-L3	T1 T1
	4. Elastic constants and their relations 5. Principal stresses and Principal planes 6. Mohr's circle	L4 to L6	T1
2	1. Beams, types of beams (cantilever, simply supported and over hanging beams), types of beam support and types of load.	L1 to L2	T1 -T2
	2. Shear force and bending moment diagram	L3 to L4	
	3. Theory of bending of beams, bending stress distribution and neutral axis, shear stress distribution.	L5 to L6	
4	1. Torsion of a circular shaft, Stresses and deformation in circular and hollow shafts 2. Stepped shaft, deflection of shafts fixed at both ends	L1 to L3	T1
	Concept of closed and open coiled helical springs, Stresses and deflection of helical springs under axial pull.	L4 to L5	
5	1. Axial and hoop stresses in cylinders subjected to internal pressure 2. Deformation in spherical shells subjected to internal pressure	L1 to L3	T1- T2
	3. Deformation of thin and thick cylinders	L4-L5	

3	1. Moment of inertia about an axis and polar moment of inertia 2. Deflection of a beam using double integration method 3. Computation of slope and deflection in beams 4. Maxwell's reciprocal theorem 5. Buckling of columns, Euler's theory 6. Critical loads for different types of constraints.,	L1 L2 L3 L4 L5 L6	T1-T2
---	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------	-------

BG 14.05.23
Signature of the DIC

Semin Ghosh 14.05.2023
Signature of the Faculty

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



COURSE PLAN

Department: Mechanical Engineering Year: 4 th Paper Non-Conventional Energy Resources Contact: 3 (3L) Available Weeks: 11 Name of the Faculty: Samir Ghosh	Session: 2022-2023 Semester: 7 th Paper Code: OE-ME701D Credit: 3 No. of Periods: 33 Designation: Asst. Prof.
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	Principles of Renewable Energy: 1. The history of energy scene, energy of the future 2. Sustainable energy, development and role of renewable energy 3. Scientific principles of renewable energy	L1 L2 L3	
2	Review of principles of thermodynamics, fluid dynamics and heat transfer	L1	
3	Solar Radiation: 1. Sun-Earth geometry 2. Extraterrestrial solar radiation 3. Measurement and estimation of solar radiation	L1 – L3	
4	Solar Water Heating: 1. Flat plate collectors and heat transfer analysis testing 2. Evacuated tube collectors	L1-L3 L4	
5	Other solar thermal applications 1. Air heaters 2. water desalination, space cooling 3. solar contractors, solar ponds	L1 L2 L3	
6	Photovoltaic Generation: 1. Photon absorption at silicon p-n junction 2. Solar cell, applications and systems	L1- L2 L3-L4	
7	Wind Power: 1. Turbine types and terms 2. Mechanical & Electrical power from wind turbines	L1- L3	

8	Biomass & Bio fuels 1. Use of biomass 2. Classification and use of bio-fuels	L1-L2	
9	Wave power & Tidal power basic concepts	L1-L2	
10	1. Ocean thermal energy conversion, 2. Geothermal Energy 3. Energy Storage	L1-L4	

88 09.07.22

Signature of the DIC

Senior Asst 9.7.22

Signature of the Faculty

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



COURSE PLAN

Department: Mechanical Engineering

Year: 3rd

Paper Name: I.C. Engines and Gas Turbines

Contact: 3 (3L)

Available Weeks: 13

Name of the Faculty: Samir Ghosh

Session: 2021-2022

Semester: 6th

Paper Code: PE-ME 601A

Credit: 3

No. of Periods: 38

Designation: Asst. Prof.

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	1. Introduction: Basic Engine components and Nomenclature, 2. Classification of Engines, The working principle of Engines, 3. Comparison of 2-Stroke and 4-Stroke Engines; CI, and SI Engines, Ideal and Actual Working Cycles and their analysis 4. Valve timing Diagram. 5. Fuels: Fossil fuels, Chemical structure of Petroleum, Properties of SI and CI Engine Fuels, 6. Fuel Ratings; Octane Number, Cetane Number.	L1 to L6	
2	Carburetors & Fuel Injection: 1. Air fuel mixture requirements, Construction and Working of Simple Carburetor, 2. Calculation of Air-Fuel Ratio, Parts of Carburetor. 3. Requirement of Injection Systems, Classification of Injection Systems 4. Fuel Feed pump, Injection Pumps, Nozzles and Fuel Injector, 5. Injection in SI and CI Engines. Working principles of Governors Combustion and Ignition Systems in SI and CI Engines 6. Stages of combustion Normal and abnormal combustion in SI and CI engines 7. Detonation and Knocking	L1 to L7	
3	Performance Parameters for IC engines: 1. Engine power, Engine efficiencies 2. Performance Characteristics, variables Effecting performance Characteristics 3. Methods of improving engine performance 4. Heat balance Modern Automotive Engines; 5. Changes in fuel injection systems in SI and CI engines, Common rail direct injection system, system 6. Gasoline direct injection, Variable valve technology, 7. A brief review of design changes to achieve high efficiency	L1 to L7	

5	<p>Gas Turbine:</p> <ol style="list-style-type: none"> 1. Introduction to gas turbines 2. Development, classification and application of gas turbines 3. Ideal and actual cycles, 4. Effect of inter-cooling and Reheating 5. Effect of regeneration 6. Effect of Combined cycle and co-generation 	L1 to L6	
6	<p>Gas turbine Cycles for Aircraft Propulsion:</p> <ol style="list-style-type: none"> 1. Simple Turbojet Cycle, 2. The turboprop engine, 3. Thrust augmentation, 4. Gas turbine combustion systems, 5. Combustion chamber designs, 6. Gas Turbine Emissions. 	L1 to L6	
4	<p>Alternate Fuels in IC Engines:</p> <ol style="list-style-type: none"> 1. Needs for use of alternate fuels 2. Use of alcohol fuels, biodiesel 3. Biogas and hydrogen's in engines 	L1 to L3	

89 04.02.22
Signature of the DIC

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

Sanir Ghosh 04.02.22
Signature of the Faculty



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



LECTURE PLAN

Department: Mechanical Engineering	Session: 2021-2022
Year: 2nd 3rd	Semester: 3rd 5th
Paper Name: Kinematics and Theory of Machines	Paper Code: PC-ME 503
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 11	No. of Periods: 44
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	Classification of mechanisms:- 1. Basic kinematic concepts and definitions 2. Degree of freedom, mobility Grashof's 3. Kinematic inversions of four bar chain and slider crank chains. 4. Limit positions Mechanical advantage-Transmission angle Description of some common mechanisms 5. Quick return mechanism, straight line generators Universal Joint- Rocker mechanisms.	L1-L5	T1
3	1. Classification of cams and followers Terminology and definitions 2. Displacement diagrams Uniform velocity, parabolic, simple harmonic and cycloidal motions 3. Derivatives of follower motions- Specified contour cams- circular and tangent cams- 4. Pressure angle and undercutting, sizing of cams, graphical and analytical disc cam profile synthesis for roller and flat face followers.	L1- L4	T1
8	Governors: 1. Use and classification; Study and analysis of Porter governor 2. Study and analysis of Proell and Wilson-Hartnell governors; 3. Sensitiveness, stability, isochronism, hunting, effort and	L1-L3	T1
9	Flywheel- Inertia force and inertia torque in reciprocating engine, correction couple (torque), and Turning moment diagram and flywheel design.	L1 to L3	

7	Balancing of Reciprocating and Rotating Masses- Static balancing, Unbalance of force or moment, Dynamic balancing of rotating masses- graphical and analytical methods; Swaying couple; Hammer blow.	L1-L3	T1
5	Surface contacts- sliding and rolling friction- friction drives- bearings and lubrication, Friction clutches- Belt and Rope drives-Friction in brakes.	L1-L4	T1
4	Involute and cycloidal gear profiles, gear parameters, fundamental law of gearing and conjugate action, spur gear contact ratio and interference/undercutting- helical, bevel, worm, rack & pinion	L1-L4	T1
6	Vibrations- Free and forced vibration of un-damped and damped Single DOF systems, Resonance, Transmissibility Ratio, Effect of damping, Vibration Isolation, Critical Speed of Shafts.	L1-L4	T1
10	Gyroscope- Gyroscopic couple and pre-cessional motion, Effect of gyroscopic couple on aero plane and ship, Stability of two wheeled and four wheel vehicles taking turn.	L1-L2	
2	Displacement, velocity and acceleration analysis of simple mechanisms, graphical velocity analysis using instantaneous centers, velocity and acceleration analysis using loop closure equations- kinematic analysis of simple mechanisms- slider crank mechanism dynamics- Coincident points- Corioli's component of acceleration- introduction to linkage synthesis- three position graphical synthesis for motion and path generation.	L1-L5	T1

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College
89 03.09.21

Signature of the DIC

S. Ghosh 3.09.21
Signature of the Faculty



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



LECTURE PLAN

Department: Mechanical Engineering	Session: 2020-2021
Year: 2nd	Semester: 4 th
Paper Name: Strength of Materials	Paper Code: PC-ME403
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 10	No. of Periods: 40
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	1. Deformation in solids, stress and strain, Hooke's Law 2. Tension, Compression, shear stresses 3. Linear, volumetric and shear strains	L1-L3	T1
	4. Elastic constants and their relations 5. Principal stresses and Principal planes 6. Mohr's circle	L4 to L6	T1
2	1. Beams, types of beams (cantilever, simply supported and over hanging beams), types of beam support and types of load.	L1 to L2	T1 -T2
	2. Shear force and bending moment diagram	L3 to L4	
	3. Theory of bending of beams, bending stress distribution and neutral axis, shear stress distribution.	L5 to L6	
4	1. Torsion of a circular shaft, Stresses and deformation in circular and hollow shafts 2. Stepped shaft, deflection of shafts fixed at both ends	L1 to L3	T1
	Concept of closed and open coiled helical springs, Stresses and deflection of helical springs under axial pull.	L4 to L5	
5	1. Axial and hoop stresses in cylinders subjected to internal pressure 2. Deformation in spherical shells subjected to internal pressure	L1 to L3	T1- T2
	3. Deformation of thin and thick cylinders	L4-L5	

3	<ol style="list-style-type: none"> 1. Moment of inertia about an axis and polar moment of inertia 2. Deflection of a beam using double integration method 3. Computation of slope and deflection in beams 4. Maxwell's reciprocal theorem 5. Buckling of columns, Euler's theory 6. Critical loads for different types of constrains., 	L1 L2 L3 L4 L5 L6	T1-T2
---	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------	-------

8A 05.02.22
Signature of the DIC

P. Ghosh 05.02.22
Signature of the Faculty

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



LECTURE PLAN

Department: Mechanical Engineering	Session: 2020- 2021
Year: 2nd	Semester: 3 rd
Paper Name: Kinematics and Theory of Machines	Paper Code: PC-ME 503
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 12	No. of Periods: 24
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	Classification of mechanisms:- 1. Basic kinematic concepts and definitions 2. Degree of freedom, mobility Grashof's 3. Kinematic inversions of four bar chain and slider crank chains. 4. Limit positions Mechanical advantage-Transmission angle Description of some common mechanisms 5.Quick return mechanism, straight line generators Universal Joint- Rockermechanisms.	L1-L5	T1
3	1. Classification of cams and followers Terminology and definitions 2. Displacement diagrams Uniform velocity, parabolic, simple harmonic and cycloidal motions 3. Derivatives of follower motions- Specified contour cams- circular and tangent cams- 4. Pressure angle and undercutting, sizing of cams, graphical and analytical disc cam profile synthesis for roller and flat facefollowers.	L1- L4	T1
8	Governors: 1. Use and classification; Study and analysis of Porter governor 2. Study and analysis of Proell and Wilson-Hartnell governors; 3. Sensitiveness, stability, isochronism, hunting, effort and	L1-L3	T1
9	Flywheel- Inertia force and inertia torque in reciprocating engine, correction couple (torque), and Turning moment diagram and flywheeldesign.	L1 to L3	

7	Balancing of Reciprocating and Rotating Masses- Static balancing, Unbalance of force or moment, Dynamic balancing of rotating masses- graphical and analytical methods; Swaying couple; Hammer blow.	L1-L3	T1
5	Surface contacts- sliding and rolling friction- friction drives- bearings and lubrication, Friction clutches- Belt and Rope drives-Friction in brakes.	L1-L4	T1
4	Involute and cycloidal gear profiles, gear parameters, fundamental law of gearing and conjugate action, spur gear contact ratio and interference/undercutting- helical, bevel, worm, rack & pinion	L1-L4	T1
6	Vibrations- Free and forced vibration of un-damped and damped Single DOF systems, Resonance, Transmissibility Ratio, Effect of damping, Vibration Isolation, Critical Speed of Shafts.	L1-L4	T1
10	Gyroscope- Gyroscopic couple and pre-cessional motion, Effect of gyroscopic couple on aero plane and ship, Stability of two wheel and four wheel vehicles taking turn.	L1-L2	
2	Displacement, velocity and acceleration analysis of simple mechanisms, graphical velocity analysis using instantaneous centers, velocity and acceleration analysis using loop closure equations- kinematic analysis of simple mechanisms- slider crank mechanism dynamics- Coincident points- Corioli's component of acceleration- introduction to linkage synthesis- three position graphical synthesis for motion and path generation.	L1-L5	T1

12.08.20

Signature of the DIC

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

Samin Ghosh

Signature of the Faculty

12.08.20



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



LECTURE PLAN

Department: Mechanical Engineering	Session: 2019- 2020
Year: 2nd	Semester: 4 th
Paper Name: Strength of Materials	Paper Code: PC-ME403
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 10	No. of Periods: 40
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	1. Deformation in solids, stress and strain, Hooke's Law 2. Tension, Compression, shear stresses 3. Linear, volumetric and shear strains	L1-L3	T1
	4. Elastic constants and their relations 5. Principal stresses and Principal planes 6. Mohr's circle	L4 to L6	T1
2	1. Beams, types of beams (cantilever, simply supported and over hanging beams), types of beam support and types of load.	L1 to L2	T1 -T2
	2. Shear force and bending moment diagram	L3 to L4	
	3. Theory of bending of beams, bending stress distribution and neutral axis, shear stress distribution.	L5 to L6	
4	1. Torsion of a circular shaft, Stresses and deformation in circular and hollow shafts 2. Stepped shaft, deflection of shafts fixed at both ends	L1 to L3	T1
	Concept of closed and open coiled helical springs, Stresses and deflection of helical springs under axial pull.	L4 to L5	
5	1. Axial and hoop stresses in cylinders subjected to internal pressure 2. Deformation in spherical shells subjected to internal pressure	L1 to L3	T1- T2
	3. Deformation of thin and thick cylinders	L4-L5	

3	1. Moment of inertia about an axis and polar moment of inertia 2. Deflection of a beam using double integration method 3. Computation of slope and deflection in beams 4. Maxwell's reciprocal theorem 5. Buckling of columns, Euler's theory 6. Critical loads for different types of constrains.,	L1 L2 L3 L4 L5 L6	T1-T2
---	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------	-------

16.01.20

Signature of the D/O

H.O.D.
Mechanical Engineering
 Hooghly Engineering & Technology College

Sisir Ghosh 16.01.2020

Signature of the Faculty



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



LECTURE PLAN

Department: Mechanical Engineering	Session: 2019-2020
Year: 3 rd	Semester: 3 rd
Paper Name: Dynamics of Machines	Paper Code: ME501
Contact: 3L	Credit: 3
Available Weeks: 11	No. of Periods: 33
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
6	Governors: Use and classification; Study and analysis of Porter, Proell and Wilson-Hartnell governors; Sensitiveness, stability, isochronism, hunting, effort and power of governors; Controlling	L1 to L4	
4	Inertia force and inertia torque in reciprocating engine; Equivalent dynamical system; correction couple (torque); Turning moment diagram and flywheel design.	L1 to L5	
1A	Vibration: Definition & types of vibration; Differential equations of vibratory motions (longitudinal)	L1	
	Differential equations of vibratory motions (torsional); Natural frequency of free longitudinal vibration Equilibrium method, Energy method (Rayleigh's maximum energy principle); Effect of inertia in longitudinal vibration; Natural frequency of free transverse vibration of a beam due to point loads - Rayleigh's method.	L1 to L4	
1B	Whirling of shaft, synchronous whirling; critical speed - Dunkerley's method.	L1 to L2	
2	Free damped vibration; Damping factor; Logarithmic decrement.	L1 to L2	
3	Forced vibration, concept of under damped, critically damped and over damped system; Dynamic magnifier (magnification factor); Vibration isolation and transmissibility.	L1 to L3	

S. Ghosh

5	Balancing: Static balancing; Dynamic balancing of rotating masses - graphical and analytical methods; Balancing of inline single cylinder and four cylinder engine; Balancing of symmetric two cylinders V-engine; Swaying couple; Hammer blow.	L1 to L7	
7	Gyroscope: Gyroscopic couple and precessional motion; Effect of gyroscopic couple on aeroplane and ship; Stability of two wheel and four wheel vehicles taking turn.	L1 to L2	

SG 05.07.19

Signature of the DIC

Samer Ghosh 05.07.19

Signature of the Faculty

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



COURSE PLAN

Department: Mechanical Engineering Year: 4 th Paper Quality & Reliability Engineering Contact: 3 (3L) Available Weeks: 11 Name of the Faculty: Samir Ghosh	Session: 2018- 2019 Semester: 8 th Paper Code: ME802D Credit: 3 No. of Periods: 33 Designation: Asst. Prof.
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	Management of Product Quality 1. Evolution of Quality Control, Changing Quality Concepts; 2. Modern Concept of Total Quality Management; 3. Contribution of Quality masters (Deming, Juran, Crosby, Ishikawa, Taguchi);	L1 L2 L3	
2	Creating Quality by Design 1. Assessment of Customer's needs; 2. Formulation of Design Specifications; 3. Standardization; Costs of Quality; 4. Quality Circles; 5-S concept;	L1 to L4	
3	Total Quality Management 1. Concept of Total Quality, Difference between "Quality" Management and "Total Quality" Management, 2. Total quality maintenance, total quality in service sector 3. Role of Customer and People in Total Quality Management 4. Steps for Quality Improvement, Kaizen; Organizing for effective Quality Management;	L1 – L3	
4	Process Control 1. Control Charts; Statistical Quality Control Tools 2. Statistical Process Control and Process Capability 3. Zero defect programme; Six – Sigma approach	L1 L2 L3	
5	Quality Management Systems ISO 9000 Series of Standard; ISO 14000 Series of Standards;	L1 L2- L3	

6	Strategic tools and Techniques for TQM 1. Need for Tools and Techniques in TQM, Commonly used Tools for TQM 2. Approaches and Deployment of Tools for Quality Planning 3. Quality Function Deployment (QFD), concurrent engineering; 4. Tools for continuous Improvement – Deming’s Plan – Do – Check – Act (PDCA) cycle, 5. Poka – Yoke (Mistake – Proofing), Taguchi’s Quality Loss Function.	L1 L2 L3 L4 L5	
7	Reliability 1. Concept and definition of reliability; Reliability Parameters: 2. Reliability as a function of time, failure rate as a function of time, constant failure rate, 3. Mean time to failure (MTTF), MTTF as a function of failure rate, 4. Mean time between failure (MTBF), Mean down time (MDT) 5. Maintainability & availability, increasing failure rate, bath-tub curve;	L1 to L5	
8	Risk Assessment & Reliability in Design 1. Causes of failures, Failure modes & Effects Analysis (FMEA) 2. Faulty tree analysis (FTA), Tribological failure and monitoring techniques; 3. Design based on reliability, redundancy in design.	L1-L3	

H.O.D.
Mechanical Engineering
 Hooghly Engineering & Technology College

SA 02.01.19
 Signature of the DIC

S. Ghosh 02.01.2019
 Signature of the Faculty



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING



LECTURE PLAN

Department: Mechanical Engineering Year: 2nd Paper Name: Strength of Materials Contact: 3(2L) Available Weeks: 1 p Name of the Faculty: Samir Ghosh	Session: 2018- 2019 Semester: 3 rd Paper Code: ME302 Credit: 3 No. of Periods: 24 33 Designation: Asst. Prof.
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1A,B,C	Concept of mechanics of deformable solids; concept of stress developed against external force/pressure; brief review of normal and shearing stress and strain;	L1,	
	Deformation of axially loaded members, Statically determinate and indeterminate problems. Related numerical problems	L1 to L4	
	Strain energy in tension and compression	L1	
3	Stresses in beams; shear force (SF), axial force and bending moment (BM); differential relations for BM, SF and load; SF and BM diagrams; bending stresses in straight beams – symmetric loading; stresses in beams of various cross sections; Stresses in built-up beams and beams of different materials. Problems related to SF, BM and bending stress	L1 to L7	
4	Torsion of a circular shaft, Shear energy in torsion. Concept of closed and open coiled helical springs, Stresses and deflection of helical springs under axial pull. Numerical problems related to torsion and spring	L1 to L5	

5	Deflection of statically determinate and indeterminate beams due to bending moment, Differential equation of elastic line, Area-moment method, Strain energy method- Castiglano's theorem, Superposition method. Numerical problems related to deflection	L1 to L6	
2	Analysis of Biaxial stresses-Mohr's circle for biaxial stress; concept of normal stress, principal stress and pure shear. Shear strain and shear strain energy. Stresses in thin walled pressure vessels- tangential and Hoop stress. Relation between shear modulus and Young's modulus.	L1-L5	
6	Theory of columns; eccentric loading of short strut; column buckling: Euler load for columns with pinned ends and other end restraints; Euler's curve; empirical column formulae – (i) Straight line, (ii) parabolic and (iii) Rankine Gordon.	L1-L5	

86 02.07.18

Signature of the DIC

H.O.D.

Mechanical Engineering
Hooghly Engineering & Technology College

J. Lyketh 2.7.18

Signature of the Faculty

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



COURSE PLAN

Department: Computer Science and Engineering
 Year: 2nd
 Paper Name: Data Structure & Algorithms
 Contact/week: 3
 Available Weeks: 12
 Name of the Faculty: Dibyendu Samanta

Session: 2022-23
 Semester: 3rd
 Paper Code: PCC CS301
 Credit: 3
 No. of Periods available: 18
 Designation: Assistant Professor

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
1	Analysis of an Algorithm, Asymptotic Notations, Time-Space trade off	L1-L3	NA
2	ADT queue, Types of Queue: Simple Queue, Circular Queue, Priority Queue;	L1-L2	NA
	Operations on each types of Queues: Algorithms and their analysis	L3-L4	NA
3	Trees: Basic Tree Terminologies	L1	NA
	Different types of Trees: Binary Tree, Threaded Binary Tree	L2	NA
	Binary Search Tree, AVL Tree; Tree operations on each of the trees and their algorithms with complexity analysis	L3-L5	NA
4	Objective and properties of different sorting algorithms: Selection Sort, Bubble Sort, Insertion Sort	L1-L2	NA
	Quick Sort, Merge Sort, Heap Sort; Performance and Comparison among all the methods,	L3-L5	NA
	Hashing	L6-L7	NA



D. Samanta

Signature of the HOD/DIC

Mr. Dibyendu Samanta
 DIC, Dept. of CSE
 H.E.T.C., Hooghly.

D. Samanta

Signature of the Faculty

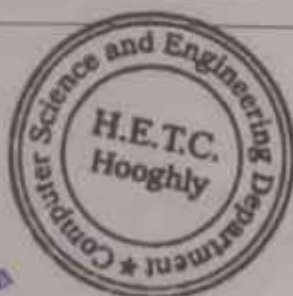
HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING

COURSE PLAN

Department: Computer Science and Engineering
 Year: 2nd
 Paper Name: Data Structure & Algorithms
 Contact/week: 3
 Available Weeks:15
 Name of the Faculty: Dibyendu Samanta

Session: 2022-23
 Semester: 3rd
 Paper Code: PCC CS301
 Credit: 3
 No. of Periods available:18L.
 Designation: Assistant Professor

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
1	Analysis of an Algorithm, Asymptotic Notations, Time-Space trade off	L1-L3	NA
2	ADT queue, Types of Queue: Simple Queue, Circular Queue, Priority Queue;	L1-L2	NA
	Operations on each types of Queues: Algorithms and their analysis	L3-L4	NA
3	Trees: Basic Tree Terminologies	L1	NA
	Different types of Trees: Binary Tree, Threaded Binary Tree	L2	NA
	Binary Search Tree, AVL Tree; Tree operations on each of the trees and their algorithms with complexity analysis	L3-L5	NA
4	Objective and properties of different sorting algorithms: Selection Sort, Bubble Sort, Insertion Sort	L1-L2	NA
	Quick Sort, Merge Sort, Heap Sort; Performance and Comparison among all the methods,	L3-L5	NA
	Hashing	L6-L7	NA



D Samanta

DIC, Department of CSE

Mr. Dibyendu Samanta
 DIC, Dept. of CSE
 HETC, Hooghly.

D Samanta

Mr. Dibyendu Samanta
 Assistant Professor, Dept. of CSE

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING



COURSE PLAN

Department: Computer Science and Engineering
 Year: 2nd
 Paper Name: Design & Analysis of Algorithms
 Contact/week: 3
 Available Weeks: 12
 Name of the Faculty: Mr. Dibyendu Samanta

Session: 2022-23
 Semester: 4th
 Paper Code: PCC CS404
 Credit: 3
 No. of Periods available: 18L
 Designation: Assistant Professor

Module	Topics to be covered	Assigned Number of Lectures	Assigned Number of Tutorials
1	Introduction: Characteristics of algorithm	L1	NA
	Analysis of algorithm: Asymptotic analysis of complexity bounds – best, average and worst-case behavior	L2-L3	NA
	Performance measurements of Algorithm, Time and space trade-offs	L4-L5	NA
	Analysis of recursive algorithms through recurrence relations: Substitution method, Recursion tree method and Masters' theorem	L6-L8	NA
2	Fundamental Algorithmic strategy :Dynamic Programming	L1-L2	NA
	Backtracking	L3-L4	NA
	Bin Packing, Knap Sack, TSP	L5-L6	
3	Graph and Tree Algorithms: Traversal algorithms: Depth First Search (DFS) and Breadth First Search (BFS);	L1-L3	NA
	Shortest path algorithms, Transitive closure, Minimum Spanning Tree, Topological sorting	L4-L5	NA
	Network Flow Algorithm.	L6	NA



B. Halder
 Dr. Biswajit Halder
 HOD, Department of CSE

D. Samanta
 Mr. Dibyendu Samanta
 Assistant Professor, Dept. of CSE

H.O.D.
 Computer Science and Engineering
 Hooghly Engineering & Technology



**HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING**



Course Plan

Paper Name: Power System-II	Department: EE
Paper Code: PC EE-602	Session: 2018-2019
Year: 2019	Credit: 4
Semester: 6 th	No. of Periods: 2 per week (Module-I, II, IV & V)
Name of the Faculty: Chandan Jana	Contact: 9434122509
Designation: Assistant Professor	Available Weeks: 15

Module	Topics to be covered	Assigned no. of Lectures
Unit-I Representation of Power system components (2L)	Single-phase representation of balanced three phase networks	L1
	The one-line diagram and the impedance or reactance diagram, per unit (PU) system.	L2
Unit-II Distribution substation (6L)	Types of substations, location of substations, substation equipments and accessories.	L3
	Earthing (system & equipment).	L4, L5
	Feeder and distributors.	L6
	Radial and loop systems.	L7, L8
Unit-IV Faults in Electrical systems (8L)	Transient on a transmission line, short circuit of a synchronous machine under no load & Loaded condition.	L9, L10, L11
	Symmetrical component transformation, sequence impedance and sequence network of	L12, L13
	Power system, synchronous machine, transmission lines and transformers.	L14
	Symmetrical component analysis of unsymmetrical faults; single line-to-ground fault, line-to-line fault, double line-to-ground fault.	L15, L16
Unit-V System Stability (4L)	Steady state stability, transient stability.	L17
	Equal area criteria.	L18, L19
	Swing equation, multi machine	

Chandan Jana

H.O.D.

Electrical Engineering
Signature of the Faculty
Hooghly Engineering & Technology College





HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING



Course Plan

Paper Name: Power System-II	Department: EE
Paper Code: PC-EE-602	Session: 2019-2020
Year: 2020	Credit: 4
Semester: 6 th	No. of Periods: 2 per week (Module- I, II, IV & V)
Name of the Faculty: Chandan Jana	Contact: 9434122509
Designation: Assistant Professor	Available Weeks: 15

Module	Topics to be covered	Assigned no. of Lectures
Unit-I Representation of Power system components (2L)	Single-phase representation of balanced three phase networks	L1
	The one-line diagram and the impedance or reactance diagram, per unit (PU) system.	L2
Unit-II Distribution substation (6L)	Types of substations, location of substations, substation equipments and accessories,	L3
	Earthing (system & equipment),	L4, L5
	Feeder and distributors,	L6
	Radial and loop systems.	L7, L8
Unit-IV Faults in Electrical systems (8L)	Transient on a transmission line, short circuit of a synchronous machine under no load & Loaded condition.	L9, L10, L11
	Symmetrical component transformation, sequence impedance and sequence network of	L12, L13
	Power system, synchronous machine, transmission lines and transformers.	L14
	Symmetrical component analysis of unsymmetrical faults, single line-to-ground fault, line to-line fault, double line-to-ground fault.	L15, L16
Unit-V System Stability (4L)	Steady state stability, transient stability,	L17
	Equal area criteria,	L18, L19
	Swing equation, multi machine	

Avijit Maity
Signature of the HOD

H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College





**HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING**



Course Plan

Paper Name: Power System-II	Department: EE
Paper Code: PC-EE-602	Session: 2020-2021
Year: 2021	Credit: 4
Semester: 6 th	No. of Periods: 2 per week (Module- I, II, IV & V)
Name of the Faculty: Chandan Jana	Contact: 9434122509
Designation: Assistant Professor	Available Weeks: 15

Module	Topics to be covered	Assigned no. of Lectures
Unit-I Representation of Power system components (2L)	Single-phase representation of balanced three phase networks	L1
	The one-line diagram and the impedance or reactance diagram, per unit (PU) system.	L2
Unit-II Distribution substation (6L)	Types of substations, location of substations, substation equipments and accessories.	L3
	Earthing (system & equipment),	L4, L5
	Feeder and distributors,	L6
	Radial and loop systems.	L7, L8
Unit-IV Faults in Electrical systems (8L)	Transient on a transmission line, short circuit of a synchronous machine under no load & Loaded condition.	L9, L10, L11
	Symmetrical component transformation, sequence impedance and sequence network of	L12, L13
	Power system, synchronous machine, transmission lines and transformers.	L14
	Symmetrical component analysis of unsymmetrical faults, single line-to-ground fault, line to-line fault, double line-to-ground fault.	L15, L16
Unit-V System Stability (4L)	Steady state stability, transient stability,	L17
	Equal area criteria,	L18, L19
	Swing equation, multi machine	


 Signature of the Head
Electrical Engineering
 Hoochly Engineering & Technology College





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING



Course Plan

Paper Name: Power System-II	Department: EE
Paper Code: PC EE-602	Session: 2021-2022
Year: 2022	Credit: 4
Semester: 6 th	No. of Periods: 2 per week (Module- I, II, IV & V)
Name of the Faculty: Chandan Jana	Contact: 9434122509
Designation: Assistant Professor	Available Weeks: 15

Module	Topics to be covered	Assigned no. of Lectures
Unit-I Representation of Power system components (2L)	Single-phase representation of balanced three phase networks	L1
	The one-line diagram and the impedance or reactance diagram, per unit (PU) system.	L2
Unit-II Distribution substation (6L)	Types of substations, location of substations, substation equipments and accessories,	L3
	Earthing (system & equipment),	L4, L5
	Feeder and distributors,	L6
	Radial and loop systems.	L7, L8
Unit-IV Faults in Electrical systems (8L)	Transient on a transmission line, short circuit of a synchronous machine under no load & Loaded condition.	L9, L10, L11
	Symmetrical component transformation, sequence impedance and sequence network of	L12, L13
	Power system, synchronous machine, transmission lines and transformers.	L14
	Symmetrical component analysis of unsymmetrical faults, single line-to-ground fault, line to-line fault, double line-to-ground fault.	L15, L16
Unit-V System Stability (4L)	Steady state stability, transient stability,	L17
	Equal area criteria,	L18, L19
	Swing equation, multi machine.	

Signature: *Chandan Jana*
H.O.D.
Electrical Engineering
Hoochly Engineering & Technology College

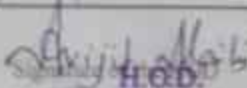


**HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING**

Course Plan

Paper Name: Power System-II	Department: EE
Paper Code: PC/EE-602	Session: 2022-2023
Year: 2023	Credit: 4
Semester: 6th	No. of Periods: 2 per week (Module-I,II,IV & V)
Name of the Faculty: Chandan Jana	Contact: 9434122509
Designation: Assistant Professor	Available Weeks: 15

Module	Topics to be covered	Assigned no. of Lectures
Unit-I Representation of Power system components (2L)	Single-phase representation of balanced three phase networks	L1
	The one-line diagram and the impedance or reactance diagram, per unit (PU) system.	L2
Unit-II Distribution substation (6L)	Types of substations, location of substations, substation equipments and accessories.	L3
	Earthing (system & equipment).	L4, L5
	Feeder and distributors.	L6
	Radial and loop systems	L7, L8
Unit-IV Faults in Electrical systems (8L)	Transient on a transmission line, short circuit of a synchronous machine under no-load & Loaded condition.	L9, L10, L11
	Symmetrical component transformation, sequence impedance and sequence network of	L12, L13
	Power system, synchronous machine, transmission lines and transformers.	L14
	Symmetrical component analysis of unsymmetrical faults, single line-to-ground fault, line to-line fault, double line-to-ground fault.	L15, L16
Unit-V System Stability (4L)	Steady state stability, transient stability.	L17
	Equal area criteria.	L18, L19
	Swing equation, multi machine	


H.O.D.
Electrical Engineering
HooGLy Engineering & Technology College



**HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING**



Course Plan

Paper Name: Electrical and Electronic Measurement	Department: EE
Paper Code: PC EE 403	Session: 2020-21
Year: 2021	Credit: 3
Semester: 4 th	No. of Periods: 2 per week
Name of the Faculty: Sannistha Banerjee	Contact: 9434473971
Designation: Assistant Professor	Available Weeks: 15

Module	Content (Name of the topic)	Assigned Nos. of Lectures
II	Measurement of resistance	4
	Measurement of medium and low resistances	2
	Measurement of high resistances	1
	Megger.	1
III	AC Bridges	4
	Measurement of Inductance by AC bridges: Balanced equation and components of general AC bridges Maxwell Inductance Bridge, Maxwell Inductance-Capacitance Bridge, Hay's Bridge, Andersons Bridge.	2
	Measurement of capacitance by AC bridges: De Sauty's Bridge, Schering Bridge	2
	Measurement of frequency by AC bridges: Wien's Bridge, Numerical	1
II	Instrument transformer	4
	Disadvantage of shunt and multipliers, Advantage of Instrument transformers	1
	Principle of operation of Current Transformer (CT): Phasor diagram, operation and errors in CT	1
	Potential Transformer (PT): Working, operation and errors in PT	2

III	Measurement of Energy	3
	Construction	1
	Theory and application of AC energy meter	1
	Testing of energy meters.	1
III	Potentiometer	4
	Principle of operation and application of Crompton's DC potentiometer	2
	Polar and Co-ordinate type AC potentiometer	1
	Application.	1

*This course will be share with another faculty of this EE department. The rest topic will be delivered by him.


 Signature of the H.O.D.
H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

COURSE PLAN

Department: Electrical Engineering

Year: 3rd

Paper Name: Control System Laboratory

Contact: 3P

Available Weeks: 16

Name of the Laboratory in-Charge: Prof. Shilpi Saha

Name of the Technical Assistant (s): Priyanka ghosh

Session: 2022 - 2023

Semester: 5th

Paper Code: PCEE593

Credit: 1

No. of Periods: 13

Sl. No.	Topics/Jobs/Programs/Experiments to be covered	Assigned Nos. of Lectures	Assigned Nos. of Practical Classes
1	Familiarization with MAT-Lab control system toolbox, MAT-Lab-simulink tool box & PSPICE		1
2	Introduction of Closed loop control system and open loop control system by using MATLAB		1
3	RC mathematical modeling, component modeling, and programming		1
4	P Z Mapping by using MATLAB programming		1
5	Block diagram reduction by using MATLAB programming		1
6	Determination of Step response for first order & Second order system with unity feedback with the help of CRO & calculation		1
7	Simulation of Step response & Impulse response for type-0, type-1 & Type-2 system with unity feedback using MATLAB		1
8	Simulation of Step response & Impulse response for type-0, type-1 & Type-2 system with unity feedback using hardware		1
9	PCA 1 EXAM		1
10	Determination of Root locus, Bode plot, Nyquist plot using MATLAB control system tool box for a given system & stability by determining control system specification from the plot. (Only Root Locus)		1

11.	Determination of Root locus, Bode plot, Nyquist plot using MATLAB control system tool box for a given system & stability by determining control system specification from the plot. (Only Nyquist)		1
12.	Determination of Root locus, Bode plot, Nyquist plot using MATLAB control system tool box for a given system & stability by determining control system specification from the plot. (Only Bode Plot)		1
13.	Determination of approximate transfer function experimentally from Bode Plot		1

Avijit Maity
Signature of the HOD
H.O.D.

Electrical Engineering
Hooghly Engineering & Technology College



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

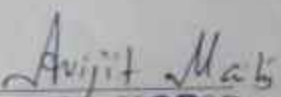
COURSE PLAN

Department: Electrical Engineering	Session: 2022- 2023
Year: 3 rd	Semester: 5 th
Paper Name: Power System I	Paper Code: PC-EE502
Contact: 2L	Credit: 3
Available Weeks: 12	No. of Periods: 24
Name of the Faculty: Anikendu Maitra	Designation: Assistant Professor

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	Generation of Electric Power: General layout of a typical coal fired power station	L1	-
	Hydroelectric power station	L2	-
	nuclear power station, their components and working principles, comparison of different methods of power	L3, L4	-
	Introduction to Solar & Wind energy system.	L5	-
2	Overhead line construction: Line supports, Towers, Poles, concept of sag and Dampers	L6	-
	Overhead line construction: Sag, Tension and Clearance, Effect of Wind and Ice on Sag.	L7	-
	Overhead line construction: Solution of problems on sag and tension.	L8	-
	Corona: Principle of Corona formation, Critical disruptive voltage, Visual critical corona discharge potential	L9	-
	Corona: Corona loss, advantages & disadvantages of Corona. Methods of reduction of Corona, Solution of problems	L10, L11	-
3	Insulators: Choice of insulator material for overhead line. Types of insulators and their use	L12	-
	Voltage distribution across a suspension insulator string, String efficiency, arcing shield & rings,	L13	-
	Methods of improving voltage distribution across insulator strings, Solution of problems on String efficiency, Electrical tests on line Insulators.	L14, L15, L16	-

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
4	Cables: Introduction to underground cables. Need of UG cables and their features. Basic construction of UG cables.	L17	
	Types of cables, cable components, dielectric stress and capacitance of single core & 3 core cables	L18, L19	
	Optimum cable thickness, grading, dielectric loss and loss angle. Solution of Problems	L20	
5	Tariff: Guiding principle of Tariff, different types of tariff.	L21, L22, L23	

Note: This paper will be shared with one more faculty. Lecture plan prepared above reflects the portion of the syllabus to be covered by the concerned faculty.


 Signature of **H.O.D.**
Electrical Engineering
Hooghly Engineering & Technology College


 Signature of the Faculty

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

COURSE PLAN

Department: Electrical Engineering Year: 2 nd Paper Name: Electric Circuit Theory Contact: 21 Available Weeks: 12 Name of the Faculty: Anikendu Maity	Session: 2022-2023 Semester: 3 rd Paper Code: PC-EE301 Credit: 4 No. of Periods: 24 Designation: Assistant Professor
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
Unit 1 (Introduction)	Continuous & Discrete, Fixed & Time varying, Linear and Nonlinear, Lumped and Distributed, Passive and Active networks and systems.	L1	-
	Independent & Dependent sources, Step, Ramp, Impulse, Sinusoidal, Square, Saw tooth signals	L2	-
	Tutorial on different signal generation and waveform synthesis.		T1
Unit 3 (Coupled circuits)	Magnetic coupling, Polarity of coils, Polarity of induced voltage, Concept of Self and Mutual inductance, .	L3	-
	Coefficient of coupling, Modeling of coupled circuits	L4	-
	Solution of problems.		T2
Unit 4 (Laplace transforms)	Concept of complex frequency, Introduction to Laplace transform	L5	-
	Impulse, Step & Sinusoidal response of RL, RC, and RLC circuits	L6, L7	-
	Transient analysis of different electrical circuits with and without initial conditions	L8	T3
	Concept of Convolution theorem and its application.	L9	-
	Solution of Problems with DC & AC sources.	L10	T4

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
Unit 4 (Fourier method of waveform analysis)	Fourier series and Fourier Transform (in continuous domain only).	L11, L12	T5
	Application in circuit analysis, Solution of Problems	L13, L14	T6

Note: This paper will be shared with one more faculty. Lecture plan prepared above reflects the portion of the syllabus to be covered by the concerned faculty.

Arijit Maity
 Signature of the HOD
H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING
LECTURE PLAN

Department: Electronics & Communication Engineering	Session: 2018- 2019
Year: 3rd	Semester: 5th
Paper Name: Analog Communication	Paper Code: EC-501
Contact: 3L+1T	Credit: 4
Available Weeks: 12	No. of Periods: 36L
Name of the Faculty: Swarup Samanta	Designation: Asst. Professor

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
I	<p>Elements of communication system - Transmitters, Transmission channels & receivers, Concept of modulation, its needs.</p> <p>Continuous Wave Linear Modulation:</p> <p>a) Amplitude modulation(AM-DSB/TC): Time domain representation of AM signal (expression derived using a single tone message), modulation index, frequency domain (spectral) representations, illustration of the carrier and side band components; transmission bandwidth for AM; Phasor diagram of an AM signal; Calculation of Transmitted power & sideband power & Efficiency ; concept of under, over and critical modulation of AM-DSB-TC.</p> <p>b) Other Amplitude Modulations: Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, bandwidth and transmission power for DSB. Single side band modulation (SSB) both TC & SC and only the basic concept of VSB, Spectra and band-width.</p>	L1-L8	T1-T2
II	<p>Generation & Detection of Amplitude Modulation:</p> <p>a) Generation of AM: Concept of I) Gated and II) Square law modulators, Balanced Modulator.</p>	L9-L15	T3-T4

	<p>b) Generation of SSB: Filter method, Phase shift method and the Third method</p> <p>Demodulation for Linear Modulation:</p> <p>Demodulation of AM signals: Detection of AM by envelope detector, Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections.</p> <p>Principle of Super heterodyne receivers:</p> <p>Super heterodyning principle, intermediate frequency, Local oscillator frequency, image frequency.</p>		
III	<p>Angle Modulation:</p> <p>a) Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations, Spectral representation of FM and PM for a single tone message, Bessel's functions and Fourier series. Phasor diagram</p> <p>b) Generation of FM & PM: Narrow and Wide-band angle modulation, Basic block diagram representation of generation of FM & PM, Concept of VCO & Reactance modulator</p> <p>c) Demodulation of FM and PM: Concept of frequency discriminators, Phase Locked Loop</p>	L16-L23	T5
IV	<p>Multiplexing</p> <p>a) Frequency Division Multiplexing (FDM), Time Division Multiplexing (TDM)</p> <p>b) Stereo – AM and FM: Basic concepts with block diagrams</p>	L24-L25	

Note: The rest part of the syllabus will be covered by Prof. T.K. Bandyopadhyay

Sua 26/7/18
Signature of the HOD

DIC, ECE Deptt.
HETC, Hooghly.

Swatup Samanta
Signature of the Faculty 26/7/18



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING




LECTURE PLAN

Department: Electronics & Communications Engineering Year: 3rd Paper Name: Digital Communication Contact: 3L Available Weeks: 12 Name of the Faculty: Mr. Swarup Samanta	Session: 2018- 2019 Semester: 6th Paper Code: EC-601 Credit: 3 No. of Periods: 36L Designation: Asst. Professor
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	MODULE – I: Probability Theory and Random Processes: Conditional probability, communication example, joint probability, statistical independence, random variable-continuous and discrete, cumulative distribution function, probability density function – Gaussian, Rayleigh and Rician, mean, variance, random process, stationary and ergodic processes, correlation coefficient, covariance, auto correlation function and its properties, random binary wave, power spectral density.	L1,L2,L3, L4,L5,L6	
2	Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality, basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals, likelihood functions, Schwartz inequality, Gram- Schmidt orthogonalization procedure, response of the noisy signal at the receiver, maximum likelihood decision rule, decision boundary, optimum correlation receiver; probability of error, error function, complementary error function, Type-I and Type-II errors.	L7,L8,L9, L10,L11, L12	

3	<p>Digital Data Transmission:</p> <p>Concept of sampling, Pulse Amplitude Modulation (PAM), interlacing and multiplexing of samples, Pulse Code Modulation (PCM), quantization, uniform and non-uniform quantization, quantization noise, binary encoding, A-Law and μ-law companding, differential PCM, delta modulation and adaptive delta modulation. Digital transmission components, source, multiplexer, line coder, regenerative repeater, concept of line coding – polar/unipolar/bipolar NRZ and RZ, Manchester, differential encoding and their PSDs, pulse shaping, Inter Symbol Interference (ISI), Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction.</p>	L13,L14, L15,L16, L17,L18, L19,L20, L21,L22	
4	<p>Digital Modulation Techniques:</p> <p>Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, basic digital carrier modulation techniques: ASK, FSK and PSK, Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal; error probability of BPSK, generation and detection of BPSK Signal, power spectrum of BPSK. Concept of M-ary Communication, M-ary phase shift keying, the average probability of symbol error for coherent M-ary PSK, power spectra of MPSK, Quadrature Phase Shift Keying (QPSK), error probability of QPSK signal, generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase shift Queuing (OQPSK), Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals, generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal, Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal, Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation diagram, Some performance issues for different digital modulation techniques - Error Vector Magnitude (EVM), Eye Pattern and Relative Constellation Error (RCE), Conceptual idea for Vector Signal Analyzer (VSA).</p>	L23,L24, L25,L26, L27,L28, L29,L30, L31,L32, L33,L34, L36	


 Signature of the HOD/DIC
 HOD/DIC/Coordinator
 Dept. of ECE, HETC, Hooghly.


 Signature of the Faculty

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING

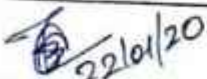


LECTURE PLAN

Department: Electronics & Communications Engineering Year: 3rd Paper Name: Digital Communication Contact: 3L Available Weeks: 12 Name of the Faculty: Mr. Swarup Samanta	Session: 2019- 2020 Semester: 6th Paper Code: EC-601 Credit: 3 No. of Periods: 36L Designation: Asst. Professor
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------

Module	Topics to be covered	Assigned Nos. of Lectures	Assigned Nos. of Tutorials
1	MODULE – 1: Probability Theory and Random Processes: Conditional probability, communication example, joint probability, statistical independence, random variable-continuous and discrete, cumulative distribution function, probability density function – Gaussian, Rayleigh and Rician, mean, variance, random process, stationary and ergodic processes, correlation coefficient, covariance, auto correlation function and its properties, random binary wave, power spectral density.	L1,L2,L3, L4,L5,L6	
2	Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality, basis function, orthogonal signal space, message point , signal constellation, geometric interpretation of signals, likelihood functions, Schwartz inequality, Gram- Schmidt orthogonalization procedure, response of the noisy signal at the receiver, maximum likelihood decision rule, decision boundary, optimum correlation receiver; probability of error , error function, complementary error function, Type-I and Type-II errors.	L7,L8,L9, L10,L11, L12	

3	<p>Digital Data Transmission: Concept of sampling, Pulse Amplitude Modulation (PAM), interlacing and multiplexing of samples, Pulse Code Modulation (PCM), quantization, uniform and non-uniform quantization, quantization noise, binary encoding, A-Law and μ-law companding, differential PCM, delta modulation and adaptive delta modulation. Digital transmission components, source, multiplexer, line coder, regenerative repeater, concept of line coding – polar/unipolar/bipolar NRZ and RZ, Manchester, differential encoding and their PSDs, pulse shaping, Inter Symbol Interference (ISI), Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction.</p>	L13,L14, L15,L16, L17,L18, L19,L20, L21,L22	
4	<p>Digital Modulation Techniques: Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, basic digital carrier modulation techniques: ASK, FSK and PSK, Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal; error probability of BPSK, generation and detection of BPSK signal, power spectrum of BPSK. Concept of M-ary Communication, M-ary phase shift keying, the average probability of symbol error for coherent M-ary PSK, power spectra of MPSK, Quadrature Phase Shift Keying (QPSK), error probability of QPSK signal, generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase shift Queuing (OQPSK), Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals, generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal, Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal, Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation diagram, Some performance issues for different digital modulation techniques - Error Vector Magnitude (EVM), Eye Pattern and Relative Constellation Error (RCE), Conceptual idea for Vector Signal Analyzer (VSA).</p>	L23,L24, L25,L26, L27,L28, L29,L30, L31,L32, L33,L34, L36	


 Signature of the HOD/DIC/Coordinator


 Signature of the Faculty

1.1.1

Course Diaries



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 3rd
Paper Name: Digital Communication and Stochastic Process
Contact/week: 12
Available Weeks: 12
Name of the Faculty: Swarup Samanta
Designation: Assistant Professor

Session: 2020-21
Semester: 5th
Paper Code: EC-503
Credit: 3.5
No. of Periods available: 34L+6T

Module	Lecture No	Tutorial No	Topics to be covered	Date	Comments
III	L1		Introduction to digital communication Elements of digital communication system, Advantages and disadvantages.	17.08.20	Completed
	L2		Different types of sampling and Pulse Modulation (PAM, PWM, PPM)	19.08.20	"
	L3		Waveform coding: Introduction and Pulse Code Modulation (PCM)	24.08.20	"
	L4		Quantization: Uniform quantization, and quantization error. Transfer and error characteristics of even quantizer.	26.08.20	"
	L5		Transfer characteristics and error characteristics of Odd quantizer.	31.08.20	"
	L6		Non-uniform quantization, A-Law and μ -law companding	2.09.20	"
	L7		Delta Modulation and Demodulation (DM)	7.09.20	"

L8		Adaptive Delta modulation and Differential Pulse Code Modulation (DPCM)	9.09.20	Completed
L9		Concept of line coding: polar/ unipolar/ bipolar NRZ and RZ, Manchester, differential encoding, and their PSDs.	14.09.20	"
L10		Inter Symbol Interference (ISI), Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, RR.	16.09.20	"
	T1	Doubt clearance and Problem solving	21.09.20	"
	T2	Doubt clearance and Problem solving	23.09.20	"
IV	L11	Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, Concept of BASK.	28.09.20	"
	L12	Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals.	30.09.20	"
	L13	Generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal	5.10.20	"
	L14	Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal; error probability of BPSK, generation and detection of BPSK Signal, power spectrum of BPSK.	7.10.20	"
	L15	Concept of M-ary Communication, Quadrature Phase Shift Keying (QPSK), Offset Quadrature Phase Shift Keying.	12.10.20	"

L16		Generation and detection of QPSK signals, power spectra of QPSK signals,	14.10.20	Completed
L17		Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal.	19.10.20	,
L18		Gaussian Minimum Shift Keying: GMSK	21.10.20	,
L19		Basic concept of OFDM, constellation diagram	24.10.20	,
L20		Error Vector Magnitude (EVM), Relative Constellation Error (RCE), Conceptual idea for Vector Signal Analyzer (VSA)	28.10.20	,
	T3	Doubt clearance and Problem solving	2.11.20	,
	T4	Doubt clearance and Problem solving	4.11.20	,
I	L21	Introduction to Stochastic Processes (SPs): Definition and examples of SPs,	9.11.20	,
	L22	Classification of random processes according to state space and parameter space, elementary problems.	11.11.20	,
	L23	Stationary and ergodic processes, correlation coefficient, covariance.	16.11.20	,
	L24	Auto correlation function and its properties	18.11.20	,

	L25		Random binary wave	23.11.20	Completed
	L26		Power spectral density.	25.11.20	"
	L27		Definition and examples of Markov Chains, transition probability matrix,	30.11.20	"
	L28		Chapman Kolmogorov equations; calculation of n-step transition probabilities.	2.12.20	"
		T5	Doubt clearance and Problem solving	2.12.20	"
II	L29		Signal Vector Representation: Analogy between signal and vector, orthogonality and orthonormality.	7.12.20	"
	L30		Basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals.	9.12.20	"
	L31		Schwartz inequality, Gram-Schmidt orthogonalization procedure, maximum likelihood decision rule, decision boundary	14.12.20	"
	L32		Optimum correlation receiver, probability of error, error function, complementary error function.	16.12.20	"
	L33		Matched filter, probability of error function of matched filter.	21.12.20	"
	L34		Type-I and Type-II errors.	23.12.20	"

		T7	Doubt clearance and Problem solving	28.12.20	Completed
--	--	----	-------------------------------------	----------	-----------

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
42	40	—	—

Remarks: _____

SAS 28/12/20

 Signature of the Faculty

Remarks: _____

[Signature] 28/12/2020

 Signature of the HOD/Coordinator
 HOD, HOD/Coordinator
 Dept. of ECE, HETC, Ho...



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 2nd
Paper Name: Analog Communication
Contact: 3L
Available Weeks: 12
Name of the Faculty: Mr. Swarup Samanta

Session: 2020-2021
Semester: 4th
Paper Code: EC401
Credit: 3
No. of Periods: 36
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic / Topics Covered	Date	Comments
III	1	-	Introduction: Elements of Communication System-Transmitters, transmission channels, and receivers.	13.04.21	Completed
	2	-	Different types of communication, Concepts of modulation	14.04.21	"
	3	-	Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index	16.04.21	"
	4	-	Frequency domain representations, illustration of the carrier and sideband components; BW, Phasor diagram.	20.04.21	"
	5	-	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation.	21.04.21	"
	6	-	Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, BW.	23.04.21	"
	7	-	Single sideband modulation (SSB) both TC & SC.	27.04.21	"
	8	-	The basic concept of VSB, Spectra, and bandwidth.	29.04.21	"
II	9	-	Generation & Detection of Amplitude Modulation, Concept of Gated and Modulator.	30.04.21	"
	10	-	Square law modulators, Balanced Modulator.	30.04.21	"

	11	-	Generation of SSB: Filter method	4.05.21	Completed
	12	-	Phase shift method, and the Third method.	5.05.21	"
	13	-	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	7.05.21	"
	14	-	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections of DSB-FC	11.05.21	"
	15	-	Effects of Frequency & Phase mismatch, Corrections of DSB-SC and SSB-SC.	12.05.21	"
	16	-	Block diagram super heterodyne receiver, intermediate frequency, Local oscillator frequency image frequency.	12.05.21	"
III	17	-	Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations.	14.05.21	"
	18	-	Spectral representation of FM and PM for a single tone message.	18.05.21	"
	19	-	Bessel's functions, and Fourier series.	19.05.21	"
	20	-	Phasor diagram	21.05.21	"
	21	-	Generation of FM & PM: NBFM, Basic block diagram representation of the generation of FM & PM.	25.05.21	"
	22	-	WBFM, Basic block diagram representation of the generation of FM, VCO & Reactance modulator.	26.05.21	"
	23	-	Concept of frequency discriminators	28.05.21	"
	24	-	Phase Locked Loop	1.06.21	"
IV	25	-	Frequency Division Multiplexing, Time Division Multiplexing, (FDM).	2.06.21	"

26	-	Stereo – AM, and FM: Basic concepts with block diagrams.	4.06.21	Completed
27	-	Random Signals and Noise in Communication System, Internal & External noise, Noise Temperature, SNR, White and thermal noise, FOM.	8.06.21	"
28	-	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC.	9.06.21	"
29	-	SNR calculation for SSBSC & FM.	11.06.21	"
30	-	Conditional probability, communication example, joint probability, statistical independence,	15.06.21	"
31	-	random variable-continuous and discrete, cumulative distribution function, probability density function –	16.06.21	"
32	-	Gaussian, Rayleigh, and Rician, distribution	18.06.21	"

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
33	32	—	—

Remarks: _____

SRS/18.6.21
Signature of the Faculty

Remarks: _____

18/6/21
Signature of the HOD/DIC

HOD/DIC/Coordinator
Dept. of ECE, HETC, Hoogly



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 3rd
Paper Name: Digital Communication & Stochastic Process
Contact: 3L, 0.5T
Available Weeks: 12
Name of the Faculty: Mr. Swarup Samanta

Session: 2021-2022
Semester: 5th
Paper Code: EC503
Credit: 3.5
No. of Periods: 34L+6T
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topics to be covered	Date	Remarks
III	L1		Introduction to digital communication Elements of digital communication system Advantages and disadvantages.	02/09/21	Completed
	L2		Different types of sampling and Pulse Modulation (PAM, PWM, PPM).	4/9/21	Completed
	L3		Waveform coding: Introduction and PCM.	9/9/21	Completed
	L4		Quantization Process, uniform quantization, and quantization error.	11/9/21	Completed
	L5		Transfer characteristics and error characteristics of different types of quantizer.	14/9/21	Completed
	L6		Non-uniform quantization, A-Law and μ -law companding.	16/9/21	Completed
	L7		Delta Modulation and Adaptive Delta modulation.	18/9/21	Completed
	L8		Differential Pulse Code Modulation (DPCM).	21/9/21	Completed
	L9		Concept of line coding: polar/unipolar/bipolar NRZ and RZ, Manchester, differential encoding, and their PSDs.	23/9/21	Completed

	L10		Pulse shaping, ISI, Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction	25/9/24	Completed
		T1	Doubt clearance and Problem solving	28/9/24	Done
		T2	Doubt clearance and Problem solving	30/9/24	Done
IV	L11		Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, Basic Concept of BASK.	02/11/24	Completed
	L12		Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals.	4/11/24	Completed
	L13		Generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal.	6/11/24	Completed
	L14		Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal.	9/11/24	Completed
	L15		Concept of M-ary communication, M-ary PSK.	11/11/24	Completed
	L16		Generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase Shift Keying (OQPSK).	13/11/24	Completed
	L17		Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal.	16/11/24	Completed
			Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation diagram.	18/11/24	Completed
	L18		Some performance issues for different digital modulation techniques-Error Vector Magnitude.	20/11/24	Completed
	L19		Eye Pattern and Relative Constellation Error (RCE).	23/11/24	Completed

	L20		Conceptual idea for Vector Signal Analyzer (VSA).	25/11/21	Completed	
		T3	Doubt clearance and Problem solving	27/11/21	Done	
		T4	Doubt clearance and Problem solving	30/11/21	Done	
I	L21		Definition and examples of SPs, classification of random processes according to state space and parameter space, elementary problems.	14/12/21	Completed	
	L22		Classification of random processes according to state space and parameter space, elementary problems.	16/12/21	Completed	
	L23		Stationary and ergodic processes, correlation coefficient, covariance.	18/12/21	Completed	
	L24		Auto correlation function and its properties.	21/12/21	Completed	
	L25		Random binary wave.	23/12/21	Completed	
	L26		Power spectral density.	25/12/21	Completed	
	L27		Definition and examples of Markov Chains, transition probability matrix, Chapman Kolmogorov equations.	28/12/21	Completed	
	L28		Calculation of n-step transition probabilities.	30/12/21	Completed	
			T5	Doubt clearance and Problem solving.		Done
		L29		Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality.	30/12/21	Completed

II	L30		Basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals, likelihood functions.		
	L31		Schwartz inequality, Gram-Schmidt orthogonalization procedure.		
	L32		Integrate and dump type filter.		
	L33		Optimum correlation receiver.		
	L34		Matched filter, Type-I and Type-II errors.		
		T6		Doubt clearance and Problem solving	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	34	-	-

Remarks: _____

Srinamp Samanta
Signature of the Faculty 22/01/22

Remarks: _____

[Signature] 22/01/22
Signature of the HOD/Coordinator
DIC, ECE Dept.
HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering

Year: 2nd

Paper Name: Analog Communication

Contact: 3L

Available Weeks: 12

Name of the Faculty: Mr. Swarup Samanta

Session: 2021-2022

Semester: 4th

Paper Code: EC401

Credit: 3

No. of Periods: 36

Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic / Topics Covered	Date	Comments
III	1	-	Introduction: Elements of Communication System-Transmitters, transmission channels, and receivers.	8/02/22	Completed
	2	-	Different types of communication, Concepts of modulation	9/02/22	Completed
	3	-	Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index	10/02/22	Completed
	4	-	Frequency domain representations, illustration of the carrier and sideband components; BW, Phasor diagram.	15/02/22	Completed
	5	-	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation.	16/02/22	Completed
	6	-	Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, BW.	17/02/22	Completed
	7	-	Single sideband modulation (SSB) both TC & SC.	21/02/22	Completed
	8	-	The basic concept of VSB, Spectra, and bandwidth.	9/03/22	Completed
II	9	-	Generation & Detection of Amplitude Modulation, Concept of Gated and Modulator.	10/03/22	Completed
	10	-	Square law modulators, Balanced Modulator.	13/03/22	Completed

	11	-	Generation of SSB: Filter method	16/03/22	
	12	-	Phase shift method, and the Third method.	17/03/22	Completed
	13	-	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	22/03/22	Completed
	14	-	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections of DSB-FC	23/03/22	Completed
	15	-	Effects of Frequency & Phase mismatch, Corrections of DSB-SC and SSB-SC.	31/03/22	Completed
	16	-	Block diagram super heterodyne receiver, intermediate frequency, Local oscillator frequency image frequency.	5/04/22	Completed
III	17	-	Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations.	6/04/22	Completed
	18	-	Spectral representation of FM and PM for a single tone message.	7/04/22	Completed
	19	-	Bessel's functions, and Fourier series.	12/4/22	Completed
	20	-	Phasor diagram	15/4/22	Completed
	21	-	Generation of FM & PM: NBFM, Basic block diagram representation of the generation of FM & PM.	19/4/22	Completed
	22	-	WBFM, Basic block diagram representation of the generation of FM, VCO & Reactance modulator.	21/4/22	Completed
	23	-	Concept of frequency discriminators	29/4/22	Completed
	24	-	Phase Locked Loop	9/05/22	Completed
IV	25	-	Frequency Division Multiplexing, Time Division Multiplexing, (FDM).	10/5/22	Completed

26	-	Stereo – AM, and FM: Basic concepts with block diagrams.	11/5/22	Completed
27	-	Random Signals and Noise in Communication System, Internal & External noise, Noise Temperature, SNR, White and thermal noise, FOM.	12/5/22	Completed
28	-	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC.	17/5/22	Completed
29	-	SNR calculation for SSBSC & FM.	24/5/22	Completed
30	-	Conditional probability, communication example, joint probability, statistical independence,	25/5/22	Completed
31	-	random variable-continuous and discrete, cumulative distribution function, probability density function –	31/5/22	Completed
32	-	Gaussian, Rayleigh, and Rician, distribution	01/06/22	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
32	32	0	0

Remarks: _____

Swarup Samanta
Signature of the Faculty 11/5/22

Remarks: _____

S/S/11/6/22
Signature of the HOD/DIC

DIC, ECE Deptt.
HETC, Hooghly.

S.K. 44 01.06.22
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 3rd
Paper Name: Digital Communication & Stochastic Process
Contact: 3L, 0.5T
Available Weeks: 12
Name of the Faculty: Mr. Swarup Samanta

Session: 2022-2023
Semester: 5th
Paper Code: EC503
Credit: 3.5
No. of Periods: 34L+6T
Designation: Assistant Professor

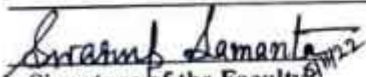
Module	Lecture No	Tutorial No	Topics to be covered	Date	Remarks
III	L1		Introduction to digital communication Elements of digital communication system Advantages and disadvantages.	09/07/22	Completed.
	L2		Different types of sampling and Pulse Modulation (PAM, PWM, PPM).	9/7/22	Completed
	L3		Waveform coding: Introduction and PCM.	12/7/22	Completed
	L4		Quantization Process, uniform quantization, and quantization error.	13/7/22	} Completed
	L5		Transfer characteristics and error characteristics of different types of quantizer.	13/7/22	
	L6		Non-uniform quantization, A-Law and μ -law companding.	15/7/22	Completed
	L7		Delta Modulation and Adaptive Delta modulation.	16/7/22	Completed
	L8		Differential Pulse Code Modulation (DPCM).	20/7/22	Completed
	L9		Concept of line coding: polar/unipolar/bipolar NRZ and RZ.	20/7/22	Completed

		Manchester, differential encoding, and their PSDs.		
	L10	Pulse shaping, ISI, Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction	23/7/22	Completed
	T1	Doubt clearance and Problem solving	27/7/22	Completed
	T2	Doubt clearance and Problem solving	29/7/22	Completed
IV	L11	Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, Basic Concept of BASK.	30/9/22	Completed
	L12	Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals.	03/08/22	Completed
	L13	Generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal.	05/08/22	Completed
	L14	Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal.	06/08/22	Completed
	L15	Concept of M-ary communication, M-ary PSK.	10/8/22	Completed
	L16	Generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase Shift Keying (OQPSK).	12/8/22	Completed
	L17	Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal.	12/8/22	Completed
		Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation	20/8/22	Completed


	L28		Calculation of n-step transition probabilities.	15/10/22	Completed
		T5	Doubt clearance and Problem solving.	19/10/22	Completed
II	L29		Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality.	21/10/22	Completed
	L30		Basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals.	29/10/22	Completed
	L31		Schwartz inequality, Gram-Schmidt orthogonalization procedure.	29/10/22	Completed
	L32		Integrate and dump type filter.	02/11/22	Completed
	L33		Optimum correlation receiver.	5/11/22	Completed
	L34		Matched filter, Type-I and Type-II errors.	5/11/22	Completed
			T6	Doubt clearance and Problem solving	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
10	39	—	—

Remarks: _____


Signature of the Faculty 01/11/22

Remarks: _____


Signature of the HOD/Coordinator
DIC, ECE Deptt.
HETC, Hooghly.

29.11.22
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpat, Hooghly.



		diagram.		
	L18	Some performance issues for different digital modulation techniques-Error Vector Magnitude.	20/8/22	Completed
	L19	Eye Pattern and Relative Constellation Error (RCE).	24/8/22	Completed
	L20	Conceptual idea for Vector Signal Analyzer (VSA).	26/8/22	Completed
	T3	Doubt clearance and Problem solving	27/8/22	Completed
	T4	Doubt clearance and Problem solving	31/8/22	Completed
I	L21	Definition and examples of SPs, classification of random processes according to state space and parameter space.	02/09/22	Completed
	L22	Classification of random processes according to state space and parameter space, elementary problems.	7/9/22	Completed
	L23	Stationary and ergodic processes, correlation coefficient, covariance.	9/9/22	Completed
	L24	Auto correlation function and its properties.	10/9/22	Completed
	L25	Random binary wave.	14/9/22	Completed
	L26	Power spectral density.	16/9/22	Completed
	L27	Definition and examples of Markov Chains, transition probability matrix, Chapman Kolmogorov equations.	12/10/22	Completed



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering

Year: 2nd

Paper Name: Analog Communication

Contact: 3L

Available Weeks: 12

Name of the Faculty: Mr. Swarup Samanta

Session: 2022-2023

Semester: 4th

Paper Code: EC401

Credit: 3

No. of Periods: 36

Designation: Assistant Professor


Module	Lecture No	Tutorial No	Topic / Topics Covered	Date	Comments
III	1	-	Introduction: Elements of Communication System-Transmitters, transmission channels, and receivers.	30/11/22	Completed
	2	-	Different types of communication, Concepts of modulation	7/12/22	Completed
	3	-	Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index	14/12/22	Completed
	4	-	Frequency domain representations, illustration of the carrier and sideband components, BW and Phasor diagram.	04/01/23	Completed
	5	-	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation.	21/2/23	Completed
	6	-	Double Side Band Suppressed Carrier modulation: time and frequency domain expressions, BW, Power calculation.	22/2/23	Completed
	7	-	Single sideband modulation (SSB) both TC & SC.	24/2/23	Completed
	8	-	The basic concept of VSB, Spectra, and bandwidth.	28/2/23	Completed
II	9	-	Generation & Detection of Amplitude Modulation, Concept of Gated and Modulator.	1/3/23	Completed

	10	-	Square law modulators, Balanced Modulator.	14/3/23	Completed
	11	-	Generation of SSB: Filter method	15/3/23	Completed
	12	-	Phase shift method, and the Third method.	28/3/23	Completed
	13	-	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	29/3/23	Completed
	14	-	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections of DSB-FC	4/4/23	Completed
	15	-	Effects of Frequency & Phase mismatch, Corrections of DSB-SC, and SSB-SC.	5/4/23	Completed
	16	-	Principle of Superheterodyne receivers, Block diagram, IF, F _{LO} , image frequency, image frequency rejection ratio.	11/4/23	Completed
III	17	-	Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations.	12/4/23	Completed
	18		Spectral representation of FM and PM for a single tone message.	18/4/23	Completed
	19	-	Bessel's functions, and Fourier series.	19/4/23	Completed
	20	-	Phasor diagram of FM.	25/4/23	Completed
	21	-	Narrow band frequency modulation, Basic block diagram representation of the generation of FM & PM.	26/4/23	Completed
	22	-	Wide-band Frequency modulation, Basic block diagram representation of the generation of FM, Concept of VCO.	10/5/23	Completed
	23	-	Concept of frequency discriminators	16/5/23	Completed
	24	-	Phase Locked Loop	17/5/23	Completed

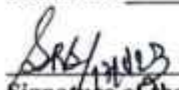
IV	25	-	Frequency Division Multiplexing, Time Division Multiplexing, (FDM).	7/7/22	Completed
	26	-	Stereo - AM, and FM: Basic concepts with block diagrams.	14/7/22	Completed
	27	-	Noise: Internal & External noise, Noise Temperature, SNR, White noise, thermal noise, Figure of Merit.	21/7/22	Completed
	28	-	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC.	29/7/22	Completed
	29	-	SNR calculation for SSBSC & FM.	2/8/22	Completed
	30	-	Conditional probability, communication example, joint probability, statistical independence,	9/9/22	Completed
	31	-	Random variable-continuous and discrete, cumulative distribution function, probability density function.	16/9/22	Completed
	32	-	Gaussian, Rayleigh, and Rician, distribution.	21/10/22	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
32	33	01	01

Remarks: _____


Signature of the Faculty

Remarks: _____


Signature of the HOD/DIC
DIC, ECE Deptt.
HETC, Hooghly.

17.05.23
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LECTURE DIARY

Department: Electronics and Communication Engineering	Session: 2018- 2019
Year: 3rd	Semester: 5th
Paper Name: Analog Communication	Paper Code: EC-501
Contact: 3L+1T	Credit: 4
Available Weeks: 12	No. of Periods: 36 Hours
Name of the Faculty: Prof. Swarup Samanta	Designation: Asst. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
1	1		Introduction about comm. Block diagram Tx. Rx. & Channel. Types of comm system.	17/7/18	Present student <u>Completed</u>
	2.		Difficulties of comm. sys. Concept of Modulation. Need for Mod ⁿ system.	24/7/18	<u>Completed</u>
	3.		Amplitude Modulation (AM) Time domain expression Modulation index. freq. domain expression.	24/7/18	<u>Completed</u>
	4.		Single tone AM. Carrier and Sideband components AM Tx. BW.	25/7/18	<u>Completed</u>
	5.		Tx. Power of AM. Total power, carrier power, side band power. Current equ ⁿ of AM.	25/7/18	<u>Completed</u>

off
24/7/18

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	6		Double sideband suppressed carrier (DSB-SC) Mod ⁿ . Time and frequency domain equation.	14/8/18	Completed
	7		Tr. requirements of DSB BW and power of DSB	17/8/18	Completed
	8		AM modulator low and high level. Non-linear i-v eqn ⁿ . Square law Diode Modulator.	21/8/18	Completed
	9		Generation of DSB-SC Using Balanced Mod ⁿ . Explanation.	28/8/18	Completed
	10		Ring Modulator. How it suppressed carrier. Switching Modulator.	29/8/18	Completed
	11		Single Sideband Modulation (SSB). SSB with suppressed carrier (SSB-SC)	07/9/18	Completed
	12		Vestigial sideband (VSB) Basic concept and application.	08/9/18	Completed

AS
24/11/18

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	13		SSB-Sc, Tx. Bandwidth, Sideband filter example Advantages and Disadvantages.	12/9/18	<u>Completed</u>
	14		Demodulation of AM signals. Square law detectors and Envelope detectors.	14/9/18	<u>Completed</u>
	15		The Super Heterodyne Receiver for standard AM. IFRR, Radio, IMRR.	28/9/18	<u>Completed</u>
	16		Synchronous demod ⁿ of Amplitude Modulation	29/9/18	<u>Completed</u>
	17		DSB and SSB using Synchronous detection.	3/10/18	<u>Completed</u>
	18		Effect of frequency and phase errors in the local oscillator - DSB, SSB etc.	3/10/18	<u>Completed</u>
	19		Demodulation of SSB with pilot carrier. 3rd Method.	4/10/18	<u>Completed</u>

2/10/18

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	20		Angle Modulation, Instantaneous frequency & phase Time domain eqn. of FM & PM.	05/10/18	<u>Completed</u>
	21		NBFM, Phasor diagram. NBFM.	10/10/18	<u>Completed</u>
	22		FM to PM, PM to FM. FM Modulator, Reactance Varactor, Armstrong.	31/10/18	<u>Completed</u>
	23		Simple slope and Balanced slope detector.	01/11/18	<u>Completed</u>
	24		Foster-seely, Ratio Detector.	02/11/18	<u>Completed</u>

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
18	24	6	0

Remarks: _____

~~21/11/18~~
Signature of the Faculty

Remarks: _____

24/11/18
Signature of the HOD
DIC, ECE Deptt.
HETC, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



LECTURE DIARY

Department: Electronics and Communication Engineering	Session: 2018- 2019
Year: 3rd	Semester: 6th
Paper Name: Digital Communication	Paper Code: EC-601
Contact: 3L	Credit: 3
Available Weeks: 12	No. of Periods: 36L
Name of the Faculty: Prof. Swarup Samanta	Designation: Asst. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
<u>III</u>	1		Introduction to digital comm Basic block diagram and explanation. Advantages and disadvantages. Concept of sampling.	02/10/19	Part of textbooks Basic block diagram and explanation <u>Completed</u>
<u>III</u>	2		Pulse modulation system. PAM methods of sampling Ideal, Natural, Flat-Top. PTM, PWM, PPM.	05/10/19	<u>Completed</u>
<u>III</u>	3		Pulse Code Modulation (PCM) Basic steps. Quantization process. Quantization error. Binary encoding.	15/10/19	<u>Completed</u>
<u>III</u>	4		Quantization. Uniform, Non-uniform. Odd, even. Companding, A-law, μ -law companding.	16/10/19	<u>Completed</u>
<u>III</u>	5		Delta Modulation (DM). Block diagram with mathematics. Slope overload, distortion. Granular noise Advantages & Disadvantages.	16/10/19	<u>Completed</u>

SKS
21/07/19

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
III	6		Adaptive Delta Modulation (ADM) Block diagram, Advantages over DM. \rightarrow PCM, Linear prediction filter.	19/10/19	<u>Completed</u>
III	7		Concept of Line coding - NRZ, RZ - Polar, Unipolar, Bipolar. Manchester coding. Differential encoding. NRZ-L, NRZ-M, NRZ-S.	21/10/19	<u>Completed</u>
III	8		Different problem solve. Power spectral Density (PSD) of different line codes.	29/10/19	<u>Completed</u>
III	9		Inter Symbol Interference (ISI). Nyquist criterion for zero ISI. EYB Pattern.	30/10/19	<u>Completed</u>
III	10		Regenerative Repeater (RR) Equalizers - Zero forcing Adaptive. Problem.	02/02/19	<u>Completed</u>
IV	11		Digital modulation, Passband baseband, Types: ASK, PSK, FSK. Reception: coherent, noncoherent Requirements. Advantages, disadvantages. Bit rate, Band rate.	05/02/19	<u>Completed</u>
IV	12		ASK: Mathematical analysis, waveform, ASK Modulator, Demodulator coherent & non coherent. BW. PSD. Advantages. Disadvantages.	06/02/19	<u>Completed</u>

SKS
21/02/19

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
<u>IV</u>	13		FSK: Mathematical analysis, waveform, BPSK Tx. & Rx. Spectrum and Bandwidth of BPSK.	12/02/19	<u>Completed</u>
<u>IV</u>	14		PSK/BPSK: Mathematical analysis, waveform, BPSK Modulator, Reception of BPSK signal with explanation.	13/02/19	<u>Completed</u>
<u>IV</u>	15		Geometrical Representation of orthogonal and non-orthogonal BPSK signal. Demodulation using PLL.	16/02/19	<u>Completed</u>
<u>IV</u>	16		Spectrum of BPSK signal. Geometrical representation of BPSK signal. BW of BPSK. Drawbacks of BPSK signal in otp. Advantages.	20/02/19	<u>Completed</u>
<u>IV</u>	17		Differential Pulse Code Mod ² . Tx. & Rx. truth table of X-OR gate. Waveform, with important conclusion. BW	26/02/19	<u>Completed</u>
<u>IV</u>	18		QPSK/OQPSK: Waveform analysis with example. OQPSK Transmitter. Phasor diagram of QPSK signal.	27/02/19	<u>Completed</u>
<u>IV</u>	19		Non-off QPSK - Receiver with mathematical analysis. Ambiguity in the output.	02/03/19	<u>Completed</u>

6/11/19
2/10/19

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
<u>IV</u>	20		M-ary PSK	05/03/19	Completed
<u>IV</u>	21		Signal Space Representation of QPSK signal. Distance between two signal points. Spectrum of QPSK signal. BW of QPSK.	06/03/19	Completed
<u>IV</u>	22		Minimum Shift Keying. (MSK). GMSK.	09/03/19	Completed
<u>II</u>	23		Signal and vector analogy. Orthogonal signal space. message point. Orthogonal signal vectors.	12/03/19	Completed
<u>II</u>	24		Schwartz inequality. Gram-Schmidt orthogonalization procedure.	16/03/19	Completed
<u>II</u>	25		Baseband Receiver. Integrate and Dump type filter (IDF). Optimum filter. Probability of error function (P_e).	19/03/19	Completed
<u>II</u>	26		Probability of error (P_e) calculation of optimum filter.	20/03/19	Completed

SK
21/03/19

<u>II</u>	27		Matched filter: Transfer function, impulse response of matched filter.	26/03/19	Completed
<u>II</u>	28		Complementary error function. Type-I and Type-II errors.	30/03/19	Completed
<u>IV</u>	29		Error Probability of ASK, PSK, FSK.	02/04/19	Completed
<u>IV</u>	30		Probability of error in BPSK. Basic concept of OFDM, Constellation diagram.	03/04/19	Completed
<u>I</u>	31		Probability Theory and Random process. Conditional probability. Properties. communication example.	09/04/19	Completed
<u>I</u>	32		Joint probability, Statistical independence. Random variables - continuous and discrete.	10/04/19	Completed
<u>I</u>	33		Cumulative Distribution function (CDF), PDF. Gaussian distribution.	13/04/19	Completed

5/16/19
SK

I	34		PDF: Rayleigh, Rician, mean, variance.	17/04/19	Completed
I	35		Stationary and ergodic process. Auto-correlation covariance. PSD.	20/04/19	Completed
	36				
	37				
	38				
	39				
	40				

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
36	35	0	0

Remarks: _____

Ses 2/1/19
Signature of the Faculty

Remarks: _____

Ses 2/1/19
Signature of the HOD/
Coordinator
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



LECTURE DIARY

Department: Electronics and Communication Engineering	Session: 2019- 2020
Year: 4th	Semester: 7th
Paper Name: Optical Communication & N/W	Paper Code: EC-703B
Contact: 3L	Credit: 3
Available Weeks: 12	No. of Periods: 30 Hours
Name of the Faculty: SWARUP SAMANTA	Designation: Asst. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments/No of students present
1.	1.		Introduction to optical comm. system, principles, components, block diagram. Advantages of optical comm.	13/7/19	Completed
1.	2.		Ray theory: reflection, refraction Total internal reflection. Meridional rays, Skew rays. NA calculation.	24/7/19	Completed
1.	3.		Optical fiber waveguide: Structure, single mode and multimode fiber operation.	27/7/19	Completed
1.	4.		Mode, cutoff frequency, radius of curvature, Attenuation. Material and waveguide dispersion.	30/7/19	Completed
2.	5.		Light Emitting Diode: Semi-conductor configuration, operating principle, Efficiencies.	6/8/19	Completed

SS
6/8/19

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
2.	6.		LED structures, types, power and efficiency, coupling efficiency to fibers.	7/8/19	Completed
2.	7.		Laser diodes: principle, double heterostructure, gain and index guiding.	10/8/19	Completed
2.	8.		Semiconductor Laser struc. Distributed, Quantum Well lasers, Modes and narrow linewidth laser.	14/8/19	Completed
3.	9.		Optical detection principles, efficiency, responsivity, BW, Pre-amplifiers, Noise sources. Signal to Noise Ratio (SNR)	20/8/19	Completed
3.	10.		Optical detectors: PN junction photodiode, PIN Diode, APD.	21/8/19	Completed
1.	11.		Point-to-Point link and wavelength division multiplexing building blocks.	24/8/19	Completed
1.	12.		Intensity modulation/direct detection system, Principle of regeneration, WDM link.	27/8/19	Completed

6/11/19

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
A.	13		Optical Amplifiers: Erbium-Doped Fiber Amp. (EDFA)	2/9/19	Completed
A.	14		Semiconductor Optical Amplifier (SOA).	04/9/19	Completed
6.	15		Different forms of access N/w-s: Telephony, ISDN- Integrated services Digital Network	07/9/19	Completed
6	16		Fiber to Curb (FTTC) and Fiber to home (FTTH) Networks.	11/9/19	Completed
5.	17		Optical Networks: LAN, MAN, WAN, Topologies: Bus, star, Ring,	21/9/19	Completed
5.	18		Ethernet, Fiber Distributed Data Interface (FDDI)	16/10/19	Completed
5.	19		Telecom Networks: SDH/ SONET, Different forms of Access networks.	19/10/19	Completed

10/11/19

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	20.		Telephony, ISDN	22/10/19	Completed
	21.		Cable TV Broadcast and Switched Networks	29/10/19	Completed
	22.		HFC networks	5/11/19	Completed
	23.		FTTC and FTTH networks	6/11/19	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
30	23	—	—

Remarks: _____

Srasmita Samanta
Signature of the Faculty 6/11/19

Remarks: _____

[Signature] 6/11/19
Signature of the HOD/Coordinator
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



LECTURE DIARY


Department: Electronics and Communications Engineering
Year: 2nd
Paper Name: ~~Digital~~ ^{Analog} Communication
Contact: 3L
Available Weeks: 12
Name of the Faculty: Mr. Swarup Samanta
Designation: Assistant Professor

Session: 2019- 2020
Semester: 4th
Paper Code: EC-401
Credit: 3
No. of Periods: 36Hours

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments/No. of Students present
I	1		Introduction: Concept of communication, different type of communication system. Tx and Rx and channel.	2/10/20	Completed
I	2		Concept of modulation, need of modulation. Difficulties of comm. sys.	9/10/20	Completed
I	3		Amplitude Modulation. Mathematical expression. Time domain & frequency domain expression.	11/10/20	Completed
I	4		Single tone and multi tone AM. Carrier and sideband components. & BW Calculation	6/10/20	Completed
I	5		Power & Current equation of AM.	11/10/20	Completed

S/S
12/3/20

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
I	6		Double Sideband suppressed carrier modulation. Time and frequency domain expression.	12/2/20	Completed
I	7		DSB-SC - Power calculation BW calculation	25/2/20	Completed
I	8		Generation of DSB: Square law modulator Ring modulator	27/2/20	Completed
I	9		SSB-SC: Basic Concept. equation + Generation	5/3/20	Completed
I	10		Advantages + Disadvantages of SSB-SC. Generation, BW, Power	12/3/20	Completed
I	11		VSB: Basic Concept and Application	12/3/20	Completed
	12		Demodulation of AM wave	17/3/20	Online mode Completed


 12/3/20

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
12	13		Superheterodyne receiver	4/4/20	Online Completed
	14		Synchronous AM Demodulation	7/4/20	Online Completed
	15		frequency and phase errors in DSB-SC and SSB-SC	9/4/20	Online Completed
	16		Time Domain Representation of FM & PM	11/4/20	Online Completed
	17		NB FM	16/4/20	Online Completed
	18		Single tone FM and PM.	18/4/20	Online Completed
	19		Spectral Representation	21/4/20	Online Completed
	20		Power and BW	23/4/20	Online Completed

~~14/5~~


Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	21		WBFM Generation Using Armstrong Method	27/9/20	Completed
	22		Commercial FM requirements	28/9/20	Completed
	23		FM Detection	30/9/20	Completed
	24		Stereo FM	3/10/20	Completed
	25		Multiplexing FDN & TDM	5/10/20	Completed
	26		Random Signal and Noise	9/10/20	Completed
			—		
			—		

[Signature]

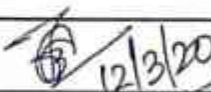
Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	27		Random Signal & Noise	12/5/20	online completed
	28		Types of Noise SNR calculation for AM	14/5/20	completed online
	29		CDF, PDF	19/5/20	Completed online
	30		Gaussian, Rayleigh, Rician distribution	21/5/20	Completed online
	31		TDM & FDM	26/5/20	Completed online

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
36	31	-	-

Remarks: _____


Signature of the Faculty

Remarks: _____


Signature of the HOD/
Coordinator
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 3rd
Paper Name: Digital Communication and Stochastic Process
Contact/week: 12
Available Weeks: 12
Name of the Faculty: Swarup Samanta
Designation: Assistant Professor

Session: 2020-21
Semester: 5th
Paper Code: EC-503
Credit: 3.5
No. of Periods available: 34L+6T

Module	Lecture No	Tutorial No	Topics to be covered	Date	Comments
III	L1		Introduction to digital communication Elements of digital communication system, Advantages and disadvantages.	17.08.20	Completed
	L2		Different types of sampling and Pulse Modulation (PAM, PWM, PPM)	19.08.20	"
	L3		Waveform coding: Introduction and Pulse Code Modulation (PCM)	24.08.20	"
	L4		Quantization: Uniform quantization, and quantization error. Transfer and error characteristics of even quantizer.	26.08.20	"
	L5		Transfer characteristics and error characteristics of Odd quantizer.	31.08.20	"
	L6		Non-uniform quantization, A-Law and μ -law companding	2.09.20	"
	L7		Delta Modulation and Demodulation (DM)	7.09.20	"

L8		Adaptive Delta modulation and Differential Pulse Code Modulation (DPCM)	9.09.20	Completed
L9		Concept of line coding: polar/ unipolar/ bipolar NRZ and RZ, Manchester, differential encoding, and their PSDs.	14.09.20	"
L10		Inter Symbol Interference (ISI), Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, RR.	16.09.20	"
	T1	Doubt clearance and Problem solving	21.09.20	"
	T2	Doubt clearance and Problem solving	23.09.20	"
IV	L11	Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, Concept of BASK.	28.09.20	"
	L12	Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals.	30.09.20	"
	L13	Generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal	5.10.20	"
	L14	Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal; error probability of BPSK, generation and detection of BPSK Signal, power spectrum of BPSK.	7.10.20	"
	L15	Concept of M-ary Communication, Quadrature Phase Shift Keying (QPSK), Offset Quadrature Phase Shift Keying.	12.10.20	"

L16		Generation and detection of QPSK signals, power spectra of QPSK signals,	14.10.20	Completed
L17		Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal.	19.10.20	,
L18		Gaussian Minimum Shift Keying: GMSK	21.10.20	,
L19		Basic concept of OFDM, constellation diagram	24.10.20	,
L20		Error Vector Magnitude (EVM), Relative Constellation Error (RCE), Conceptual idea for Vector Signal Analyzer (VSA)	28.10.20	,
	T3	Doubt clearance and Problem solving	2.11.20	,
	T4	Doubt clearance and Problem solving	4.11.20	,
I	L21	Introduction to Stochastic Processes (SPs): Definition and examples of SPs,	9.11.20	,
	L22	Classification of random processes according to state space and parameter space, elementary problems.	11.11.20	,
	L23	Stationary and ergodic processes, correlation coefficient, covariance.	16.11.20	,
	L24	Auto correlation function and its properties	18.11.20	,

	L25		Random binary wave	23.11.20	Completed
	L26		Power spectral density.	25.11.20	"
	L27		Definition and examples of Markov Chains, transition probability matrix,	30.11.20	"
	L28		Chapman Kolmogorov equations; calculation of n-step transition probabilities.	2.12.20	"
		T5	Doubt clearance and Problem solving	2.12.20	"
II	L29		Signal Vector Representation: Analogy between signal and vector, orthogonality and orthonormality.	7.12.20	"
	L30		Basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals.	9.12.20	"
	L31		Schwartz inequality, Gram-Schmidt orthogonalization procedure, maximum likelihood decision rule, decision boundary	14.12.20	"
	L32		Optimum correlation receiver, probability of error, error function, complementary error function.	16.12.20	"
	L33		Matched filter, probability of error function of matched filter.	21.12.20	"
	L34		Type-I and Type-II errors.	23.12.20	"

		T7	Doubt clearance and Problem solving	28.12.20	Completed
--	--	----	-------------------------------------	----------	-----------

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
42	40	—	—

Remarks: _____

SAS 28/12/20
Signature of the Faculty

Remarks: _____

[Signature] 28/12/2020
Signature of the HOD/Coordinator
HOD, HOD/Coordinator
Dept. of ECE, HETC, Ho...



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 2nd
Paper Name: Analog Communication
Contact: 3L
Available Weeks: 12
Name of the Faculty: Mr. Swarup Samanta

Session: 2020-2021
Semester: 4th
Paper Code: EC401
Credit: 3
No. of Periods: 36
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic / Topics Covered	Date	Comments
III	1	-	Introduction: Elements of Communication System-Transmitters, transmission channels, and receivers.	13.04.21	Completed
	2	-	Different types of communication, Concepts of modulation	14.04.21	"
	3	-	Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index	16.04.21	"
	4	-	Frequency domain representations, illustration of the carrier and sideband components; BW, Phasor diagram.	20.04.21	"
	5	-	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation.	21.04.21	"
	6	-	Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, BW.	23.04.21	"
	7	-	Single sideband modulation (SSB) both TC & SC.	27.04.21	"
	8	-	The basic concept of VSB, Spectra, and bandwidth.	29.04.21	"
II	9	-	Generation & Detection of Amplitude Modulation, Concept of Gated and Modulator.	30.04.21	"
	10	-	Square law modulators, Balanced Modulator.	30.04.21	"

	11	-	Generation of SSB: Filter method	4.05.21	Completed
	12	-	Phase shift method, and the Third method.	5.05.21	"
	13	-	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	7.05.21	"
	14	-	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections of DSB-FC	11.05.21	"
	15	-	Effects of Frequency & Phase mismatch, Corrections of DSB-SC and SSB-SC.	12.05.21	"
	16	-	Block diagram super heterodyne receiver, intermediate frequency, Local oscillator frequency image frequency.	12.05.21	"
III	17	-	Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations.	14.05.21	"
	18	-	Spectral representation of FM and PM for a single tone message.	18.05.21	"
	19	-	Bessel's functions, and Fourier series.	19.05.21	"
	20	-	Phasor diagram	21.05.21	"
	21	-	Generation of FM & PM: NBFM, Basic block diagram representation of the generation of FM & PM.	25.05.21	"
	22	-	WBFM, Basic block diagram representation of the generation of FM, VCO & Reactance modulator.	26.05.21	"
	23	-	Concept of frequency discriminators	28.05.21	"
	24	-	Phase Locked Loop	1.06.21	"
IV	25	-	Frequency Division Multiplexing, Time Division Multiplexing, (FDM).	2.06.21	"

26	-	Stereo – AM, and FM: Basic concepts with block diagrams.	4.06.21	Completed
27	-	Random Signals and Noise in Communication System, Internal & External noise, Noise Temperature, SNR, White and thermal noise, FOM.	8.06.21	"
28	-	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC.	9.06.21	"
29	-	SNR calculation for SSBSC & FM.	11.06.21	"
30	-	Conditional probability, communication example, joint probability, statistical independence,	15.06.21	"
31	-	random variable-continuous and discrete, cumulative distribution function, probability density function –	16.06.21	"
32	-	Gaussian, Rayleigh, and Rician, distribution	18.06.21	"

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
33	32	—	—

Remarks: _____

SRS/18.6.21
Signature of the Faculty

Remarks: _____

[Signature] 18/6/21
Signature of the HOD/DIC

HOD/DIC/Coordinator
Dept. of ECE, HETC, Hoogly



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 3rd
Paper Name: Digital Communication & Stochastic Process
Contact: 3L, 0.5T
Available Weeks: 12
Name of the Faculty: Mr. Swarup Samanta

Session: 2021-2022
Semester: 5th
Paper Code: EC503
Credit: 3.5
No. of Periods: 34L+6T
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topics to be covered	Date	Remarks
III	L1		Introduction to digital communication Elements of digital communication system Advantages and disadvantages.	02/09/21	Completed
	L2		Different types of sampling and Pulse Modulation (PAM, PWM, PPM).	4/9/21	Completed
	L3		Waveform coding: Introduction and PCM.	9/9/21	Completed
	L4		Quantization Process, uniform quantization, and quantization error.	11/9/21	Completed
	L5		Transfer characteristics and error characteristics of different types of quantizer.	14/9/21	Completed
	L6		Non-uniform quantization, A-Law and μ -law companding.	16/9/21	Completed
	L7		Delta Modulation and Adaptive Delta modulation.	18/9/21	Completed
	L8		Differential Pulse Code Modulation (DPCM).	21/9/21	Completed
	L9		Concept of line coding: polar/unipolar/bipolar NRZ and RZ, Manchester, differential encoding, and their PSDs.	23/9/21	Completed

	L10		Pulse shaping, ISI, Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction	25/9/24	Completed
		T1	Doubt clearance and Problem solving	28/9/24	Done
		T2	Doubt clearance and Problem solving	30/9/24	Done
IV	L11		Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, Basic Concept of BASK.	02/11/24	Completed
	L12		Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals.	4/11/24	Completed
	L13		Generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal.	6/11/24	Completed
	L14		Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal.	9/11/24	Completed
	L15		Concept of M-ary communication, M-ary PSK.	11/11/24	Completed
	L16		Generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase Shift Keying (OQPSK).	13/11/24	Completed
	L17		Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal.	16/11/24	Completed
			Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation diagram.	18/11/24	Completed
	L18		Some performance issues for different digital modulation techniques-Error Vector Magnitude.	20/11/24	Completed
	L19		Eye Pattern and Relative Constellation Error (RCE).	23/11/24	Completed

	L20		Conceptual idea for Vector Signal Analyzer (VSA).	25/11/21	Completed	
		T3	Doubt clearance and Problem solving	27/11/21	Done	
		T4	Doubt clearance and Problem solving	30/11/21	Done	
I	L21		Definition and examples of SPs, classification of random processes according to state space and parameter space, elementary problems.	14/12/21	Completed	
	L22		Classification of random processes according to state space and parameter space, elementary problems.	16/12/21	Completed	
	L23		Stationary and ergodic processes, correlation coefficient, covariance.	18/12/21	Completed	
	L24		Auto correlation function and its properties.	21/12/21	Completed	
	L25		Random binary wave.	23/12/21	Completed	
	L26		Power spectral density.	26/12/21	Completed	
	L27		Definition and examples of Markov Chains, transition probability matrix, Chapman Kolmogorov equations.	28/12/21	Completed	
	L28		Calculation of n-step transition probabilities.	30/12/21	Completed	
			T5	Doubt clearance and Problem solving.		Done
		L29		Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality.	30/12/21	Completed

II	L30		Basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals, likelihood functions.		
	L31		Schwartz inequality, Gram-Schmidt orthogonalization procedure.		
	L32		Integrate and dump type filter.		
	L33		Optimum correlation receiver.		
	L34		Matched filter, Type-I and Type-II errors.		
		T6		Doubt clearance and Problem solving	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	34	-	-

Remarks: _____

Srinamp Samanta
Signature of the Faculty 22/01/22

Remarks: _____

[Signature] 22/01/22
Signature of the HOD/Coordinator
DIC, ECE Dept
HETC, Hooghly.



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering

Year: 2nd

Paper Name: Analog Communication

Contact: 3L

Available Weeks: 12

Name of the Faculty: Mr. Swarup Samanta

Session: 2021-2022

Semester: 4th

Paper Code: EC401

Credit: 3

No. of Periods: 36

Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic / Topics Covered	Date	Comments
III	1	-	Introduction: Elements of Communication System-Transmitters, transmission channels, and receivers.	8/02/22	Completed
	2	-	Different types of communication, Concepts of modulation	9/02/22	Completed
	3	-	Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index	10/02/22	Completed
	4	-	Frequency domain representations, illustration of the carrier and sideband components; BW, Phasor diagram.	15/02/22	Completed
	5	-	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation.	16/02/22	Completed
	6	-	Double side band suppressed carrier (DSBSC) modulation: time and frequency domain expressions, BW.	17/02/22	Completed
	7	-	Single sideband modulation (SSB) both TC & SC.	21/02/22	Completed
	8	-	The basic concept of VSB, Spectra, and bandwidth.	9/03/22	Completed
II	9	-	Generation & Detection of Amplitude Modulation, Concept of Gated and Modulator.	10/03/22	Completed
	10	-	Square law modulators, Balanced Modulator.	13/03/22	Completed

	11	-	Generation of SSB: Filter method	16/03/22	
	12	-	Phase shift method, and the Third method.	17/03/22	Completed
	13	-	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	22/03/22	Completed
	14	-	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections of DSB-FC	23/03/22	Completed
	15	-	Effects of Frequency & Phase mismatch, Corrections of DSB-SC and SSB-SC.	31/03/22	Completed
	16	-	Block diagram super heterodyne receiver, intermediate frequency, Local oscillator frequency image frequency.	5/04/22	Completed
III	17	-	Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations.	6/04/22	Completed
	18	-	Spectral representation of FM and PM for a single tone message.	7/04/22	Completed
	19	-	Bessel's functions, and Fourier series.	12/4/22	Completed
	20	-	Phasor diagram	15/4/22	Completed
	21	-	Generation of FM & PM: NBFM, Basic block diagram representation of the generation of FM & PM.	19/4/22	Completed
	22	-	WBFM, Basic block diagram representation of the generation of FM, VCO & Reactance modulator.	21/4/22	Completed
	23	-	Concept of frequency discriminators	29/4/22	Completed
	24	-	Phase Locked Loop	9/05/22	Completed
IV	25	-	Frequency Division Multiplexing, Time Division Multiplexing, (FDM).	10/5/22	Completed

26	-	Stereo – AM, and FM: Basic concepts with block diagrams.	11/5/22	Completed
27	-	Random Signals and Noise in Communication System, Internal & External noise, Noise Temperature, SNR, White and thermal noise, FOM.	12/5/22	Completed
28	-	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC.	17/5/22	Completed
29	-	SNR calculation for SSBSC & FM.	24/5/22	Completed
30	-	Conditional probability, communication example, joint probability, statistical independence,	25/5/22	Completed
31	-	random variable-continuous and discrete, cumulative distribution function, probability density function –	31/5/22	Completed
32	-	Gaussian, Rayleigh, and Rician, distribution	01/06/22	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
32	32	0	0

Remarks: _____

Swarup Samanta
Signature of the Faculty 11/5/22

Remarks: _____

S/S/11/6/22
Signature of the HOD/DIC

DIC, ECE Deptt.
HETC, Hooghly.

S.K. 44 01.06.22
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering
Year: 3rd
Paper Name: Digital Communication & Stochastic Process
Contact: 3L, 0.5T
Available Weeks: 12
Name of the Faculty: Mr. Swarup Samanta

Session: 2022-2023
Semester: 5th
Paper Code: EC503
Credit: 3.5
No. of Periods: 34L+6T
Designation: Assistant Professor

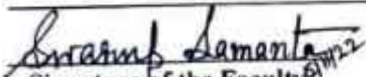
Module	Lecture No	Tutorial No	Topics to be covered	Date	Remarks
III	L1		Introduction to digital communication Elements of digital communication system Advantages and disadvantages.	09/07/22	Completed.
	L2		Different types of sampling and Pulse Modulation (PAM, PWM, PPM).	9/7/22	Completed
	L3		Waveform coding: Introduction and PCM.	12/7/22	Completed
	L4		Quantization Process, uniform quantization, and quantization error.	13/7/22	} Completed
	L5		Transfer characteristics and error characteristics of different types of quantizer.	13/7/22	
	L6		Non-uniform quantization, A-Law and μ -law companding.	15/7/22	Completed
	L7		Delta Modulation and Adaptive Delta modulation.	16/7/22	Completed
	L8		Differential Pulse Code Modulation (DPCM).	20/7/22	Completed
	L9		Concept of line coding: polar/unipolar/bipolar NRZ and RZ.	20/7/22	Completed

		Manchester, differential encoding, and their PSDs.		
	L10	Pulse shaping, ISI, Eye pattern, Nyquist criterion for zero ISI, equalizer, zero forcing equalizer, timing extraction	23/7/22	Completed
	T1	Doubt clearance and Problem solving	27/7/22	Completed
	T2	Doubt clearance and Problem solving	29/7/22	Completed
IV	L11	Types of Digital Modulation, coherent and non-coherent Binary Modulation Techniques, Basic Concept of BASK.	30/9/22	Completed
	L12	Coherent Frequency Shift Keying (FSK), Binary FSK, error probability of BFSK signals.	03/08/22	Completed
	L13	Generation and detection of Coherent Binary FSK signals, power spectra of BFSK signal.	05/08/22	Completed
	L14	Coherent Binary Phase Shift Keying (BPSK), geometrical representation of BPSK signal.	06/08/22	Completed
	L15	Concept of M-ary communication, M-ary PSK.	10/8/22	Completed
	L16	Generation and detection of QPSK signals, power spectra of QPSK signals, Offset Quadrature Phase Shift Keying (OQPSK).	12/8/22	Completed
	L17	Minimum Shift Keying (MSK), signal constellation of MSK waveforms, error probability of MSK signal.	12/8/22	Completed
		Gaussian Minimum Shift Keying: GMSK, basic concept of OFDM, constellation	20/8/22	Completed


	L28		Calculation of n-step transition probabilities.	15/10/22	Completed
		T5	Doubt clearance and Problem solving.	19/10/22	Completed
II	L29		Signal Vector Representation: Analogy between signal and vector, distinguishability of signal, orthogonality and orthonormality.	21/10/22	Completed
	L30		Basis function, orthogonal signal space, message point, signal constellation, geometric interpretation of signals.	29/10/22	Completed
	L31		Schwartz inequality, Gram-Schmidt orthogonalization procedure.	29/10/22	Completed
	L32		Integrate and dump type filter.	02/11/22	Completed
	L33		Optimum correlation receiver.	5/11/22	Completed
	L34		Matched filter, Type-I and Type-II errors.	5/11/22	Completed
			T6	Doubt clearance and Problem solving	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
10	39	—	—

Remarks: _____


Signature of the Faculty 01/11/22

Remarks: _____


Signature of the HOD/Coordinator
DIC, ECE Dept.
HETC, Hooghly.

29.11.22
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpat, Hooghly.



		diagram.		
	L18	Some performance issues for different digital modulation techniques-Error Vector Magnitude.	20/8/22	Completed
	L19	Eye Pattern and Relative Constellation Error (RCE).	24/8/22	Completed
	L20	Conceptual idea for Vector Signal Analyzer (VSA).	26/8/22	Completed
	T3	Doubt clearance and Problem solving	27/8/22	Completed
	T4	Doubt clearance and Problem solving	31/8/22	Completed
I	L21	Definition and examples of SPs, classification of random processes according to state space and parameter space.	02/09/22	Completed
	L22	Classification of random processes according to state space and parameter space, elementary problems.	7/9/22	Completed
	L23	Stationary and ergodic processes, correlation coefficient, covariance.	9/9/22	Completed
	L24	Auto correlation function and its properties.	10/9/22	Completed
	L25	Random binary wave.	14/9/22	Completed
	L26	Power spectral density.	16/9/22	Completed
	L27	Definition and examples of Markov Chains, transition probability matrix, Chapman Kolmogorov equations.	12/10/22	Completed



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING



COURSE DIARY

Department: Electronics and Communications Engineering

Year: 2nd

Paper Name: Analog Communication

Contact: 3L

Available Weeks: 12

Name of the Faculty: Mr. Swarup Samanta

Session: 2022-2023

Semester: 4th

Paper Code: EC401

Credit: 3

No. of Periods: 36

Designation: Assistant Professor

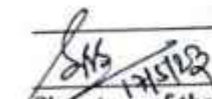
Module	Lecture No	Tutorial No	Topic / Topics Covered	Date	Comments
III	1	-	Introduction: Elements of Communication System-Transmitters, transmission channels, and receivers.	30/11/22	Completed
	2	-	Different types of communication, Concepts of modulation	7/12/22	Completed
	3	-	Amplitude modulation (AM), Time domain expression of the baseband signal, AM signal, Modulation Index	14/12/22	Completed
	4	-	Frequency domain representations, illustration of the carrier and sideband components, BW and Phasor diagram.	04/01/23	Completed
	5	-	Calculation of Transmitted power & sideband power & Efficiency; concept of under, over, and critical modulation.	21/2/23	Completed
	6	-	Double Side Band Suppressed Carrier modulation: time and frequency domain expressions, BW, Power calculation.	22/2/23	Completed
	7	-	Single sideband modulation (SSB) both TC & SC.	24/2/23	Completed
	8	-	The basic concept of VSB, Spectra, and bandwidth.	28/2/23	Completed
II	9	-	Generation & Detection of Amplitude Modulation, Concept of Gated and Modulator.	1/3/23	Completed

	10	-	Square law modulators, Balanced Modulator.	14/3/23	Completed
	11	-	Generation of SSB: Filter method	15/3/23	Completed
	12	-	Phase shift method, and the Third method.	28/3/23	Completed
	13	-	Demodulation for Linear Modulation: Demodulation of AM signals: Detection of AM by envelope detector.	29/3/23	Completed
	14	-	Synchronous detection for AM-SC, Effects of Frequency & Phase mismatch, Corrections of DSB-FC	4/4/23	Completed
	15	-	Effects of Frequency & Phase mismatch, Corrections of DSB-SC, and SSB-SC.	5/4/23	Completed
	16	-	Principle of Superheterodyne receivers, Block diagram, IF, F _{LO} , image frequency, image frequency rejection ratio.	11/4/23	Completed
III	17	-	Frequency Modulation (FM) and Phase Modulation (PM): Time and Frequency domain representations.	12/4/23	Completed
	18		Spectral representation of FM and PM for a single tone message.	18/4/23	Completed
	19	-	Bessel's functions, and Fourier series.	19/4/23	Completed
	20	-	Phasor diagram of FM.	25/4/23	Completed
	21	-	Narrow band frequency modulation, Basic block diagram representation of the generation of FM & PM.	26/4/23	Completed
	22	-	Wide-band Frequency modulation, Basic block diagram representation of the generation of FM, Concept of VCO.	10/5/23	Completed
	23	-	Concept of frequency discriminators	16/5/23	Completed
	24	-	Phase Locked Loop	17/5/23	Completed

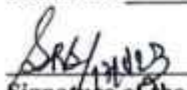
IV	25	-	Frequency Division Multiplexing, Time Division Multiplexing, (FDM).	7/7/22	Completed
	26	-	Stereo - AM, and FM: Basic concepts with block diagrams.	14/7/22	Completed
	27	-	Noise: Internal & External noise, Noise Temperature, SNR, White noise, thermal noise, Figure of Merit.	21/7/22	Completed
	28	-	Noise performance in Analog Communication systems: SNR calculation for DSB/TC, DSB-SC.	29/7/22	Completed
	29	-	SNR calculation for SSBSC & FM.	2/8/22	Completed
	30	-	Conditional probability, communication example, joint probability, statistical independence,	9/9/22	Completed
	31	-	Random variable-continuous and discrete, cumulative distribution function, probability density function.	16/9/22	Completed
	32	-	Gaussian, Rayleigh, and Rician, distribution.	21/10/22	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
32	33	01	01

Remarks: _____


Signature of the Faculty

Remarks: _____


Signature of the HOD/DIC
DIC, ECE Deptt.
HETC, Hooghly.

17.05.23
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Electronics and Communications Engineering	Session: 2022- 2023
Year: 2nd	Semester: 3 rd
Paper Name: Mathematics-III (Probability And Statistics)	Paper Code: BS-M301
Contact: 3L+0T	Credit: 3
Available Weeks: 12	No. of Periods: 3
Name of the Faculty: Dr. Rajesh Patra	Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Probability spaces, Some general properties of probability	07/07/2022	Completed
	L2		Conditional probability, Independent events and related problems.	09/07/2022	Partially Completed
	L3		Discrete Random variables, Independent Random variables, the multinomial distribution	12/07/2022	Partially Completed
	L4		Distribution Functions, Expectation, mean and variance	14/07/2022	Completed
	L5		Binomial distribution and its mean, variance and related problems, Binomial approximation to Poisson	16/07/2022	Partially Completed
	L6		Moments, variance of sums, Correlations and related problems, Tchebycheff's inequality and related problems	19/07/2022	Completed
		T1,T2	Module-I	21/07/2022 23/07/2022	Completed
Module-II: Continuous Probability distribution	L7		Continuous Random variables and their properties	26/07/2022	Completed
	L8		Distribution functions and density functions	28/07/2022	Completed
	L9		Normal distribution and its mean, variance	30/07/2022	Partially Completed
	L10		Standard normal distribution and related problems	02/08/2022	Completed
	L11		Exponential distribution and its mean, variance and related problems	04/08/2022	Completed
	L12		Gamma distribution and its mean, variance and related problems	06/08/2022	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
		T3,T4	Class taken from 26/07/2022 to 06/08/2022	13/08/2022 & 16/08/2022	Completed
Module-III: Bivariate distribution	L13		Bivariate distributions and their properties	18/08/2022	Partially Completed
	L14		Bivariate distribution of sums and quotients and related problems	20/08/2022	Partially Completed
	L15		Conditional densities	23/08/2022	Completed
	L16		Statement and proof of Baye's theorem and its applications	25/08/2022	Completed
Module-IV: Basic Statistics	L17		Measures of Central tendency: Mean	27/08/2022	Completed
	L18		Measures of Central tendency: Median and Mode	30/08/2022	Completed
	L19		Moments, skewness and Kurtosis and related problems	01/09/2022	Completed
	L20		Evaluation of statistical parameters for the distributions-Binomial	03/09/2022	Partially Completed
	L21		Evaluation of statistical parameters for the distributions-, Poisson and Normal	08/09/2022	Completed
	L22		Correlation and regression	10/09/2022	Partially Completed
	L23		Examples of Correlation and regression	10/09/2022	Completed
	L24		Rank correlation and related examples	13/09/2022	Completed
Module-V: Applied Statistics	L25		Curve fitting by the method of least squares- fitting of straight lines,	14/09/2022	Completed
	L26		Curve fitting by the method of least squares-second degree parabolas and more general curves	15/09/2022	Completed
	L27		Test of significance: Large sample test for single proportion related Theorems	20/09/2022	Partially Completed
	L28		Test of significance: Large sample test for single proportion related Examples	24/09/2022	Partially Completed
	L29		Difference of proportions, single mean	27/09/2022	Completed
	L30		Difference of means, and difference of standard deviations.	29/09/2022	Completed
Module-I: Basic Probability	L31		Remedial Class on Module-I	11/10/2022	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-II: Continuous Probability distribution	L32		Remedial Class on Module-II	13/10/2022	Completed
		T5	Module-III	15/10/2022	Completed
Module-IV: Basic Statistics	L33		Remedial Class on Module-IV	18/10/2022	Completed
Module-V: Applied Statistics	L34		Remedial Class on Module-V	20/10/2022	Completed
Module-VI: Small samples	L35		Test for single mean, difference of means	22/10/2022	Completed
	L36		Correlation coefficients, test for ratio of variances	29/10/2022	Partially Completed
	L37		Chi-square test for goodness of fit and independence of attributes.	01/11/2022	Partially Completed
	L38		More Examples on Module-VI	03/11/2022	Completed
	L39		Remedial Class on Module-VI	05/11/2022	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
36	44	08	06

Remarks: _____

R. Patra 05/11/2022

Signature of the Faculty

Remarks: _____

R. Patra 05/11/2022

Signature of the HOD

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Computer Science And Engineering (Section: B)
Year: 1st
Paper Name: Mathematics-IIA
Contact: 3L+1T
Available Weeks: 10
Name of the Faculty: Dr. Rajesh Patra

Session: 2022- 2023
Semester: 2nd
Paper Code: BS-M201
Credit: 4
No. of Periods: 4
Designation: Associate Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	22/02/2023	Partially Completed
	L2		Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	23/02/2023	Completed
	L3		Applications of Conditional Probability and Baye's Theorem, Related problems	01/03/2023	Completed
	L4		Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	02/03/2023	Partially Completed
	L5		Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	03/03/2023	Completed
	L6		Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	03/03/2023	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L7		Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	09/03/2023	Completed
	L8		Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	10/03/2023	Completed
	L9		Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	10/03/2023	Completed
	L10		Properties of correlation Coefficient, Variance of sums of random variables, Related sums	15/03/2023	Completed
	L11		Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	16/03/2023	Completed
		T1	Module-I	24/03/2023	Completed
Module-II: Continuous Probability Distributions	L13		Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	24/03/2023	Completed
	L14		Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	29/03/2023	Partially completed
	L15		Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	30/03/2023	Completed
		T2	Module-II	31/03/2023	Completed
Module-III: Bivariate Distributions	L16		Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	31/03/2023	Completed
	L17		Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0$, $F(x, -\infty)=0$, $F(+\infty, +\infty)=1$ etc. (Statements only)	05/04/2023	Partially completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-III: Bivariate Distributions	L18		Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	06/04/2023	Partially Completed
			Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples	12/04/2023	Completed
			Determination of conditional distributions with examples	12/04/2023	Completed
Module-IV: Basic Statistics	L19		Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	13/04/2023	Partially Completed
	L20		Frequency distribution and its representations, tabular and graphical, including histogram and ogives	16/04/2023 (online)	Completed
	L21		Determination of Mean, Median and Mode, related examples	17/04/2023 (online)	Completed
	L22		Range, Mean deviation, Standard deviation, Coefficient of variation	18/04/2023 (online)	Completed
	L23		Moments, skewness and kurtosis and their interpretations, related examples, Scatter diagram, Determination of correlation coefficient	19/04/2023 (online)	Completed
	L24		Determination of Rank correlation. Concept of linear regression, Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	27/04/2023	Completed
	Module-V: Applied Statistics	L25		Principle of least squares, Fitting of straight lines by the method of least squares, Related sums, Fitting of polynomials (2nd degree) and exponential curves, Definitions of random sample, Parameter and statistic.	28/04/2023	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-V: Applied Statistics	L26		Sampling distribution of a statistic, Sampling distribution of sample mean, Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion	30/04/2023 (online)	Completed
	L27		Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	07/05/2023 (online)	Completed
	L28		Large sample tests: use of CLT for testing single proportion, difference of two proportions, Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	09/05/2023 (online)	Completed
Module-VI: Small samples	L29		Basic concepts of Student's t, Chisquare and F Distributions	10/05/2023	Completed
	L30		Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	11/05/2023	Completed
	L31		Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	12/05/2023	Completed
	L32		Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table	12/05/2023	Completed
			T3	Module-III, IV, V & VI	13/05/2023	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	35		

Remarks: _____

R. Patne 16/05/2023

Signature of the Faculty

Remarks: _____

R. Patne 16/05/2023

Signature of the HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hoshangabad.



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Computer Science And Engineering (Section: A)
Year: 1st
Paper Name: Mathematics-IIA
Contact: 3L+1T
Available Weeks: 10
Name of the Faculty: Dr. Rajesh Patra

Session: 2022- 2023
Semester: 2nd
Paper Code: BS-M201
Credit: 4
No. of Periods: 4
Designation: Associate Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	21/02/2023	partially completed
	L2		Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	22/02/2023	partially completed
	L3		Applications of Conditional Probability and Baye's Theorem, Related problems	23/02/2023	Completed
	L4		Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	25/02/2023	partially completed
	L5		Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	28/02/2023	completed
	L6		Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	01/03/2023	completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L7		Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	02/03/2023	Partially Completed
	L8		Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	04/03/2023	Completed
	L9		Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	09/03/2023	Partially Completed
	L10		Properties of correlation Coefficient, Variance of sums of random variables, Related sums	11/03/2023	Completed
	L11		Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	14/03/2023	Completed
		T1	Module-I	15/03/2023	Completed
Module-II: Continuous Probability Distributions	L13		Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	16/03/2023	Partially Completed
	L14		Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	25/03/2023	Completed
	L15		Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	28/03/2023	Completed
		T2	Module-II	29/03/2023	Completed
Module-III: Bivariate Distributions	L16		Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	30/03/2023	Completed
	L17		Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0$, $F(x, -\infty)=0$, $F(+\infty, +\infty)=1$ etc. (Statements only)	01/04/2023	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-III: Bivariate Distributions	L18		Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	04/04/2023	Partially Completed
			Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples	05/04/2023	Completed
			Determination of conditional distributions with examples	06/04/2023	Completed
Module-IV: Basic Statistics	L19		Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	10/04/2023	Partially Completed
	L20		Frequency distribution and its representations, tabular and graphical, including histogram and ogives	11/04/2023	Partially Completed
	L21		Determination of Mean, Median and Mode, related examples	12/04/2023	Completed
	L22		Range, Mean deviation, Standard deviation, Coefficient of variation	13/04/2023	Completed
	L23		Moments, skewness and kurtosis and their interpretations, related examples, Scatter diagram, Determination of correlation coefficient	18/04/2023 (online)	Completed
	L24		Determination of Rank correlation. Concept of linear regression, Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	19/04/2023 (online)	Completed
	L25		Principle of least squares, Fitting of straight lines by the method of least squares, Related sums, Fitting of polynomials (2nd degree) and exponential curves, Definitions of random sample, Parameter and statistic,	23/04/2023 (online)	Completed
Module-V: Applied Statistics					

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-V: Applied Statistics	L26		Sampling distribution of a statistic, Sampling distribution of sample mean, Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion	24/04/2023 (online)	Completed
	L27		Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	25/04/2023	Completed
	L28		Large sample tests: use of CLT for testing single proportion, difference of two proportions, Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	27/04/2023	Partially completed
Module-VI: Small samples	L29		Basic concepts of Student's t, Chi-square and F Distributions	29/04/2023	Completed
	L30		Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	10/05/2023	Completed
	L31		Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	10/05/2023	Completed
	L32		Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table	11/05/2023	Completed
			T3	Module-III, IV, V & VI	13/05/2023	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	35	—	—

Remarks: _____

R. Patra
16/05/2023
Signature of the Faculty

Remarks: _____

R. Patra 16/05/2023
Signature of the HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Electronics and Communications Engineering
Year: 2nd
Paper Name: Mathematics-III (Probability And Statistics)
Contact: 3L+OT
Available Weeks: 12
Name of the Faculty: Dr. Rajesh Patra

Session: 2021- 2022
Semester: 3rd
Paper Code: BS-M301
Credit: 3
No. of Periods: 3
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Probability spaces, Some general properties of probability	06/09/2021	Completed
	L2		Conditional probability, Independent events and related problems.	07/09/2021	Completed
	L3		Discrete Random variables, Independent Random variables, the multinomial distribution	08/09/2021	Completed
	L4		Distribution Functions, Expectation, mean and variance	13/09/2021	Completed
	L5		Binomial distribution and its mean, variance and related problems, Binomial approximation to Poisson	20/09/2021	Partially Completed
	L6		Moments, variance of sums, Correlations and related problems, Tchebycheff's inequality and related problems	21/09/2021	Partially Completed
Module-II: Continuous Probability distribution	L7		Continuous Random variables and their properties	22/09/2021	Completed
	L8		Distribution functions and density functions	25/10/2021	Completed
	L9		Normal distribution and its mean, variance	26/10/2021	Completed
	L10		Standard normal distribution and related problems	27/10/2021	Completed
	L11		Exponential distribution and its mean, variance and related problems	01/11/2021	Completed
	L12		Gamma distribution and its mean, variance and related problems	02/11/2021	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments	
Module-III: Bivariate distribution	L13		Bivariate distributions and their properties	03/11/2021	Completed	
	L14		Bivariate distribution of sums and quotients and related problems	08/11/2021	Completed	
	L15		Conditional densities	16/11/2021	Completed	
	L16		Statement and proof of Baye's theorem and its applications	20/11/2021	Completed	
Module-IV: Basic Statistics	L17		Measures of Central tendency: Mean	23/11/2021	Completed	
	L18		Measures of Central tendency: Median and Mode	24/11/2021	Completed	
	L19		Moments, skewness and Kurtosis and related problems	27/11/2021	Completed	
	L20		Evaluation of statistical parameters for the distributions-Binomial	01/12/2021	Partially Completed	
	L21		Evaluation of statistical parameters for the distributions-, Poisson and Normal	04/12/2021	Partially Completed	
	L22		Correlation and regression	07/12/2021	Completed	
	L23		Examples of Correlation and regression	08/12/2021	Completed	
	L24		Rank correlation and related examples	11/12/2021	Completed	
	Module-V: Applied Statistics	L25		Curve fitting by the method of least squares- fitting of straight lines,	14/12/2021	Completed
		L26		Curve fitting by the method of least squares-second degree parabolas and more general curves	15/12/2021	Completed
L27			Test of significance: Large sample test for single proportion related Theorems	18/12/2021	Partially Completed	
L28			Test of significance: Large sample test for single proportion related Examples	22/12/2021	Completed	
L29			Difference of proportions, single mean	04/01/2022	Completed	
L30			Difference of means, and difference of standard deviations.	05/01/2022	Completed	
		T1	All Modules	05/01/2022	Completed	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
36	31		

Remarks: _____

R. Patra
05/01/2022
Signature of the Faculty

Remarks: _____

Mukherjee
06/01/2022
Signature of the HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Houghtly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Computer Science And Engineering (Section: A)
Year: 1st
Paper Name: Mathematics-IIA
Contact: 3L+1T
Available Weeks: 10
Name of the Faculty: Dr. Rajesh Patra

Session: 2021- 2022
Semester: 2nd
Paper Code: BS-M201
Credit: 4
No. of Periods: 3
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	16/03/2022	Completed
	L2		Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	22/03/2022	Partially Completed
	L3		Applications of Conditional Probability and Baye's Theorem, Related problems	23/03/2022	Completed
	L4		Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	24/03/2022	Partially Completed
	L5		Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	05/04/2022	Completed
	L6		Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	06/04/2022	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L7		Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	07/04/2022	Completed
	L8		Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	12/04/2022	Completed
	L9		Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables, Properties of correlation Coefficient, Variance of sums of random variables, Related sums	13/04/2022	Partially Completed
	L10		Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	19/04/2022	Completed
Module-II: Continuous Probability Distributions	L11		Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples.	20/04/2022	Partially Completed
	L12		Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	21/04/2022	Partially Completed
	L13		Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	28/04/2022	Completed
Module-III: Bivariate Distributions	L14		Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	05/05/2022	Completed
	L15		Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0, (x, -\infty)=0, F(+\infty, +\infty)=1$ etc. (Statements only)	10/05/2022	Partially Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-III: Bivariate Distributions	L16		Definition of probability mass function of a two dimensional discrete random variable with examples; Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	11/05/2022	Partially Completed
	L17		Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples	12/05/2022	Completed
	L18		Determination of conditional distributions with examples	17/05/2022	Completed
Module-IV: Basic Statistics	L19		Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	18/05/2022	Partially Completed
	L20		Frequency distribution and its representations, tabular and graphical, including histogram and Determination of Mean, Median and Mode, related examples	23/05/2022	Completed
	L21		Range, Mean deviation, Standard deviation, Coefficient of variation	24/05/2022	Completed
	L22		Moments, skewness and kurtosis and their interpretations, related examples, Scatter diagram, Determination of correlation coefficient	25/05/2022	Completed
	L23		Determination of Rank correlation. Concept of linear regression, Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	26/05/2022	Completed
Module-V: Applied Statistics	L24		Principle of least squares, Fitting of straight lines by the method of least squares, Related sums, Fitting of polynomials (2nd degree) and exponential curves, Definitions of random sample, Parameter and statistic,	28/05/2022	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-V: Applied Statistics	L25		Sampling distribution of a statistic, Sampling distribution of sample mean, Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion	30/05/2022	Completed
	L26		Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	31/05/2022	Completed
	L27		Large sample tests: use of CLT for testing single proportion, difference of two proportions, Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	01/06/2022	Partially completed
Module-VI: Small samples	L28		Basic concepts of Student's t, Chi-square and F Distributions, Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	07/06/2022	Completed
	L29		Use of F-Distribution for testing the hypothesis regarding comparison of two population variances, Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table	08/06/2022	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
30	29		

Remarks: _____

R. Patra
03/06/2022

Signature of the Faculty

Remarks: _____

R. Patra
08/06/2022

Signature of the HOD

Sd/- 4/4 08.06.22
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpal, Hooghly.H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Computer Science And Engineering (Section: B)

Year: 1st

Paper Name: Mathematics-IIA

Contact: 3L+1T

Available Weeks: 10

Name of the Faculty: Dr. Rajesh Patra

Session: 2021- 2022

Semester: 2nd

Paper Code: BS-M201

Credit: 4

No. of Periods: 3

Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	16/03/2022	Completed
	L2		Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	23/03/2022	Partially Completed
	L3		Applications of Conditional Probability and Baye's Theorem, Related problems	06/04/2022	Completed
	L4		Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	08/04/2022	Partially Completed
	L5		Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	09/04/2022	Completed
	L6		Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	16/04/2022	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L7		Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	18/04/2022	Completed
	L8		Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	20/04/2022	Partially completed
	L9		Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	22/04/2022	Partially completed
	L10		Properties of correlation Coefficient, Variance of sums of random variables, Related sums	23/04/2022	Completed
	L11		Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	29/04/2022	Completed
	Module-II: Continuous Probability Distributions	L12		Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	30/04/2022	Completed
L13			Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	06/05/2022	Completed
L14			Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	07/05/2022	Completed
Module-III: Bivariate Distributions		L15		Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	11/05/2022	Completed
	L16		Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0$, $F(x, -\infty)=0$, $F(+\infty, +\infty)=1$ etc. (Statements only)	13/05/2022	Partially completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-III: Bivariate Distributions	L17		Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	14/05/2022	Partially completed
	L18		Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples	23/05/2022	Completed
	L19		Determination of conditional distributions with examples	25/05/2022	Completed
Module-IV: Basic Statistics	L20		Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio, Frequency distribution and its representations, tabular and graphical, including histogram	27/05/2022	Partially completed
	L21		Determination of Mean, Median and Mode, related examples, Range, Mean deviation, Standard deviation, Coefficient of variation, Moments, skewness and kurtosis and their interpretations, related examples, Scatter diagram, Determination of correlation coefficient	28/05/2022	Partially completed
	L22		Determination of Rank correlation, Concept of linear regression, Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	30/05/2022	Completed
Module-V: Applied Statistics	L23		Principle of least squares, Fitting of straight lines by the method of least squares, Related sums, Fitting of polynomials (2nd degree) and exponential curves, Definitions of random sample, Parameter and statistic,	01/06/2022	Partially completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-V: Applied Statistics	L24		Sampling distribution of a statistic, Sampling distribution of sample mean, Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion	03/06/2022	Completed
	L25		Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region, Large sample tests: use of CLT for testing single proportion, difference of two proportions, Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	04/06/2022	Partially Completed
Module-VI: Small samples	L26		Basic concepts of Student's t, Chisquare and F Distributions, Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	06/06/2022	Completed
	L27		Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	07/06/2022	Completed
	L28		Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table	07/06/2022	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
30	28		

Remarks: _____

R. Patre
08/06/2022
Signature of the Faculty

Remarks: _____

Mukherjee 08/06/2022
Signature of the HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

S.H.L. 44 08.06.22

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Electronics and Communications Engineering

Year: 2nd

Paper Name: Mathematics-III(Probability & Statistics)

Contact: 3L+0T

Available Weeks: 12

Name of the Faculty: Mr. Rajesh patra

Session: 2020- 2021

Semester: 3rd

Paper Code: BS-M301

Credit: 3

No. of Periods: 3

Designation: Assistant
Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Synonyms, experiment, outcomes, random experiments, sample space, event	17/08/2020	Completed
	L2		Some types of events	18/08/2020	Completed
	L3		Definitions of probability, some basic theorems on probability	19/08/2020	Completed
	L4		Fundamental principle of counting, conditional probability & independent events	24/08/2020	Completed
	L5		Statement & proof of Baye's theorem	25/08/2020	Completed
	L6		Examples of application of Baye's theorem	26/08/2020	Completed
Module-II: Continuous Probability distribution	L7		Random variables, discrete & continuous random variables, distribution functions	31/08/2020	Completed
	L8		Theorems on distribution functions	02/09/2020	Completed
	L9		Example related to distribution function	07/09/2020	Completed
	L10		Pms, pdf and their fundamental properties	08/09/2020	Completed
	L11		Expectation & properties, moment	09/09/2020	Completed
	L12		Var(X) & standard deviation	14/09/2020	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-II: Continuous Probability distribution	L13		Examples on random variables	15/09/2020	Completed
	L14		Example on pdf	16/09/2020	Completed
	L15		Binomial distribution with example	21/09/2020	Completed
	L16		Poisson distribution	22/09/2020	Completed
	L17		Example of Poisson distribution	23/09/2020	Completed
	L18		Normal distribution , mean, variance	28/09/2020	Completed
	L19		Standard normal distribution & tabulation of standard normal	29/09/2020	Completed
	L20		Probability density curve of Normal distribution and 1 example	30/09/2020	Completed
	L21		Another type of example of normal distribution	02/11/2020	Completed
	L22		Exponential distribution	03/11/2020	Completed
	L23		Example of exponential distribution	04/11/2020	Completed
	L24		Gamma distribution with example	04/11/2020	Completed
	L25		mgf & mean , variance in terms of mgf	10/11/2020	Completed
	L26		Properties of mgf & deduction of mean, variance of binomial & normal distribution using mgf	23/11/2020	Completed
	L27		Example of mgf, Tchebycheff's inequality with examples	24/11/2020	Completed
	L28		Corellation, regression with working formula, properties of correlation coefficient	25/11/2020	Completed
	L29		Some properties of correlation coefficient and some examples	08/12/2020	Completed
	L30		Marginal pdf & Least squares method	08/12/2020	Completed
	L31		Regression coefficients, properties & example	08/12/2020	Completed
	L32		Poisson approximation to binomial & rank corellation	14/12/2020	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-IV: Basic Statistics	L33		Measures of central tendencies, Arithmetic mean	15/12/2020	Completed
	L34		Less than cumulative frequency and median, mode	16/12/2020	Completed
	L35		Skewness & Kurtosis	21/12/2020	Completed
Module-III: Bivariate distribution	L36		Bivariate distribution, properties, bivariate pmf	11/01/2021	Completed
	L37		Continuous bivariate distribution	18/01/2021	Completed
	L38		Example of bivariate distribution	19/01/2021	Completed
	L39		Another example of bivariate distribution	01/02/2021	Completed
	L40		Various measures of central tendencies, skewness, kurtosis etc	10/02/2021	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
36	40	04	

Remarks: _____

R. Patra 10/02/2021
Signature of the Faculty

Remarks: _____

Mukherjee 10/02/2021
Signature of the HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Houghly.



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Computer Science And Engineering
Year: 1st
Paper Name: Mathematics-IIA
Contact: 3L+1T
Available Weeks: 10
Name of the Faculty: Dr. Rajesh Patra

Session: 2020- 2021
Semester: 2nd
Paper Code: BS-M201
Credit: 4
No. of Periods: 4
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Definitions of random experiment, sample space, events space and probability function with examples. Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	13/04/2021	Completed
	L2		Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	17/04/2021	Partially Completed
	L3		Applications of Conditional Probability and Baye's Theorem, Related problems	21/04/2021	Completed
	L4		Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	22/04/2021	Partially Completed
	L5		Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	23/04/2021	Completed
	L6		Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	24/04/2021	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments	
Module-I: Basic Probability	L7		Multinomial Distribution as a generalization of Binomial distribution. Related sums. Poisson Distribution	28/04/2021	Completed	
	L8		Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	29/04/2021	Completed	
	L9		Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only)	30/04/2021	Completed	
	L10		Covariance and Correlation Coefficient between two random variables	05/05/2021	Completed	
	L11		Properties of correlation Coefficient, Variance of sums of random variables. Related sums	06/05/2021	Completed	
	L12		Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	07/05/2021	Completed	
		T1,T2	Module-I	12/05/2021, 13/05/2021	Completed	
	Module-II: Continuous Probability Distributions	L13		Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	14/05/2021	Completed
		L14		Expectation of a continuous random variable: Mean, Variance	15/05/2021	Completed
		L15		Moments. Related problems. Exponential Distribution and its Mean and Variance	19/05/2021	Completed
		L16		Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	20/05/2021	Completed
			T3,T4	Module-II	21/05/2021, 22/05/2021	Completed
Module-III: Bivariate Distributions	L17		Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	26/05/2021	Completed	

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-III: Bivariate Distributions	L18		Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments,)	27/05/2021	Completed
	L19		Right continuity property with respect to both arguments, $F(-\infty, y)=0$, $(x, -\infty)=0$, $F(+\infty, +\infty)=1$ etc. (Statements only)	28/05/2021	Completed
	L20		Definition of probability mass function of a two dimensional discrete random variable with examples,	29/05/2021	Completed
	L21		Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	02/06/2021	Completed
	L22		Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples	03/06/2021	Completed
	L23		Determination of conditional distributions with examples	04/06/2021	Completed
	Module-IV: Basic Statistics	L24		Concepts of population and sample, quantitative and qualitative data,	05/06/2021	Completed
L25			discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	09/06/2021	Completed
L26			Frequency distribution and its representations, tabular and graphical, including histogram and ogives	10/06/2021	Completed
L27			Determination of Mean, Median and Mode, related examples	11/06/2021	Completed
L28			Range, Mean deviation, Standard deviation, Coefficient of variation	12/06/2021	Completed
L29			Moments, skewness and kurtosis and their interpretations, related examples, Scatter diagram, Determination of correlation coefficient	17/06/2021	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	L30		Determination of Rank correlation. Concept of linear regression,	18/06/2021	Completed
	L31		Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	23/06/2021	Completed
Module-V: Applied Statistics	L32		Principle of least squares, Fitting of straight lines by the method of least squares, Related sums	24/06/2021	Completed
	L33		Fitting of polynomials (2nd degree) and exponential curves	25/06/2021	Completed
	L34		Definitions of random sample, Parameter and statistic	26/06/2021	Completed
Module-V: Applied Statistics	L35		Sampling distribution of a statistic, Sampling distribution of sample mean	28/06/2021	Completed
	L36		Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion	01/07/2021	Completed
	L37		Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	02/07/2021	Completed
	L38		Large sample tests: use of CLT for testing single proportion, difference of two proportions	07/07/2021	Completed
	L39		Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	08/07/2021	Completed
Module-VI: Small samples	L40		Basic concepts of Student's t, Chi-square and F Distributions	09/07/2021	Completed
	L41		Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	14/07/2021	Completed
	L42		Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	15/07/2021	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	L43		Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set.	16/07/2021	Completed
	L44		Use of Chi-square test to check the independence of attributes from a given contingency table	22/07/2021	Completed
		T5	Module-III, IV, V & VI	28/07/2021	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	51	11	

Remarks: _____

R. Patra 28/07/2021

Signature of the Faculty

Remarks: _____

Mukherjee 28/07/2021

Signature of the HOD

H. O. D.

Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Electronics and Communications Engineering	Session: 2019- 2020
Year: 2nd	Semester: 3 rd
Paper Name: Mathematics-III (Probability & Statistics)	Paper Code: BS-M301
Contact: 3L+0T	Credit: 3
Available Weeks: 12	No. of Periods: 4
Name of the Faculty: Mr. Rajesh Patra	Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Probability spaces, Some general properties of probability	05/07/2019	Completed
	L2		Conditional probability, Independent events and related problems.	09/07/2019	Completed
	L3		Discrete Random variables, Independent Random variables, the multinomial distribution	10/07/2019	Completed
	L4		Distribution Functions, Expectation, mean and variance	10/07/2019	Completed
	L5		Binomial distribution and its mean, variance and related problems, Binomial approximation to Poisson	12/07/2019	Completed
	L6		Moments, variance of sums, Correlations and related problems, Tchebycheff's inequality and related problems	16/07/2019	Completed
		T1	Module-I	17/07/2019	Completed
Module-II: Continuous Probability distribution	L7		Continuous Random variables and their properties	17/07/2019	Completed
	L8		Distribution functions and density functions	19/07/2019	Completed
	L9		Normal distribution and its mean, variance	23/07/2019	Completed
	L10		Standard normal distribution and related problems	24/07/2019	Completed
	L11		Exponential distribution and its mean, variance and related problems	24/07/2019	Completed
	L12		Gamma distribution and its mean, variance and related problems	26/07/2019	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
		T2	Class taken from the previously	30/07/2019	Completed
Module-III: Bivariate distribution	L13		Bivariate distributions and their properties	31/07/2019	Completed
	L14		Bivariate distribution of sums and quotients and related problems	31/07/2019	Completed
	L15		Conditional densities	02/08/2019	Completed
	L16		Statement and proof of Baye's theorem and its applications	06/08/2019	Completed
Module-IV: Basic Statistics	L17		Measures of Central tendency: Mean	07/08/2019	Completed
	L18		Measures of Central tendency: Median and Mode	09/08/2019	Completed
	L19		Moments, skewness and Kurtosis and related problems	13/08/2019	Completed
	L20		Evaluation of statistical parameters for the distributions-Binomial	14/08/2019	Completed
	L21		Evaluation of statistical parameters for the distributions-, Poisson and Normal	14/08/2019	Completed
	L22		Correlation and regression	16/08/2019	Completed
	L23		Examples of Correlation and regression	20/08/2019	Completed
	L24		Rank correlation and related examples	21/08/2019	Completed
Module-V: Applied Statistics	L25		Curve fitting by the method of least squares- fitting of straight lines,	27/08/2019	Completed
	L26		Curve fitting by the method of least squares-second degree parabolas and more general curves	03/09/2019	Completed
	L27		Test of significance: Large sample test for single proportion related Theorems	04/09/2019	Completed
	L28		Test of significance: Large sample test for single proportion related Examples	06/09/2019	Completed
	L29		Difference of proportions, single mean	11/09/2019	Completed
	L30		Difference of means, and difference of standard deviations.	13/09/2019	Completed
Module-I: Basic Probability	L31		Remedial Class on Module-I	17/09/2019	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-II: Continuous Probability distribution	L32		Remedial Class on Module-II	20/09/2019	Completed
		T3	Module-III	24/09/2019	Completed
Module-IV: Basic Statistics	L33		Test for single mean, difference of means	25/09/2019	Completed
Module-V: Applied Statistics	L34		Correlation coefficients, test for ratio of variances	16/10/2019	Completed
Module-VI: Small samples	L35		Chi-square test for goodness of fit and independence of attributes	23/10/2019	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
48	38		02

Remarks: _____

R. Patra 25/10/2019
Signature of the Faculty

Remarks: _____

Mukherjee 25/10/2019
Signature of the HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Computer Science And Engineering
Year: 1st
Paper Name: Mathematics-IIA
Contact: 3L+1T
Available Weeks: 10
Name of the Faculty: Mr. Rajesh Patra

Session: 2019- 2020
Semester: 2nd
Paper Code: BS-M201
Credit: 4
No. of Periods: 4
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Definitions of random experiment, sample space, events space and probability function with examples, Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	21/01/2020	Completed
	L2		Deduction of Classical Definition and elementary results from the definition of Probability Function, Addition Law and its generalization, Boole's Inequality, Conditional Probability, Independent Event, Multiplicative Law	24/01/2020	Partially completed
	L3		Applications of Conditional Probability and Baye's Theorem, Related problems	25/01/2020	Completed
	L4		Definition of Random Variable, Discrete and Continuous Random Variables with examples. Probability mass function and probability distribution function related to a discrete random variable with examples	31/01/2020	Partially completed
	L5		Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	01/02/2020	Completed
	L6		Bernoullean Sequence of Trials, Binomial Probability Distribution, Mean and Variance of Binomial Distribution, Related Problems	04/02/2020	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L7		Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	06/02/2020	Completed
	L8		Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	07/02/2020	Completed
	L9		Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	08/02/2020	Partially completed
	L10		Properties of correlation Coefficient, Variance of sums of random variables, Related sums	11/02/2020	Completed
	L11		Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	14/02/2020	Completed
Module-II: Continuous Probability Distributions	L12		Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	15/02/2020	Completed
	L13		Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	18/02/2020	Partially completed
	L14		Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	22/02/2020	Completed
		T1	Module-I,II	26/02/2020	Completed
Module-III: Bivariate Distributions	L15		Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	27/02/2020	Partially completed
	L16		Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments, Right continuity property with respect to both arguments, $F(-\infty, y)=0, (x, -\infty)=0, F(+\infty, +\infty)=1$ etc. (Statements only)	03/03/2020	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-III: Bivariate Distributions	L17		Definition of probability mass function of a two dimensional discrete random variable with examples, Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	05/03/2020	Partially Completed
			Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples	06/03/2020	Completed
			Determination of conditional distributions with examples	07/03/2020	Completed
Module-IV: Basic Statistics	L18		Concepts of population and sample, quantitative and qualitative data, discrete and continuous data, scales of measurement nominal, ordinal, interval and ratio	12/03/2020	Completed
	L19		Frequency distribution and its representations, tabular and graphical, including histogram and ogives	13/03/2020	Completed
	L20		Determination of Mean, Median and Mode, related examples	14/03/2020	Completed
	L21		Range, Mean deviation, Standard deviation, Coefficient of variation	24/03/2020 (online)	Completed
	L22		Moments, skewness and kurtosis and their interpretations, related examples, Scatter diagram, Determination of correlation coefficient	25/03/2020 (online)	Completed
	L23		Determination of Rank correlation. Concept of linear regression, Concept and determination of regression lines (Formulas only), Properties of regression coefficients and related sums.	26/03/2020 (online)	Completed
Module-V: Applied Statistics	L24		Principle of least squares, Fitting of straight lines by the method of least squares, Related sums, Fitting of polynomials (2nd degree) and exponential curves, Definitions of random sample, Parameter and statistic,	13/04/2020 (online)	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-V: Applied Statistics	L25		Sampling distribution of a statistic, Sampling distribution of sample mean, Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion	22/04/2020 (online)	Completed
	L26		Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	28/04/2020 (online)	Completed
	L27		Large sample tests: use of CLT for testing single proportion, difference of two proportions, Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	29/04/2020 (online)	Completed
Module-VI: Small samples	L28		Basic concepts of Student's t, Chisquare and F Distributions	04/05/2020 (online)	Completed
	L29		Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	04/06/2020 (online)	Completed
	L30		Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	04/07/2020 (online)	Completed
	L31		Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table	04/12/2020 (online)	Completed
		T2	Module-III, IV, V & VI	05/12/2020 (online)	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	33		

Remarks: _____

R. Patra 07/12/2020

Signature of the Faculty

Remarks: _____

Mukherjee 07/12/2020

Signature of the HOD

H. O. D.

Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Electronics and Communications Engineering	Session: 2018- 2019
Year: 2nd	Semester: 3 rd
Paper Name: Mathematics-III	Paper Code: M302
Contact: 3L+1T	Credit: 4
Available Weeks: 12	No. of Periods: 3
Name of the Faculty: Mr. Rajesh Patra	Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module:I Fourier Series and Fourier Transform	L1		Introduction, Periodic functions: Properties, Even & Odd functions: Properties	25/07/2018	Completed
	L2		Euler's Formulae for Fourier Series, Fourier Series for functions of period 2π	26/07/2018	Completed
	L3		Fourier Series for functions of period $2L$	27/07/2018	Completed
	L4		Dirichlet's conditions, Sum of Fourier series. Examples	02/08/2018	Completed
	L5		Special wave forms: Square wave, Half wave Rectifier	03/08/2018	Completed
	L6		Full wave Rectifier, Saw-toothed wave, Triangular wave	08/08/2018	Completed
		T1	Tutorial on previous Topics	09/08/2018	Completed
		T2	Tutorial on previous Topics	10/08/2018	Completed
	L7		Theorem for the convergence of Fourier Series (statement only). Fourier Series of a function with its periodic extension	16/08/2018	Completed
	L8		Half Range Fourier Series: Construction of Half range Sine Series, Construction of Half range Cosine Series	17/08/2018	Completed
		T3	Tutorial on L7,L8	23/08/2018	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
	L9		Parseval's Identity (statement only). Examples; Fourier Integral Theorem (statement only)	24/08/2018	Completed
	L10		Fourier Transform of a function, Fourier Sine and Cosine Integral Theorem (statement only)	29/08/2018	Completed
	L11		Fourier Cosine & Sine Transforms. Fourier, Fourier Cosine & Sine Transforms of elementary functions	30/08/2018	Completed
		T4	Tutorial on L9,L10,L11	31/08/2018	Completed
	L12		Properties of Fourier Transform: Linearity, Shifting, Change of scale, Modulation. Examples. Fourier Transform of Derivatives.	06/09/2018	Partially Completed
	L13		Convolution Theorem (statement only), Inverse of Fourier Transform, Examples.	07/09/2018	Completed
Module: III Probability	L14		Introduction to probability	12/09/2018	Completed
	L15		Classical definition and its limitations. Axiomatic definition.	13/09/2018	Completed
	L16		Some Theorems on probability	26/09/2018	Completed
	L17		Elementary deduction, Frequency interpretation of probability	03/10/2018	Completed
	L18		Addition rule. Compound and conditional problem, Independent events, Multiplication rule	04/10/2018	Completed
	L19		Baye's theorem(only statement) and problems	05/10/2018	Completed
		T5	Tutorial on L14 to L19	10/10/2018	Completed
	L20		Random Variables. (Discrete and continuous) mass and density function	11/10/2018	Completed
	L21		expectation, variance and examples	30/10/2018	Completed
	L22		Probability distributions- Binomial, Poisson	31/10/2018	Completed
	L23		Uniform, Exponential	31/10/2018	Completed
	L24		Normal distributions and related problems	01/11/2018	Completed
	L25		Mean and variance - Binomial, Poisson and Normal distributions	01/11/2018	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
		T6	Tutorial on L20 to L23	02/11/2018	Completed
		T7	Tutorial on L24 & L25	02/11/2018	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
36	32		

Remarks: _____

R. Patra 02/11/2018
Signature of the Faculty

Remarks: _____

Signature of the HOD

P. Debrata
2.11.18

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE & HUMANITIES



LECTURE DIARY

Department: Computer Science And Engineering
Year: 1st
Paper Name: Mathematics-IIA
Contact: 3L+1T
Available Weeks: 10
Name of the Faculty: Mr. Rajesh Patra

Session: 2018- 2019
Semester: 2nd
Paper Code: BS-M201
Credit: 4
No. of Periods: 4
Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L1		Definitions of random experiment, sample space, events space and probability function with examples,	02/01/2019	Completed
	L2		Mathematical concept of a probability space (Ω, B, P) , where the symbols represents the sample space, event space, and probability function respectively	03/01/2019	Completed
	L3		Deduction of Classical Definition and elementary results from the definition of Probability Function,	04/01/2019	Completed
	L4		Addition Law and its generalization, Boole's Inequality,	05/01/2019	Completed
	L5		Conditional Probability, Independent Event, Multiplicative Law	10/01/2019	Completed
	L6		Applications of Conditional Probability and Baye's Theorem, Related problems	15/01/2019	Completed
	L7		Definition of Random Variable, Discrete and Continuous Random Variables with examples	16/01/2019	Completed
	L8		Probability mass function and probability distribution function related to a discrete random variable with examples	17/01/2019	Partially Completed
	L9		Expectation of a discrete random variable: Mean, Variance and Moments. Related problems	19/01/2019	Completed
	L10		Bernoullean Sequence of Trials, Binomial Probability Distribution,	21/01/2019	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-I: Basic Probability	L11		Mean and Variance of Binomial Distribution, Related Problems	29/01/2019	Completed
	L12		Multinomial Distribution as a generalization of Binomial distribution, Related sums, Poisson Distribution	30/01/2019	Completed
	L13		Poisson approximation of Binomial Distribution (Statement only), Mean and Variance of Poisson Distribution, Problems related to Poisson Distribution	31/01/2019	Partially Completed
	L14		Distribution of sum of independent discrete random variables with emphasis on Binomial and Poisson variates (Results only), Covariance and Correlation Coefficient between two random variables	02/02/2019	Completed
	L15		Properties of correlation Coefficient, Variance of sums of random variables, Related sums	05/02/2019	Completed
	L16		Chebyshev's Inequality (Statement only) and related sums, Concept of convergence in probability, Central limit theorem and Weak law of large numbers (Statement only)	06/02/2019	Partially Completed
Module-II: Continuous Probability Distributions	L17		Definition of Continuous Random Variables, Probability density function and probability distribution function related to a continuous random variable with examples	07/02/2019	Completed
	L18		Expectation of a continuous random variable: Mean, Variance and Moments. Related problems. Exponential Distribution and its Mean and Variance	12/02/2019	Completed
	L19		Gamma Distribution and its properties, Related sums Normal Distribution and its Properties, Related sums	13/02/2019	Completed
		T1	Module-I,II	14/02/2019	Completed
Module-III: Bivariate Distributions	L20		Concept and definition of joint density and distribution functions $f(x,y)$ and $F(x,y)$ of two random variables (discrete and continuous) X and Y, Examples	16/02/2019	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-III: Bivariate Distributions	L21		Properties of bivariate distributions: Monotonic property of $F(x, y)$ with respect to both arguments,	19/02/2019	Completed
	L22		Right continuity property with respect to both arguments, $F(-\infty, y)=0$, $F(x, -\infty)=0$, $F(+\infty, +\infty)=1$ etc. (Statements only)	19/02/2019	Completed
	L23		Definition of probability mass function of a two dimensional discrete random variable with examples,	20/02/2019	Completed
	L24		Definition of Marginal distributions and its determination in case two dimensional discrete random variables and related examples	21/02/2019	Partially Completed
	L25		Definition of Marginal distributions and their determination in case two dimensional continuous random variables and related examples	26/02/2019	Completed
	L26		Determination of conditional distributions with examples	27/02/2019	Completed
Module-IV: Basic Statistics	L27		Concepts of population and sample, quantitative and qualitative data, discrete and continuous data,	28/02/2019	Completed
	L28		Scales of measurement nominal, ordinal, interval and ratio	02/03/2019	Completed
	L29		Frequency distribution and its representations, tabular and graphical, including histogram and ogives	05/03/2019	Completed
	L30		Determination of Mean, Median and Mode, related examples	06/03/2019	Completed
	L31		Range, Mean deviation, Standard deviation, Coefficient of variation	07/03/2019	Completed
	L32		Moments, skewness and kurtosis and their interpretations, related examples, Scatter diagram, Determination of correlation coefficient	12/03/2019	Completed
	L33		Determination of Rank correlation. Concept of linear regression, Concept and determination of regression lines (Formulas only),	16/03/2019	Completed

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Module-IV: Basic Statistics	L34		Properties of regression coefficients and related sums.	19/03/2019	Completed
Module-V: Applied Statistics	L35		Principle of least squares, Fitting of straight lines by the method of least squares, Related sums, Fitting of polynomials (2nd degree) and exponential curves,	26/03/2019	Partially Completed
	L36		Definitions of random sample, Parameter and statistic	28/03/2019	Completed
	L37		Sampling distribution of a statistic, Sampling distribution of sample mean, Definitions of standard errors of sample mean (SRSWR and SRSWOR), Sample variance and sample proportion	30/03/2019	Partially Completed
	L38		Definitions of Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region	02/04/2019	Partially Completed
	L39		Large sample tests: use of CLT for testing single proportion, difference of two proportions, Tests for single mean, difference of two means, Tests for standard deviation and difference of standard deviations	04/04/2019	Partially Completed
Module-VI: Small samples	L40		Basic concepts of Student's t, Chisquare and F Distributions, Use of t-statistic for testing the hypothesis regarding a population mean and difference between two population means	09/04/2019	Completed
	L41		Use of F-Distribution for testing the hypothesis regarding comparison of two population variances	11/04/2019	Completed
	L42		Use of Chi-square test to determine the goodness of fit of some theoretical distributions to the sample data set. Use of Chi-square test to check the independence of attributes from a given contingency table	16/04/2019	Partially Completed
		T2	Module: III, IV, V, VI	17/04/2019	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	44	04	

Remarks: _____

R. Patra 17/04/2019

Signature of the Faculty

Remarks: _____

Signature of the HOD

P. Subramanian
17.4.2019

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Houghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering

Year: 2nd

Paper Name: Energy Science & Engineering

Contact: 10 hours

Available Weeks: 10

Name of the Faculty: JAYANTA BANDYOPADHYAY

Session: 2018- 2019

Semester: 3rd

Paper Code: CE(ES)302

Credit: 2

No. of Periods: 1 per week

Designation: Asst. Prof.

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
1	L1	-	Introduction of Energy Science: scientific principles and historical interpretation to place, energy use in the context of pressing societal, environmental and climate issues	03-07-2018	Completed
	L2	-	Introduction to energy systems and resources, introduction to energy, sustainability and the environment	10-07-2018	Completed
	-	T1	World map showing energy reserves by source, total energy consumption and per capita energy consumption and carbon-foot print	17-07-2018	Completed
3	L3	-	Energy & Environment: Introduction to clean energy, technologies and its importance in sustainable development for energy efficiency and conservation	24-07-2018	Partially Completed
	L4	-	Introduction to economies of energy, how the economic system determines production and consumption, linkages between economic and environmental outcomes	31-07-2018	Completed
	-	T2	How future energy use can be influenced by economic, environmental, trade and research policy, Study the functioning of an Electrostatic precipitator in thermal power plant and uses of coarse and fine ash from thermal power plants	07-08-2018	Completed
5	L5	-	Engineering for Energy conservation: Concept of Green building and Green architecture, choice of building materials, location, design and operation for green building	14-08-2018	Completed
	L6	-	Leed ratings, identification of energy related enterprises that represent the breadth of the industry and prioritizing as candidates, embodied energy analysis and use as tool for measuring sustainability	21-08-2018	Completed
	L7	-	Energy audit of facilities and optimization of energy consumption, energy audit of departmental building in college	28-08-2018	Partially Completed

	-	T3	Draw a typical geometrical orientation of a house in your area to avoid sun's radiation in the bed room in the evening; Identify typical examples of Indian buildings having various LEED ratings; List various building materials with their embodied energy content	04-09-2018	Completed
--	---	----	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------	-----------

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
10	10	0	0

Remarks: Syllabus completed so far

M. B. S.

Signature of the Faculty

Remarks: Verified

A. Chattopadhyay

Signature of the HOD





HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering

Year: 2nd

Paper Name: Introduction to Fluid Mechanics

Contact: 2L+0T

Available Weeks: 12

Name of the Faculty: Piyali Das

Session: 2018- 2019

Semester: 4th

Paper Code: CE(ES)401

Credit: 2

No. of Periods: 12

Designation: Asst. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
3	L1	---	The velocity field, Eulerian and Lagrangian flow descriptions, concept of one, two and three dimensional flows, steady and unsteady flow	02/01/2019	Completed
3	L2	---	Stream lines, streak lines, pathlines and acceleration field	09/01/2019	PPT was shown
3	L3	---	Control volume and system representation and numericals, continuity equation and related problem	16/01/2019	Completed
3	L4	---	Momentum equation and its application, numericals	30/01/2019	Completed
3	L5	---	Moment of Momentum equation and its application, numericals	06/02/2019	Completed
3	L6	---	Application to pipe bend and numericals	13/02/2019	Completed
6	L7	---	Laminar flow, Turbulent flow, Reynolds number, critical velocity and velocity distribution	20/02/2019	PPT was shown
6	L8	---	Shear stress at pipe wall, Loss of head for laminar flow and turbulent flow	27/02/2019	Completed
6	L9	---	Darcy-Weisbach formula and concept of friction factor	06/03/2019	Completed
6	L10	---	Numericals related to Darcy – weisbach equation	13/03/2019	Completed
6	L11	---	Expansion head loss and related numerical	03/04/2019	Completed

6	L12	—	Contraction head loss and related numerical	10/04/20 19	Completed
7	L13	—	Pipe in series and parallel related, branching pipe related to problem	17/04/20 19	PPT was shown
7	L14	—	Pipe Networks and related problem	30/04/20 19	PPT was shown

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
12	14	2	0

Remarks: Most of the classes were taken with good percentage of students present in class.

ADas

Signature of the Faculty

Remarks: Verified

A. Chattopadhyay
Signature of the HOD





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering	Session: 2019- 2020
Year: 4 th	Semester: 7 th
Paper Name: Water resource Engineering	Paper Code: CE702
Contact: 16 hours	Credit: 3
Available Weeks: 16	No. of Periods: 1 per week
Name of the Faculty: PIYALI DAS	Designation: Asst. Prof.

Module	Lecture No	Topic/Topics covered	Date	Comments
5	L1	Evaporation and evaporation process, Dalton's law of Evaporation, factors affecting evaporation process	16-07-2019	Completed
	L2	Measurement of evaporation- description and functioning of Pan Evaporimeter, Pan Coefficient	19-07-2019	Completed
	L3	Evapotranspiration, concept of AET and PET, measurement of ET	23-07-2019	Completed
	L4	Estimation of ET by Blaney-Criddle formulae and related numericals	26-07-2019	Completed
	L5	Infiltration- process, factors affecting infiltration, Infiltration rate and infiltration capacity	30-07-2019	Completed
	L6	Measurement of infiltration, Infiltration equations and infiltration indices (W index and ϕ index)	02-08-2019	Completed
	L7	Numericals related to infiltration indices (W index and ϕ index)	06-08-2019	Completed
7	L8	Description of process and components of run-off	09-08-2019	Completed
	L9	Factors affecting run-off, Characteristics of stream	20-08-2019	Completed
3	L10	Stream flow measurement: Direct methods: Area velocity method, dilution technique and related problem	23-08-2019	Completed
	L11	Direct method: Ultra-sonic method and electromagnetic method, Indirect method: Slope area method and related problem	27-08-2019	Completed
	L12	Stage discharge relation and related problem	30-08-2019	Completed
8	L13	Water logging and drainage: Causes, effects and prevention of waterlogging.	10-09-2019	Completed
	L14	Type of drains-open drains and closed drains (introduction only), Discharge and spacing of closed drains. Examples	13-09-2019	Completed

9	L15	Introduction to ground water flow, Darcy law; Wells: Definition, Types-open well or Dug well, Tube well, open well-shallow open well, deep open well,	20-09-2019	Completed
	L16	Cavity formation in open wells, construction of open wells, Yield of an open well -	22-10-2019	Completed
	L17	Equilibrium pumping test, Recuperating test, examples,	25-10-2019	Completed
	L18	Tube wells - Strainer type, cavity type, slotted type. Examples.	05-11-2019	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
16	18	2	0

Remarks: Syllabus completed so far.

P Das.
Signature of the Faculty

Remarks: Verified

A. Chattopadhyay
Signature of the HOD





HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering

Year: 4th

Paper Name: Environmental Pollution and Control

Contact: 10 hours

Available Weeks: 10

Name of the Faculty: JAYANTA BANDYOPADHYAY

Session: 2019- 2020

Semester: 8th

Paper Code: CE801A

Credit: 3


No. of Periods: 1 per week

Designation: Asst. Prof.

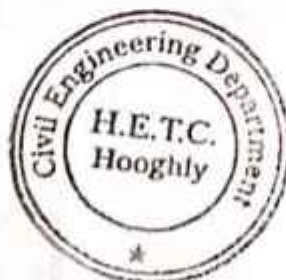
Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
6	L1	-	Physics of Noise: : Basics of Acoustics, Sound Pressure, Power and Intensity	06-02-2020	Completed
7	L2	-	Measurement of Noise: Noise level and Interrelation between noise and pressure	13-02-2020	Completed
7	-	T1	Noise meter and Noise networks	20-02-2020	Partially Completed
	L3	-	Frequency band analysis	27-02-2020	Completed
	L4	-	Decibel calculation, Community noise	21-04-2020	Completed
	L5	-	Sources and effect of noise: Psychoacoustics and noise criteria	28-04-2020	Completed
8	L6	-	Effect of noise on health	12-05-2020	Partially Completed
	L7	-	Noise pollution control: Noise standard	19-05-2020	Completed
9	L8	-	Noise limits, Annoyance rating schemes	26-05-2020	Partially Completed
	L9	-	Methods of noise pollution control	02-06-2020	Completed

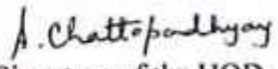
Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
10	10	0	0

Remarks: Syllabus completed so far


Signature of the Faculty

Remarks: *verified*




Signature of the HOD



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering	Session: 2020- 2021
Year: 3 rd	Semester: 5 th
Paper Name: Engineering Hydrology	Paper Code: CE(PC)502
Contact: 3L + 0T	Credit: 3
Available Weeks: 12	No. of Periods: 12
Name of the Faculty: PIYALI DAS	Designation: Asst. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
5	L1	—	Evaporation and evaporation process, Dalton's law of Evaporation, factors affecting evaporation process	11-08-2020	PPT was shown
	L2	—	Measurement of evaporation- description and functioning of Pan Evaporimeter, Pan Coefficient	18-08-2020	PPT was shown
	L3	—	Evapotranspiration, concept of AET and PET, measurement of ET	25-08-2020	Class was taken via Google meet
	L4	—	Estimation of ET by Blaney-Criddle formulae and related numericals	01-09-2020	Class was taken via Google meet
	L5	—	Infiltration- process, factors affecting infiltration, Infiltration rate and infiltration capacity	08-09-2020	Class was taken via Google meet
	L6	—	Measurement of infiltration, Infiltration equations and infiltration indices (W index and ϕ index)	15-09-2020	PPT was shown
	L7	—	Numericals related to infiltration indices (W index and ϕ index)	22-09-2020	Class was taken via Google meet
7	L8	—	Description of process and components of run-off	27-10-2020	PPT was shown
	L9	—	Factors affecting run-off	03-11-2020	PPT was shown
	L10	—	Characteristics of stream	10-11-2020	PPT was shown

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
12	10	0	0

Remarks: Syllabus was completed almost

Piyali Das
Signature of the Faculty

Remarks: Verified

Signature of the HOD *J. Chattopadhyay*





HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering Year: 3 rd Paper Name: Construction Engg Management Contact: 2L + 0T Available Weeks: 12 Name of the Faculty: PIYALI DAS	Session: 2020- 2021 Semester: 6 th Paper Code: CE(PC)601 Credit: 3 No. of Periods: 1 per week Designation: Asst. Prof.
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
6	L1	—	Equipment for earth moving: description of dozer, excavators (clump shell and back-hoe)	29-01-2021	PPT was shown
	L2	—	Continuation of previous day topic: description of excavators (power shovel, dragline), scraper, spreader	05-02-2021	PPT was shown
	L3	—	Plants and equipment for road construction: rollers and their uses, concrete mixers, vibrators	26-02-2021	PPT was shown
	L4	—	Plants for concrete construction: Batching Plants, Ready Mix concrete and quality control	12-03-2021	PPT was shown
7	L5	—	Importance of contracts, Types of contracts, Parties to a contract	19-03-2021	PPT was shown
	L6	—	Common contract clauses, Notice to proceed, rights and duties of various parties, contract duration and price	09-04-2021	PPT was shown
	L7	—	Penalties and liquidated damages, dispute resolution method	16-04-2021	PPT was shown
8	L8	—	Definition, rights and responsibilities of owner, Engineer and contractor. Operation of PWD, administration, technical and financial sanction	23-04-2021	PPT was shown
	L9	—	Tender and its notification, EMD and SD	14-05-2021	PPT was shown
	L10	—	Arbitration	28-05-2021	PPT was shown

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
12	10	0	0

Remarks: Syllabus completed so far

Signature of the Faculty

Remarks: *Verified*



A. Chattopadhyay
Signature of the HOD



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering	Session: 2021- 2022
Year: 3 rd	Semester: 5 th
Paper Name: Engineering Hydrology	Paper Code: CE(PC)502
Contact: 3L + 0T	Credit: 3
Available Weeks: 12	No. of Periods: 10
Name of the Faculty: PIYALI DAS	Designation: Asst. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
5	L1	—	Evaporation and evaporation process, Dalton's law of Evaporation, factors affecting evaporation process	06/04/21	PPT was shown
	L2	—	Measurement of evaporation- description and functioning of Pan Evaporimeter, Pan Coefficient	20/04/21	PPT was shown
	L3	—	Evapotranspiration, concept of AET and PET, measurement of ET	27/04/21	Class was taken via Google meet
	L4	—	Estimation of ET by Blaney-Criddle formulae and related numericals	04/05/21	Class was taken via Google meet
	L5	—	Infiltration- process, factors affecting infiltration, Infiltration rate and infiltration capacity	11/05/21	Class was taken via Google meet
	L6	—	Measurement of infiltration, Infiltration equations and infiltration indices (W index and ϕ index)	18/05/21	PPT was shown
	L7	—	Numericals related to infiltration indices (W index and ϕ index)	25/05/21	Class was taken via Google meet
7	L8	—	Description of process and components of run-off	01/06/21	PPT was shown
	L9	—	Factors affecting run-off	08/06/21	PPT was shown
	L10	—	Characteristics of stream	15/06/21	PPT was shown

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
10	10	0	0

Remarks: Syllabus was completed almost

P.D.S.

Signature of the Faculty

Remarks: *Verified*

Signature of the HOD *A. Chattopadhyay*





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering

Year: 2022

Paper Name: Environmental Impact Assessment
and Life Cycle Analyses

Contact: 20 hours

Available Weeks: 10

Name of the Faculty: SOUMYA KANTA RAY

Session: 2021- 2022

Semester: 8th

Paper Code: CE(OE)802D

Credit: 2

No. of Periods: 2 per week

Designation: Asst. Prof.

Module	Lecture No	Topic/Topics covered	Date	Comments
1	L1	Introduction of EIA: definition and objective with legal aspect of Environmental Impact Assessment	04-02-2022	Partially Completed
2	L2	Methodology for EIA with base line studies	04-02-2022	Partially Completed
2	L3	Methodology for screening, scoping and public consultation	11-02-2022	Completed
3	L4	EIA Analysis for data collection and Environmental impact analysis	11-02-2022	Partially Completed
3	L5	Preparation of EIA report	19-02-2022	Completed
4	L6	EIA Mitigation and impact management with various case studies	19-02-2022	Completed
4	L7	Environmental Audit	04-03-2022	Completed
5	L8	Introduction of Life Cycle Analysis (LCA): History, definition, standards and structure of LCA	04-03-2022	Completed
5	L9	Goal and scope of LCA, system of a product with boundary	11-03-2022	Completed
5	L10	LCA system of unit process and functional unit	11-03-2022	Completed
6	L11	Life Cycle Interpretation and Inventory: Limitation of LCA, identification of significant issues	01-04-2022	Partially Completed

6	L12	Evaluation, reporting and critical review of LCA	01-04-2022	Completed
6	L13	Inventory: Data collection, data bases, allocation and validation	08-04-2022	Completed
7	L14	LCA impact Assessment and Practice : Categories, classification and normalization	08-04-2022	Partially Completed
7	L15	LCA management and life cycle thinking and sustainability	22-04-2022	Completed
7	L16	To understand the intricacies of life cycle analysis and apply basis knowledge for coherent existense	22-04-2022	Completed
8	L17	Definition, objective with legal aspect in EIA	13-05-2022	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
20	17	0	0

Remarks: Syllabus completed so far

Soumya Kanta Roy
Signature of the Faculty

Remarks: Verified

A. Chattopadhyay
Signature of the HOD





HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering	Session: 2022- 2023
Year: 2 nd	Semester: 3 rd
Paper Name: Energy Science & Engineering	Paper Code: CE(ES)302
Contact: 10 hours	Credit: 2
Available Weeks: 10	No. of Periods: 1 per week
Name of the Faculty: SOUMYA KANTA RAY	Designation: Asst. Prof.

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
1	L1	-	Introduction of Energy Science: scientific principles and historical interpretation to place, energy use in the context of pressing societal, environmental and climate issues	13-07-2022	Completed
	L2	-	Introduction to energy systems and resources, introduction to energy, sustainability and the environment	20-07-2022	Completed
	-	T1	World map showing energy reserves by source, total energy consumption and per capita energy consumption and carbon-foot print	27-07-2022	Completed
3	L3	-	Energy & Environment: Introduction to clean energy, technologies and its importance in sustainable development for energy efficiency and conservation	03-08-2022	Partially Completed
	L4	-	Introduction to economies of energy, how the economic system determines production and consumption, linkages between economic and environmental outcomes	10-08-2022	Completed
	-	T2	How future energy use can be influenced by economic, environmental, trade and research policy, Study the functioning of an Electrostatic precipitator in thermal power plant and uses of coarse and fine ash from thermal power plants	24-08-2022	Completed
5	L5	-	Engineering for Energy conservation: Concept of Green building and Green architecture, choice of building materials, location, design and operation for green building	07-09-2022	Completed
	L6	-	Leed ratings, identification of energy related enterprises that represent the breadth of the industry and prioritizing as candidates, embodied energy analysis and use as tool for measuring sustainability	12-09-2022	Completed
	L7	-	Energy audit of facilities and optimization of energy consumption, energy audit of departmental building in college	19-09-2022	Partially Completed

		T3	Draw a typical geometrical orientation of a house in your area to avoid sun's radiation in the bed room in the evening; Identify typical examples of Indian buildings having various LEED ratings; List various building materials with their embodied energy content	26-09-2022	Completed
--	--	----	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------	-----------

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
10	10	0	0

Remarks: Syllabus completed so far

Souja Kata Roy
Signature of the Faculty

Remarks: verified

A. Chattopadhyay
Signature of the HOD





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING



LECTURE DIARY

Department: Civil Engineering

Year: 2nd

Paper Name: Introduction to Fluid Mechanics

Contact: 2L+0T

Available Weeks: 13

Name of the Faculty: Piyali Das

Session: 2022- 2023

Semester: 4th

Paper Code: CE(ES)401

Credit: 2

No. of Periods: 14

Designation: Asst. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
3	L1	----	The velocity field, Eulerian and Lagrangian flow descriptions, concept of one, two and three dimensional flows, steady and unsteady flow	03/12/22	Completed
3	L2	----	Stream lines, streak lines, pathlines and acceleration field	10/12/22	PPT was shown
3	L3	----	Control volume and system representation and numericals, continuity equation and related problem	23/12/22	Completed
3	L4	----	Momentum equation and its application, numericals	24/02/23	Completed
3	L5	----	Moment of Momentum equation and its application, numericals	25/02/23	Completed
3	L6	----	Application to pipe bend and numericals	03/03/23	Completed
6	L7	----	Laminar flow, Turbulent flow, Reynolds number, critical velocity and velocity distribution	04/03/23	PPT was shown
6	L8	----	Shear stress at pipe wall, Loss of head for laminar flow and turbulent flow	10/03/23	Completed
6	L9	—	Darcy-Weisbach formula and concept of friction factor	24/03/23	Completed

6	L10	—	Numericals related to Darcy – weisbach equation	25/03/23	Completed
6	L11	—	Expansion head loss and related numerical	28/03/23	Completed
6	L12	—	Contraction head loss and related numerical	31/03/23	Completed
7	L13	—	Pipe in series and parallel related, branching pipe related to problem	10/04/23	PPT was shown
7	L14	—	Pipe Networks and related problem	18/04/23	PPT was shown

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
14	14	0	0

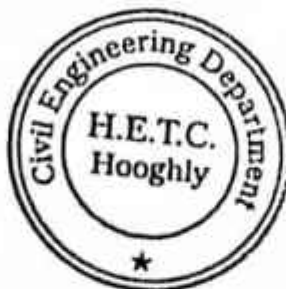
Remarks: Most of the classes were taken with good percentage of students, present in class.

P.Das.

Signature of the Faculty

Remarks: Verified

A. Chattopadhyay
Signature of the HOD





HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering	Session: 2022- 2023
Year: 4th	Semester: 7th
Paper Non-Conventional Energy Resources	Paper Code: OE-ME701D
Contact: 3 (3L)	Credit: 3
Available Weeks: 11	No. of Periods: 33
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction to non-conventional energy resources, history of energy scene, classification of non-conventional energy, importance of non-conventional energy resources, energy of the future	27.7.22	Completed
	2		Energy chain, Sustainable energy, development and role of renewable energy, advantages and disadvantages of non-conventional resources	14.7.22	Completed
	3		Salient features of non-conventional energy resources, Scientific principles of renewable energy	15.7.22	Completed
2	1		Review of principles of thermodynamics, fluid dynamics and heat transfer	19.7.22	Completed
3	1		Introduction to solar radiation, sun, earth radiation spectrum, sun-earth radiation geometry	21.7.22	Completed
	2		Extraterrestrial and terrestrial radiation, depletion of solar radiation like absorption, scattering, etc	23.7.22	Completed
	3		Measurement and estimation of solar radiation, solar time, solved related numerical problems.	26.7.22	Completed
4	1		Introduction to solar thermal system, solar collector, classification of solar collector, performance indices	27.7.22	Completed
	2		Liquid flat plate collector, effect of various parameters on its performance, material selection for various parts of flat plate collector.	30.7.22	Completed
	3		Evacuated tube collectors	3.8.22	Completed
	4		Modified flat plate collector, solar water heater	5.8.22	Completed
5	1		Flat plate air heating collector, its advantages and disadvantages,	6.8.22	Completed
	2		Solar water desalination, space cooling	12.8.22	Completed
	3		Solar contractors, solar ponds	16.8.22	Completed
6	1		Introduction to solar photovoltaic systems, advantages of solar PV systems over conventional power systems, solar cells fundamentals.	19.8.22	Completed
	2		Formation of energy bands, direct and indirect band gap material, p-n junction	24.8.22	Completed
	3		Solar cell characteristics, solar cell design considerations	27.8.22	Completed
	4		Solar cell classification, solar cell technologies	30.8.22	Completed
7	1		Introduction to wind energy, origin of wind, factors affecting the distribution of wind energy on the surface of the earth, estimation of wind energy at a site.	3.7.22	Completed

	2	Wind turbine siting, wind turbine types and their construction and terms	7.9.22	Completed
	3	Mechanical & Electrical power from wind turbines, environmental aspects of wind energy	8.9.22	Completed
8	1	Introduction to biomass energy, usable forms of biomass, their composition and fuel properties, biomass resources	10.9.22	Completed
	2	Biomass conservation technologies, classification and use of bio-fuels	12.9.22	Completed
9	1	Introduction to tidal energy, origin and nature of tidal energy, Tidal energy technology, tidal energy conversion schemes.	13.9.22	Completed
	2	Introduction to wave energy, power in waves, wave energy technology	15.9.22	Completed
10	1	Ocean thermal energy, ocean thermal energy conversion technology	16.9.22	Completed
	2	Introduction to geothermal energy, types of geothermal resources,	13.10.22	Completed
	3	Introduction to energy storage, necessity of energy storage, energy storage methods	15.10.22	Completed.

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
33	28		

Remarks: Syllabus completed within the number class taken

Signature of the Faculty J. Ghosh 16.10.22

Remarks: _____

BG 16.10.22
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering	Session: 2022- 2023
Year: 2nd	Semester: 4th
Paper Name: Strength of Materials	Paper Code: PC-ME403
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 11	No. of Periods: 44
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction to strength of materials, classification of materials, elasticity, simple stress, types stress, strain and types of strain	7.1.23	Completed
	2		Elastic limit, Hooke's law, deformation of a member due to external load and due to its self-weight, stresses in members with varying cross-section, principle of super position.	19.1.23	Completed
	3		Deformation of taper bars due to external forces, stresses in composite members	21.1.23	Completed
		1	Solve numerical problems based on composite members	3.2.23	Completed
	4		Lateral and longitudinal strain, Poisson's ratio, volumetric strain of rectangular and cylindrical section due to axial force and normal stresses on three mutually perpendicular planes	21.2.23 +1	Completed +1 class
	5		Elastic constants like Young's modulus, Bulk modulus, rigidity modulus and their relations	25.2.23	Completed
	6		Principal stresses and principal planes and solved related numerical problems	28.2.23	Completed
		1	Mohr's circle, method of constructing Mohr's circle	4.3.23	Completed
2	1		Beam and classification of beams (cantilever, overhanging, simply supported, etc) load and types of loading (point, uniformly distributed gradually varying load)	11.3.23	Completed
	2-4		Shear force and bending moment, sign conventions, relation between load, shear force and bending moment, shear force and bending moment diagram, solved numerical problems based on different types of beams and loading	25.3.23 +1	Completed +1 class
		1	Solved numerical problems based on different types of beams and loading	28.3.23	Completed
	5-6		Pure bending or simple bending, assumptions in theory of simple bending, bending equation, bending stress distribution and neutral axis, shear stress distribution	29.3.23	Completed
	5	1	Solved numerical problems based on theory of bending	31.3.23	Completed
4	1		Torsion, pure torsion, assumptions for torsional stress and strain in circular shafts, polar moment of inertia, torsion equation for circular shaft.	1.4.23	Completed
	2		Power transmitted by a shaft, composite shafts, strength of shafts.	2.4.23	Completed
	3		Shafts in series and parallel, shafts of varying cross-section, solved numerical problems based on above topics	3.4.23	Completed
		1	Solved numerical problems based on above topics	5.4.23	Completed

	4		Introduction to closed and open coiled helical springs, definitions of some terms relating to the springs, maximum shear stress in helical springs.	6.4.23	Completed
	5		Deflection of a closed coiled helical spring, solid length of closed coiled springs, springs in parallel and series and equivalent stiffness	10.4.23	Completed
		1	Solved numerical problems based on above topics	12.4.23	Completed
5	1		Hoop stress or circumferential stress, determination of hoop stress, longitudinal stress in cylindrical shell and its determination, stresses set up in spherical shell.	13.4.23	Completed
	2-3		Change in dimensions and volume in thin cylindrical and spherical shell due to internal pressure, solved numerical problems based on the chapter	19.4.23	Completed
		1	Solved numerical problems based on the chapter	20.4.23	Completed
	4-5		Lame's theory for determining stresses in thick cylindrical shell, determination of stress in thick cylindrical shell.	26.4.23	Completed
		1	Solved numerical problems based on the chapter	27.4.23	Completed
3	1		Moment of inertia about an axis and polar moment of inertia, solved numerical problems based on MI	29.4.23	Completed
	2		Relation between slope, deflection and radius of curvature, various methods of determining slope and deflection, double integration method.	30.4.23	Completed
	3		Slope and deflection of a beam loaded with different types of load, maximum slope and deflection.	10.5.23	Completed
	4		Maxwell's reciprocal theorem and solved numerical problems	12.5.23	Completed
		1	Solved numerical problems	13.5.23	Completed
	5		Definition of column and struts, types of column, critical load end conditions of column, Euler's theory for long column, assumptions in Euler's formula.	15.5.23	Completed
	6		Sign conventions for determining B.M. in columns, Euler's critical load for different end conditions and loading	17.5.23	Completed
		1	Solved numerical problems based on column and struts.	18.5.23	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
44	36	2	

Remarks: Syllabus completed within the number of class taken

J. Ghosh 20.5.23
Signature of the Faculty

Remarks: _____

SG 20.05.23
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering	Session: 2021- 2022
Year: 2 nd	Semester: 4 th
Paper Name: Strength of Materials	Paper Code: PC-ME403
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 11	No. of Periods: 44
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction to strength of materials, classification of materials, elasticity, simple stress, types stress, strain and types of strain	8.2.22	Completed
	2		Elastic limit, Hooke's law, deformation of a member due to external load and due to its self-weight, stresses in members with varying cross-section, principle of super position.	9.2.22	Completed
	3		Deformation of taper bars due to external forces, stresses in composite members	10.2.22	Completed
		1	Solve numerical problems based on composite members	12.2.22	Completed
	4		Lateral and longitudinal strain, Poisson's ratio, volumetric strain of rectangular and cylindrical section due to axial force and normal stresses on three mutually perpendicular planes	15.2.22	Completed
	5		Elastic constants like Young's modulus, Bulk modulus, rigidity modulus and their relations	16.2.22	Completed
	6		Principal stresses and principal planes and solved related numerical problems	17.2.22	Completed
		1	Mohr's circle, method of constructing Mohr's circle	19.2.22	Completed
2	1		Beam and classification of beams (cantilever, overhanging, simply supported, etc) load and types of loading (point, uniformly distributed gradually varying load)	21.2.22	Completed
	2-4		Shear force and bending moment, sign conventions, relation between load, shear force and bending moment, shear force and bending moment diagram, solved numerical problems based on different types of beams and loading	3.3.22	Completed
		1	Solved numerical problems based on different types of beams and loading	5.3.22	Completed
	5-6		Pure bending or simple bending, assumptions in theory of simple bending, bending equation, bending stress distribution and neutral axis, shear stress distribution	8.3.22	Completed
	5	1	Solved numerical problems based on theory of bending	9.3.22	Completed
4	1		Torsion, pure torsion, assumptions for torsional stress and strain in circular shafts, polar moment of inertia, torsion equation for circular shaft.	10.3.22	Completed
	2		Power transmitted by a shaft, composite shafts, strength of shafts.	12.3.22	Completed
	3		Shafts in series and parallel, shafts of varying cross-section, solved numerical problems based on above topics	15.3.22	Completed
		1	Solved numerical problems based on above topics	22.3.22	Completed

	4		Introduction to closed and open coiled helical springs, definitions of some terms relating to the springs, maximum shear stress in helical springs.	29.3.22	Completed
	5		Deflection of a closed coiled helical spring, solid length of closed coiled springs, springs in parallel and series and equivalent stiffness	31.3.22	Completed
		1	Solved numerical problems based on above topics	2.4.22	Completed
5	1		Hoop stress or circumferential stress, determination of hoop stress, longitudinal stress in cylindrical shell and its determination, stresses set up in spherical shell.	15.4.22	Completed
	2-3		Change in dimensions and volume in thin cylindrical and spherical shell due to internal pressure, solved numerical problems based on the chapter	6.4.22	Completed
		1	Solved numerical problems based on the chapter	7.4.22	Completed
	4-5		Lame's theory for determining stresses in thick cylindrical shell, determination of stress in thick cylindrical shell.	8.4.22	Completed
		1	Solved numerical problems based on the chapter	12.4.22	Completed
3	1		Moment of inertia about an axis and polar moment of inertia, solved numerical problems based on MI	13.4.22	Completed
	2		Relation between slope, deflection and radius of curvature, various methods of determining slope and deflection, double integration method.	19.4.22	Completed + 1 + 1 ore clay
	3		Slope and deflection of a beam loaded with different types of load, maximum slope and deflection.	21.4.22	Completed
	4		Maxwell's reciprocal theorem and solved numerical problems	22.4.22	Completed
		1	Solved numerical problems	5.5.22	Completed
	5		Definition of column and struts, types of column, critical load end conditions of column, Euler's theory for long column, assumptions in Euler's formula.	6.5.22	Completed + 1 Clay
	6		Sign conventions for determining B.M. in columns, Euler's critical load for different end conditions and loading	12.5.22	Completed
		1	Solved numerical problems based on column and struts.	14.5.22	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
40	35	2	

Remarks: Syllabus completed within the specified time

D. Ghosh, 18.05.22
Signature of the Faculty

Remarks: _____

SG 18.05.22
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering	Session: 2021- 2022
Year: 3rd	Semester: 5 th
Paper Name: Kinematics and Theory of Machines	Paper Code: PC-ME 503
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 11	No. of Periods: 44
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction to simple mechanisms, Kinematic Link or Element, Types of Links, Kinematic Pair, Types of Constrained Motions, Classification of Kinematic Pairs	6.9.21	Completed
	2		Kinematic Chain, Types of Joints in a Chain, Mechanism, Number of Degrees of Freedom for Plane Mechanisms, Grashof's law, Application of Kutzbach Criterion to Plane Mechanisms	7.9.21	Completed
	3		Inversion of Mechanism, Types of Kinematic Chains, Four Bar Chain or Quadric Cycle Chain, Inversions of Four Bar Chain	8.9.21	Completed
	4		Single Slider Crank Chain, Inversions of Single Slider Crank Chain, Crank and slotted lever quick return motion mechanism	10.9.21	Completed
		1	Solved numerical problems based on the chapter		
	5		Whitworth quick return motion mechanism, Inversions of Double Slider Crank Chain	11.7.21	Completed
3	1		Introduction to cam and follower, Classification of Followers, Classification of Cams, Terms Used in Radial Cams	13.9.21	Completed
	2		Motion of the Follower, Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Uniform Velocity, Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Simple Harmonic Motion	15.9.21 +1	Completed by taking an extra class
	3		Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Uniform Acceleration and Retardation, Construction of Cam Profile for a Radial Cam	18.9.21	Completed
	4		Cams with Specified Contours, Tangent Cam with Reciprocating Roller Follower,	20.9.21	Completed
		1	Solved numerical problems based on this chapter		
	5		Circular Arc Cam with Flat-faced Follower, Solved numerical problems based on this chapter	21.9.21	Completed
8	1		Introduction to governors, classification of governors, Terms Used in Governors, Watt Governor	24.9.21	Completed
	2		Study and analysis of Porter governor, Study and analysis of Proell and Wilson-Hartnell governors;	25.9.21	Completed
	3		Sensitiveness, stability, isochronism, hunting, effort and power of governors.	27.9.21	Completed
3				+1	+1 one class

		1	Solved numerical problems based on this chapter		Completed
9	1		Inertia force and inertia torque in reciprocating engine, correction couple (torque)	28.7.21	Completed
	2		Fly wheel diagrams, Fluctuation of Energy, determination of fluctuation of energy, Coefficient of Fluctuation of Energy	29.7.21	
	3		Coefficient of Fluctuation of Speed, Energy Stored in a Fly wheel, Fly wheel design Solved numerical problems based on this chapter	29.7.21	
7	1		Introduction to balancing of rotating masses, Balancing of a Single Rotating Mass By a Single Mass Rotating in the Same Plane, Balancing of a Single Rotating Mass By Two Masses Rotating in Different Planes, Balancing of Several Masses Rotating in the Same Plane	8.10.21 +1	Completed + 1 class
	2		Balancing of Several Masses Rotating in Different Planes, solve numerical problems based on this chapter.	9.10.21	Completed
	3		Primary and Secondary Unbalanced Forces of Reciprocating Masses, Partial Balancing of Unbalanced Primary Force in a Reciprocating Engine, Partial Balancing of Locomotives	23.10.21	Completed
		1	Variation of Tractive Force, Swaying Couple, Hammer Blow	26.10.21	Completed
5	1		Types of friction, friction between lubricated surfaces, basic terms of friction, friction drives- bearings and lubrication	30.10	Completed
	2		Friction clutches, single disc or plate clutch, centrifugal clutch	1.11.21	Completed
	3		Types of belt drive, slip of belt, ratio of driving tensions for flat belt drive, angle of contact, centrifugal tension, maximum tension in the belt	3.11.21	Completed + 1 class
		1	Solved numerical problems based on the chapter		
	4		Friction in brakes	8.11.21	Completed
4	1		Classification of toothed wheel, terms used in gear, conditions for constant velocity ratio	12.11.21	Completed
	2		Law of gearing, forms of teeth, involute and cycloidal gear profile, comparison between involute and cycloidal gears	13.11.21	Completed
	3		Length of path of contact, length of arc of contact, contact ratio	14.11.21	Completed
	4		Interference in involute gear, minimum number of teeth on wheel and pinion to avoid interference, helical, bevel, worm, rack & pinion	16.11.21	Completed + 1 class
		1	Solved numerical problems based on the chapter		
10	1		Gyroscopic couple and pre-cessional motion, Effect of gyroscopic couple on aero plane and ship,	28.11.21	Completed + 1 class
	2		Stability of two wheel and four wheel vehicles taking turn.		
6	1		Introduction to vibration, Natural frequency of free longitudinal vibrations, Natural frequency of free transverse vibrations.	29.11.21	Completed
	2		Critical or whirling speed of a shaft, Frequency of free damped vibrations, damping factor	2.12.21	Completed
	3		Resonance, Transmissibility Ratio	3.12.21	Completed
	4		Effect of damping, Vibration Isolation, Magnification factor	3.12.21	Completed
	1		Methods for Determining the Velocity of a Point on a Link, Velocity of a Point on a Link by Instantaneous Centre Method, Number of Instantaneous Centres in a Mechanism, Types of Instantaneous Centres, Location of Instantaneous Centres	6.12.21	Completed
	2		Motion of a Link, Velocities in Slider Crank Mechanism, Rubbing Velocity at a Pin Joint	8.12.21	Completed

2	3		Mechanical Advantage, Acceleration of a Point on a Link, Acceleration in the Slider Crank Mechanism.	9/12/21	Completed
		1	Solved numerical problems based on this chapter		
	4		Corioli's Component of Acceleration, solved numerical problems based on this chapter	12/12/21	Completed
	5		Introduction to linkage synthesis- three position graphical synthesis for motion and path generation.	23/12/21	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
44	37	5	

Remarks: Syllabus completed within specified time

J. Ghosh 15.12.21
Signature of the Faculty

Remarks: _____

89 15.12.21
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering Year: 3rd Paper Name: I.C. Engines and Gas Turbines Contact: 3 (3L) Available Weeks: 11 Name of the Faculty: Samir Ghosh	Session: 2022-23 Semester: 6th Paper Code: PE-ME 601A Credit: 3 No. of Periods: 33 Designation: Asst. Prof.
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction about heat engines, external and combustion engine, classification of IC engine based on different parameters, working principle of engines	8.2.20	Completed
	2		Components of IC engine like cylinder, cylinder head, piston and piston rings, crank and crank shaft, etc. Basic engine nomenclature like bore, stroke, TDC, BDC clearance volume, swept volume, etc.	9.2.20	Completed
	3		Comparison of 2-Stroke and 4-Stroke Engines; CI and SI Engines, Ideal and Actual Working Cycles and their analysis	12.2.20	Completed
	4		Requirement of Valve timing diagram, valve timing diagrams of SI engine and CI engine for low medium and high speed engines	16.2.20	Completed
	5		Calorific values of fuels, fuel ratings for SI & CI engines like Octane Number, Cetane Number	18.2.20	Completed
2	1		Introduction to SI engine fuel supply, air fuel mixture and mixture requirements. Construction and Working of Simple Carburetor, parts of carburetor	19.2.20	Completed.
	2		Analysis of a single jet carburetor, limitations of single jet carburetor. Petrol injection systems, advantages and disadvantages of petrol injection system, solved some numerical problems based on air-fuel ratio analysis	27.2.20 8.3.20	Completed by taking two classes
	3		Fuel injection systems for CI engines, types of injection system like common rail system, distributor system, etc.	5.3.20	Completed
	4		Fuel feed pumps, injection pumps, nozzles and fuel atomizer or injector, Working principles of Governors	7.3.20 10.3.20	Completed in 2 classes
	5		Stages of combustion Normal and abnormal combustion in SI and CI engines	12.3.20	Completed
	6		Detonation and knocking, affecting factors, effects of knocking, control of knocking.	15.3.20	Completed
3	1		Engine powers like IP, HP, FP and their measurements, engine efficiencies like brake thermal, indicated thermal, volumetric, mechanical and relative efficiencies.	22.3.20 29.3.20	Completed
	2		Performance characteristics, like fuel consumption, specific fuel consumptions and solved related numerical problems	31.3.20	Completed
	3		Methods of improving engine performance, Heat balance sheet and solved related numerical problems	2.4.20	Completed
	4		Changes in fuel injection systems in SI and CI engines, Common rail direct injection system, system	6.4.20	Completed

5	1	Introduction to gas turbines, classification of gas turbines, analysis of constant pressure closed cycle gas turbine and work rati on	8.4.20	Completed
	2	Analysis of open cycle constant pressure gas turbine, advantages and disadvantages of closed cycle over open cycle gas turbine, Analysis of ideal and actual gas turbine cycles	12.4.20	Completed
	3	Effects of inter-cooling and reheating on the thermal efficiency of the gas turbines	19.4.20	Completed
	4	Effect of regeneration on the thermal efficiency of the gas turbines and solved related numerical problems, Effect of Combined cycle and co-generation	27.4.20	Completed
6	1	Introduction to jet propulsion, turbo-jet engine, turbo-prop engine	22.4.20	Completed
	2	Turbo jet cycle, analysis of turbo-prop jet engine and thrust augmentation	3.5.20	Completed
	3	Gas turbine combustion systems, Gas Turbine Emissions	6.5.20	Completed
4	1	Introduction about alternate fuels in IC engine, Needs for use of alternate fuels, types of alternate fuel.	11.5.20	Completed
	2	Use of alcohol (ethanol, methanol) production of bio-fuel, use of blends, Biogas and hydrogen as a substitute fuel for IC engines	13.5.20	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
33	27		

Remarks: Syllabus Completed within the number of
Class Taken

J. Ghosh 18.5.20
Signature of the Faculty

Remarks: _____

88 18.05.20
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering	Session: 2020- 2021
Year: 3rd	Semester: 5th
Paper Name: Kinematics and Theory of Machines	Paper Code: PC-ME 503
Contact: 4(3L+1T)	Credit: 4
Available Weeks: 11	No. of Periods: 44
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction to simple mechanisms, Kinematic Link or Element, Types of Links, Kinematic Pair, Types of Constrained Motions, Classification of Kinematic Pairs	17.8.20	Completed
	2		Kinematic Chain, Types of Joints in a Chain, Mechanism, Number of Degrees of Freedom for Plane Mechanisms, Grashof's law, Application of Kutzbach Criterion to Plane Mechanisms	18.8.20	Completed
	3		Inversion of Mechanism, Types of Kinematic Chains, Four Bar Chain or Quadric Cycle Chain, Inversions of Four Bar Chain	19.8.20	Completed
	4		Single Slider Crank Chain, Inversions of Single Slider Crank Chain, Crank and slotted lever quick return motion mechanism	21.8.20 +1	Completed by taking up extra class
		1	Solved numerical problems based on the chapter		
	5		Whitworth quick return motion mechanism, Inversions of Double Slider Crank Chain	22.8.20	Completed
3	1		Introduction to cam and follower, Classification of Followers, Classification of Cams, Terms Used in Radial Cams	24.8.20	Completed
	2		Motion of the Follower, Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Uniform Velocity, Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Simple Harmonic Motion	25.8.20 +1	Completed by taking an extra class
	3		Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Uniform Acceleration and Retardation, Construction of Cam Profile for a Radial Cam	26.8.20	Completed
	4		Cams with Specified Contours, Tangent Cam with Reciprocating Roller Follower,	28.8.20 +1	Completed by taking an extra class
		1	Solved numerical problems based on this chapter		
	5		Circular Arc Cam with Flat-faced Follower, Solved numerical problems based on this chapter	29.8.20	Completed
8	1		Introduction to governors, classification of governors, Terms Used in Governors, Watt Governor	20.8.20	Completed
	2		Study and analysis of Porter governor, Study and analysis of Proell and Wilson-Hartnell governors;		Completed
	3		Sensitiveness, stability, isochronism, hunting, effort and power of governors.	19.9.20	Completed

		1	Solved numerical problems based on this chapter		
9	1		Inertia force and inertia torque in reciprocating engine, correction couple (torque)	2.9.20	Completed
	2		Fly wheel diagrams, Fluctuation of Energy, determination of fluctuation of energy, Coefficient of Fluctuation of Energy	4.9.20 +1)	Completed by taking an extra class
	3		Coefficient of Fluctuation of Speed, Energy Stored in a Fly wheel, fly wheel design Solved numerical problems based on this chapter		
7	1		Introduction to balancing of rotating masses, balancing of a Single Rotating Mass By a Single Mass Rotating in the Same Plane, Balancing of a Single Rotating Mass By Two Masses Rotating in Different Planes, Balancing of Several Masses Rotating in the Same Plane	7.9.20	Completed
	2		Balancing of Several Masses Rotating in Different Planes, solve numerical problems based on this chapter.	8.9.20	Completed
	3		Primary and Secondary Unbalanced Forces of Reciprocating Masses, Partial Balancing of Unbalanced Primary Force in a Reciprocating Engine, Partial Balancing of Locomotives	9.9.20	Completed
5		1	Variation of Tractive Force, Swaying Couple, Hammer Blow		
	1		Types of friction, friction between lubricated surfaces, basic terms of friction, friction drives- bearings and lubrication	11.9.20	Completed
	2		Friction clutches, single disc or plate clutch, centrifugal clutch	12.9.20	Completed
	3		Types of belt drive, slip of belt, ratio of driving tensions for flat belt drive, angle of contact, centrifugal tension, maximum tension in the belt	14.9.20	Completed
		1	Solved numerical problems based on the chapter		
	4		Friction in brakes	15.9.20	Completed
4	1		Classification of toothed wheel, terms used in gear, conditions for constant velocity ratio	16.9.20	Completed
	2		Law of gearing, forms of teeth, involute and cycloidal gear profile, comparison between involute and cycloidal gears	19.9.20	Completed
	3		Length of path of contact, length of arc of contact, contact ratio	21.9.20	Completed
	4		Interference in involute gear, minimum number of teeth on wheel and pinion to avoid interference, helical, bevel, worm, rack & pinion	22.9.20	Completed by taking an extra class
		1	Solved numerical problems based on the chapter		
10	1		Gyroscopic couple and pre-sessional motion, Effect of gyroscopic couple on aero plane and ship.	25.9.20	Completed
	2		Stability of two wheel and four-wheel vehicles taking turn.	24.9.20	Completed
6	1		Introduction to vibration, Natural frequency of free longitudinal vibrations, Natural frequency of free transverse vibrations.	5.10.20	Completed
	2		Critical or whirling speed of a shaft, Frequency of free damped vibrations, damping factor	2.11.20	Completed
	3		Resonance, Transmissibility Ratio	5.11.20	Completed
	4		Effect of damping, Vibration Isolation, Magnification factor		
	1		Methods for Determining the Velocity of a Point on a Link, Velocity of a Point on a Link by Instantaneous Centre Method, Number of Instantaneous Centre's in a Mechanism, Types of Instantaneous Centre's, Location of Instantaneous Centre's	9.11.20 +1	Completed by taking an extra class
	2		Motion of a Link, Velocities in Slider Crank Mechanism, Rubbing Velocity at a Pin Joint	23.11.20	Completed

2	3		Mechanical Advantage, Acceleration of a Point on a Link, Acceleration in the Slider Crank Mechanism.	24.11.20	Completed
		1	Solved numerical problems based on this chapter		
	4		Coriolis's Component of Acceleration, solved numerical problems based on this chapter	27.11.20	Completed
	5		Introduction to linkage synthesis- three position graphical synthesis for motion and path generation.	28.11.20	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
44	37	6	

Remarks: Syllabus Completed within specified time.

J. Ghosh 21.12.20
Signature of the Faculty

Remarks: _____

02.12.20
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE DIARY



Department: Mechanical Engineering Year: 2 nd Paper Name: Strength of Materials Contact: 4(3L+1T) Available Weeks: 11 Name of the Faculty: Samir Ghosh	Session: 2019- 2020 Semester: 4 th Paper Code: PC-ME403 Credit: 4 No. of Periods: 44 Designation: Asst. Prof.
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction to strength of materials, classification of materials, elasticity, simple stress, types stress, strain and types of strain	21-2-20	Completed
	2		Elastic limit, Hooke's law, deformation of a member due to external load and due to its self-weight, stresses in members with varying cross-section, principle of super position.	22-1-20	Completed
	3		Deformation of taper bars due to external forces, stresses in composite members.	27-1-20	Completed
		1	Solve numerical problems based on composite members	28-1-20	Completed
	4		Lateral and longitudinal strain, Poisson's ratio, volumetric strain of rectangular and cylindrical section due to axial force and normal stresses on three mutually perpendicular planes	30-1-20 +1	Completed by taking an extra class
	5		Elastic constants like Young's modulus, Bulk modulus, rigidity modulus and their relations	31-1-20	Completed
	6		Principal stresses and principal planes and solved related numerical problems	1-2-20	Completed
		1	Mohr's circle, method of constructing Mohr's circle	4-2-20	Completed
2	1		Beam and classification of beams (cantilever, overhanging, simply supported, etc) load and types of loading (point, uniformly distributed gradually varying load)	5-2-20	Completed
	2-4		Shear force and bending moment, sign conventions, relation between load, shear force and bending moment, shear force and bending moment diagram, solved numerical problems based on different types of beams and loading	7-2-20 +1	Completed by taking an extra class
		1	Solved numerical problems based on different types of beams and loading	11-2-20	Completed
	5-6		Pure bending or simple bending, assumptions in theory of simple bending, bending equation, bending stress distribution and neutral axis, shear stress distribution	15-2-20	Completed
	5	1	Solved numerical problems based on theory of bending	19-2-20	Completed
4	1		Torsion, pure torsion, assumptions for torsional stress and strain in circular shafts, polar moment of inertia, torsion equation for circular shaft.	22-2-20	Completed
	2		Power transmitted by a shaft, composite shafts, strength of shafts.	25-2-20	Completed
	3		Shafts in series and parallel, shafts of varying cross-section, solved numerical problems based on above topics	26-2-20	Completed
		1	Solved numerical problems based on above topics	27-2-20	Completed

	4		Introduction to closed and open coiled helical springs, definitions of some terms relating to the springs, maximum shear stress in helical springs.	3.3.20	Completed
	5		Deflection of a closed coiled helical spring, solid length of closed coiled springs, springs in parallel and series and equivalent stiffness	6.3.20 +1	Completed by taking an extra class
		1	Solved numerical problems based on above topics	7.3.20	Completed
5	1		Hoop stress or circumferential stress, determination of hoop stress, longitudinal stress in cylindrical shell and its determination, stresses set up in spherical shell.	11.3.20	Completed by taking an extra class
	2-3		Change in dimensions and volume in thin cylindrical and spherical shell due to internal pressure, solved numerical problems based on the chapter	13.3.20	Completed
		1	Solved numerical problems based on the chapter	14.3.20	Completed
	4-5		Lame's theory for determining stresses in thick cylindrical shell, determination of stress in thick cylindrical shell.	8.4.20	Completed
		1	Solved numerical problems based on the chapter	9.4.20	Completed
3	1		Moment of inertia about an axis and polar moment of inertia, solved numerical problems based on MI	13.4.20	Completed
	2		Relation between slope, deflection and radius of curvature, various methods of determining slope and deflection, double integration method.	14.4.20 +1	Completed +1 class
	3		Slope and deflection of a beam loaded with different types of load, maximum slope and deflection.	17.4.20	Completed
	4		Maxwell's reciprocal theorem and solved numerical problems	24.4.20	Completed
		1	Solved numerical problems	26.4.20	Completed
	5		Definition of column and struts, types of column, critical load end conditions of column, Euler's theory for long column, assumptions in Euler's formula.	3.5.20	Completed
	6		Sign conventions for determining B.M. in columns, Euler's critical load for different end conditions and loading	5.5.20	Completed
		1	Solved numerical problems based on column and struts.	9.5.20	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
44	35	5	

Remarks: Syllabus completed within specified time.

J. Ghosh 12.05.20
Signature of the Faculty

Remarks: _____

BB 12.05.20
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering Year: 2nd Paper Name: Dynamics of Machines Contact: 3(3L) Available Weeks: 11 Name of the Faculty: Samir Ghosh	Session: 2019- 2020 Semester: 3rd Paper Code: ME 501 Credit: 4 No. of Periods: 33 Designation: Asst. Prof.
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
6	1		Introduction to governors, classification of governors, Terms Used in Governors, Watt Governor	10.7.19	Completed
	2		Study and analysis of Porter governor, Study and analysis of Proell and Wilson-Hartnell governors;	12.7.19	Completed
	3		Sensitiveness, stability, isochronism, hunting, effort and power of governors. Controlling force	14.7.19	Completed
	4		Solved numerical problems based on this chapter	18.7.19	Completed
4	1		Inertia force and inertia torque in reciprocating engine, correction couple (torque)	20.7.19	Completed
	2		Fly wheel diagrams, Fluctuation of Energy, determination of fluctuation of energy, Coefficient of Fluctuation of Energy	23.7.19	Completed
	3		Coefficient of Fluctuation of Speed, Energy Stored in a Fly wheel, Fly wheel design	24.7.19	Completed
	4		Solved numerical problems based on this chapter	26.7.19	Completed
5	1		Introduction to balancing of rotating masses, Balancing of a Single Rotating Mass By a Single Mass Rotating in the Same Plane, Balancing of a Single Rotating Mass By Two Masses Rotating in Different Planes..	20.7.19 + 1	Completed by taking an extra class
	2		Balancing of Several Masses Rotating in the Same Plane Balancing of Several Masses Rotating in Different Planes,	2.8.19	Completed
	3		Solved numerical problems based on above topics.	3.8.19	Completed
	4		Dynamic balancing of rotating masses - graphical and analytical methods	7.8.19	Completed
	5		Primary and Secondary Unbalanced Forces of Reciprocating Masses, Partial Balancing of Unbalanced Primary Force in a Reciprocating Engine, Partial Balancing of Locomotives	10.8.19	Completed

	6		Variation of Tractive Force, Swaying Couple, Hammer Blow	13.8.19	Completed
7	1		Gyroscopic couple and pre-cessional motion, Effect of gyroscopic couple on aero plane and ship.	16.8.19	Completed
	2		Stability of two wheel and four wheel vehicles taking turn.	21.8.19	Completed
IA	1		Introduction to vibration, Natural frequency of free longitudinal vibrations, Natural frequency of free transverse vibrations.	22.8.19	Completed
	2		Differential equations of vibratory motions (torsional); Natural frequency of free longitudinal vibration Equilibrium method.	27.8.19	Completed
	3		Energy method (Rayleigh's maximum energy principle); Effect of inertia in longitudinal vibration;	3.9.19	Completed
	4		Natural frequency of free transverse vibration of a beam due to point loads - Rayleigh's method	7.9.19	Completed
IB	1		Whirling of shaft, synchronous whirling, solved numerical problems	13.9.19	Completed
	2		Critical or whirling speed of a shaft, Frequency of free damped vibrations, - Dunkerley's method.	18.9.19	Completed
2	1		Free damped vibration; Damping factor	18.9.19	Completed
	2		Logarithmic decrement, solved numerical problems	20.9.19	Completed
3	1		Forced vibration, concept of under damped, critically damped and over damped system;	26.9.19	Completed
	2		Dynamic magnifier (magnification factor); Vibration isolation and transmissibility.	17.10.19	Completed
	3		Solved numerical problems based on this chapter.	24.10.19	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
33	28		

Remarks: Syllabus completed within specified time.

J. Ghosh 30.10.19
Signature of the Faculty

Remarks: _____

BA 30.10.19
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering	Session: 2018-19
Year: 4th	Semester: 8th
Paper Name: Quality & Reliability Engineering	Paper Code: PE-ME 601A
Contact: 3 (3L)	Credit: 3
Available Weeks: 11	No. of Periods: 33
Name of the Faculty: Samir Ghosh	Designation: Asst. Prof.

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1	1		Introduction to management of product quality, Evolution of Quality Control, Changing Quality Concepts.	2.1.2019	Completed
	2		Modern Concept of Total Quality Management, its advantages, disadvantages and effects.	10.1.19	Completed
	3		Contribution of Quality masters (Deming, Juran, Crosby, Ishikawa, Taguchi)	15.1.19	Completed
2	1		Customer's needs, customers segments, Assessment of Customer's needs	17.1.19	Completed
	2		Formulation of Design Specifications definition and purpose, contents	19.1.19	Completed
	3		Standardization; Costs of Quality, types of cost quality, cost of quality resources able of Contents.	31.1.19	Completed
	4		Quality Circles; 5-S concept Quality Circle definition, History of Quality Circle, Needs of Quality Control Circle, quality circle steps.	2.2.19	Completed
3	1		Concept of Total Quality, Difference between "Quality" Management and "Total Quality" Management	5.2.19	Completed
	2		Total quality maintenance, total quality in service sector, role of Customer and People in Total Quality Management	8.2.19	Completed
	3		Steps for Quality Improvement, Kaizen; Organizing for effective Quality Management	12.2.19	Completed
4	1		Statistical quality control, elements of SQC, Technique of SQC	15.2.19	Completed
	2		Control Charts; Statistical Quality Control Tools, control chart patterns, Statistical Process Control and Process Capability	20.2.19	Completed
	3		Advantages and limitations of SQC, Zero defect programme; Six - Sigma approach	26.2.19	Completed
5	1		Introduction to quality management system, history, its purposes and importance	1.3.19	Completed
	2		Standardization systems of quality management ISO9000 series of Standard	5.3.19	Completed
	3		ISO 14000 Series of Standards	8.3.19	Completed

6	1	Need for Tools and Techniques in TQM, Commonly used Tools for TQM	12.3.19	Completed
	2	Approaches and Deployment of Tools for Quality Planning	16.3.19	Completed
	3	Quality Function Deployment (QFD), concurrent engineering;	20.3.19	Completed
	4	Tools for continuous Improvement – Deming's Plan – Do – Check – Act (PDCA) cycle	27.3.19	Completed
	5	Poka – Yoke (Mistake – Proofing), Taguchi's Quality Loss Function.	29.3.19	Completed
7	1	Concept and definition of reliability; Reliability Parameters:	3.4.19	Completed
	2	Reliability as a function of time, failure rate as a function of time, constant failure rate,	5.4.19	Completed
	3	Mean time to failure (MTTF), MTTF as a function of failure rate,	9.4.19	Completed
	4	Mean time between failure (MTBF), Mean down time (MDT)	11.4.19	Completed
	5	Maintainability & availability, increasing failure rate, bath-tub curve;	13.4.19	Completed
8	1	Causes of failures, Failure modes & Effects Analysis (FMEA).	16.4.19	Completed
	2	Faulty tree analysis (FTA), Tribological failure and monitoring techniques;	18.4.19	Completed
	3	Design based on reliability, redundancy in design	23.4.19	Completed
8	1	Introduction to super charging, super charging limits, turbo charging.	26.4.19	Completed
	2	Introduction to scavenging, ideal and actual scavenging parameters, scavenging pumps	28.4.19	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
33	31		

Remarks: Syllabus Completed within the class taken.

J. Ghosh 02.5.19.
Signature of the Faculty

Remarks: _____

SA 02.05.19
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING
COURSE DIARY



Department: Mechanical Engineering Year: 2nd Paper Name: Strength of Materials Contact: 3L Available Weeks: 12 Name of the Faculty: Samir Ghosh	Session: 2018-2019 Semester: 4th 3rd Paper Code: ME302 Credit: 3 No. of Periods: 36 Designation: Asst. Prof.
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No.	Tutorial No.	Topic/topics Covered	Date	Comments
1A,B,C	1		Introduction to strength of materials, classification of materials, Concept of mechanics of deformable solids; concept of stress developed against external force/pressure; brief review of normal and shearing stress and strain	05.7.2018	Completed
	2		Elastic limit, Hooke's law, deformation of a member due to external load and due to its self-weight, stresses in members with varying cross-section, principle of super position.	24.7.18	Completed
	3		Deformation of taper bars due to external forces, stresses in composite members	26.7.18	Completed
	4		Solve numerical problems based on composite members	28.7.18	Completed
	5		Strain energy in tension and compression	31.7.18	Completed
	6		Elastic constants like Young's modulus, Bulk modulus, rigidity modulus and their relations	3.8.18	Completed
3	1		Beam and classification of beams (cantilever, overhanging, simply supported, etc) load and types of loading (point, uniformly distributed gradually varying load)	4.8.18	Completed
	2-3		Shear force and bending moment, sign conventions, relation between load, shear force and bending moment, shear force and bending moment diagram, solved numerical problems based on different types of beams and loading	8.8.18	Completed
	4		Solved numerical problems based on different types of beams and loading	10.8.18	Completed
	5-6		Pure bending or simple bending, assumptions in theory of simple bending, bending equation, bending stress distribution and neutral axis, shear stress distribution	11.8.18	Completed
	7		Solved numerical problems based on theory of bending	12.8.18	Completed
4	1		Torsion, pure torsion, assumptions for torsional stress and strain in circular shafts, polar moment of inertia, torsion equation for circular shaft.	14.8.18	Completed
	2		Power transmitted by a shaft, composite shafts, strength of shafts.	25.8.18	Completed
	3		Shafts in series and parallel, shafts of varying cross-section, solved numerical problems based on above topics	28.8.18	Completed
	4		Introduction to closed and open coiled helical springs, definitions of some terms relating to the springs, maximum shear stress in helical springs.	30.8.18	Completed
	5		Deflection of a closed coiled helical spring, solid length of closed coiled springs, springs in parallel and series and	31.8.18	Completed

			equivalent stiffness, Solved numerical problems based on above topics		
2	1		Introduction to biaxial stresses, concept of normal stress, principal stress and pure shear. Shear strain and shear strain energy	4.9.18	Completed
	2		Mohr's circle for biaxial stress,	6.9.18	Completed
	3		Solved numerical problems based on this chapter.	7.9.18	Completed
	4		Hoop stress or circumferential stress, determination of hoop stress, longitudinal stress in cylindrical shell and its determination, stresses set up in spherical shell.	11.9.18	Completed
	5		Change in dimensions and volume in thin cylindrical and spherical shell due to internal pressure, solved numerical problems based on the chapter	14.9.18	Completed
5	1		Relation between slope, deflection and radius of curvature, various methods of determining slope and deflection, double integration method.	25.9.18	Completed
	2		Slope and deflection of a beam loaded with different types of loads, maximum slope and deflection.	27.9.18	Completed
	3		Area-moment method, Strain energy method	29.9.18	Completed
	4		Numerical problems related to deflection	3.10.18	Completed
	5		Catigliano's theorem, Superposition method	4/10/18	Completed
	6		Numerical problems related to deflection	9/10/18	Completed
6	1		Definition of column and struts, types of column, critical load end conditions of column, Euler's theory for long column, assumptions in Euler's formula.	10/10/18	Completed
	2		Sign conventions for determining B.M. in columns, Euler's critical load for different end conditions and loading	30.10.18	Completed
			Analysis of column with different end conditions	31/10/18	Completed
	3		Euler's curve; empirical column formulae - (i) Straight line, (ii) parabolic and (iii) Rankine Gordon	10/11/18	Completed
			Solved numerical problems based on column and struts.	11.11.18	Completed

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
33	32		

Remarks: Syllabus Completed within the number of
cdays taken.

S. Ghosh 12.11.2018
Signature of the Faculty

Remarks: _____

SS 12.11.18
Signature of the HOD

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING

LECTURE DIARY

Department: Computer Science and Engineering Year: 2 nd (Section X) Paper Name: Data Structure & Algorithm Contact: 3L Available Weeks: 12 Name of the Faculty: Dibyendu Samanta	Session: 2022- 2023 Semester: 3 rd Paper Code: PCC-CS301 Credit: 3 No. of Periods: 19 Designation: Assistant Professor
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No.	Tutorial No	Topic/Topics covered	Date	Comments
1	L1	-	Algorithm : Definition , Characteristics. Analysis of an algorithm	07/07/22	Completed
1	L2	-	Different Asymptotic Notations	12/07/22	Completed
1	L3	-	Space complexity and time complexity, Analysis time complexity for different code segments	14/07/22	Completed
2	L4	-	ADT Queue : Introduction , Different types of queue	21/07/22	Completed
2	L5	-	Simple Queue and its operations	28/07/22	Partially Completed
2	L6	-	Circular Queue ; concept, Operations	4/8/22	Previous topic and today's topic Completed
2	L7	-	Double ended queue, Priority Queue	16/08/22	Completed
3	L8	-	Tree : Definition, Basic terminologies	19/08/22	Completed
3	L9	-	Different types of trees: Binary tree, Threaded binary tree	25/08/22	Completed
3	L10	-	Binary Search tree : different operations on Binary Search Tree	30/08/22	Completed
3	L11	-	AVL Tree : different operations on Binary Search Tree	1/9/22	Partially covered

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
3	L12		B Tree, B+ Tree, Applications of binary tree and analysis	8/9/22	Previous topic and today's topic covered
4	L13		Objective and properties of different sorting algorithms, Bubble sort	13/9/22	Completed
4	L14		Concept of Selection sort and insertion sort	15/9/22	Completed
4	L15		Merge Sort and Quick Sort	11/10/22	Completed
4	L16		Heap Sort, Performance and Comparison among all the sorting methods	13/10/22	Completed
4	L17		Hashing: Different Hashing functions	20/10/22	Completed
4	L18		Hashing: Collision resolution techniques	1/11/22	Covered
	L19		Remedial class	3/11/22	Doubts were cleared on some topics as per student require

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
19	19	00	01

Remarks: Syllabus covered, a class was arranged to clear the doubts of the students on different topics.

Samanta

Signature of the Faculty

Remarks: Syllabus completed in time.

Samanta

Signature of DIC

Mr. Dibyendu Samanta
DIC, Dept. of CSE
HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING

LECTURE DIARY

Department: Computer Science and Engineering	Session: 2022- 2023
Year: 2 nd (Section Y)	Semester: 3 rd
Paper Name: Data Structure & Algorithm	Paper Code: PCC-CS301
Contact: 3L	Credit: 3
Available Weeks: 12	No. of Periods: 19
Name of the Faculty: Dibyendu Samanta	Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
1	L1	-	Algorithm : Definition , Characteristics. Analysis of an algorithm	7/7/22	Covered
1	L2	-	Different Asymptotic Notations	14/7/22	Covered
1	L3	-	Space complexity and time complexity. Analysis time complexity for different code segments	20/7/22	Covered
2	L4	-	ADT Queue : Introduction , Different types of queue	21/7/22	Partially covered
2	L5	-	Simple Queue and its operations	27/7/22	Covered. Previous topic also covered.
2	L6	-	Circular Queue ; concept, Operations	28/7/22	Covered
2	L7	-	Double ended queue, Priority Queue	3/8/22	Covered
3	L8	-	Tree : Definition, Basic terminologies	4/8/22	Completed
3	L9	-	Different types of trees: Binary tree, Threaded binary tree	18/8/22	Covered
3	L10	-	Binary Search tree : different operations on Binary Search Tree	25/8/22	Partially Completed
3	L11	-	AVL Tree : different operations on Binary Search Tree	01/9/22	Partially Completed. Previous topic covered.

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
3	L12		B Tree, B+ Tree, Applications of binary tree and analysis	7/9/22	Covered. Previous topic completed
4	L13		Objective and properties of different sorting algorithms, Bubble sort	8/9/22	Covered
4	L14		Concept of Selection sort and insertion sort	15/9/22	Covered
4	L15		Merge Sort and Quick Sort	12/10/22	Partially covered
4	L16		Heap Sort, Performance and Comparison among all the sorting methods	17/10/22	Prev topic covered. Today's topic partially covered.
4	L17		Hashing: Different Hashing functions	20/10/22	Completed. Previous topic covered.
4	L18		Hashing: Collision resolution techniques	2/11/22	Covered
	L19		Question & answer session	3/11/22	Discussion was done on MAKAUT Prev Year questions.

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
19	19	00	00

Remarks: Syllabus completed. Discussions were done on MAKAUT previous year questions.

Samanta
Signature of the Faculty

Remarks: Syllabus completed in time as per MAKAUT academic calendar.

Samanta
Signature of DIC
Mr. Dibyendu Samanta
DIC, Dept. of CSE
HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

COURSE DIARY

Department: Electrical Engineering Year: 3rd Paper Name: Electric Circuit Theory Contact: TL + IT Available Weeks: 12 Name of the Faculty: Anikanda Maitra	Session: 2022-2023 Semester: 3 rd Paper Code: PC-EE-301 Credit: 4 No. of Periods: 26 Designation: Assistant Professor
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No	Tutorial No	Topic/Tops covered	Date	Comments
	L1		Introduction to the syllabus, concept of signals and systems	12/7/22	
Unit 1 (Introduction)	L2		Continuous & Discrete, Fixed & Time varying, Linear and Nonlinear, Lumped and Distributed, Passive and Active networks and systems	16/7/22	Completed
	L3		Step, Ramp, Impulse, Sinusoidal, Square, Saw tooth signals	19/7/22	Completed
	L4		Examples of waveform synthesis, Independent & Dependent sources,	27/7/22	Completed
		T1	Tutorial on different signal generation and waveform synthesis.	30/7/22	Completed
Unit 2 (Coupled circuits)	L5		Magnetic coupling, Polarity of coils, Polarity of induced voltage, Concept of Self and Mutual inductance, Coefficient of coupling.	2/8/22	Completed
	L6		Modeling of coupled circuits with examples.	6/8/22	Completed
		T2	Solution of problems.	13/8/22	Completed
Unit 4 (Laplace transforms)	L7		Concept of complex frequency, introduction to Laplace transform and inverse laplace transform, Laplace transform of some common functions.	16/8/22	Partially Completed
	L8		Laplace transform of some common functions(contd.), Impulse & Step & Sinusoidal response of RL, RC, and RLC circuits	27/8/22	Completed
	L9		Impulse & Step & Sinusoidal response of RL, RC, and RLC circuits	30/8/22	To be continued in next class



Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Unit 4 (Laplace transforms)	L10		Impulse & Step & Sinusoidal response of RL, RC, and RLC circuits	3/9/22	Completed
	L11		Transient analysis of different electrical circuits with and without initial conditions	10/9/22	To be continued in next class
		T3	Transient analysis of different electrical circuits with and without initial conditions	13/9/22	Completed
	L12		Concept of Convolution theorem and its application.	14/9/22	Completed
		T4	Solution of Problems with DC & AC sources.	24/9/22	Completed
		T5	Solution of Problems with DC & AC sources.	11/10/22	Completed
Unit 5 (Fourier method of waveform analysis)	L13		Concept of Fourier series and Fourier Transform (in continuous domain only)	12/10/22	Completed
	L14		Concept of even, odd and half wave symmetry	21/10/22	Completed
	L15		Application in circuit analysis	29/10/22	Partially Completed
	L16		Application in circuit analysis (contd.), Solution of Problems	1/11/22	} Two classes taken jointly } completed
		T6	Solution of Problems	1/11/22	
-	L17		Revision	15/11/22	} Two classes taken jointly (Completed)
-	L18		Revision	15/11/22	
-		T7	Revision	16/11/22	} Two classes taken jointly (Completed)
-		T8	Revision	17/11/22	

Note: This paper is shared with one more faculty member.

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
22	22	2	2

Remarks



Signature of the Faculty

Remarks

Signature: *[Handwritten Signature]*
 H.O.D.
 Electrical Engineering
 Hooghly Engineering & Technology College

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE & HUMANITIES

COURSE DIARY

Department: Electrical Engineering
 Year: 2nd
 Paper Name: Electrical and Electronic Measurement
 Contact: 31
 Available Weeks: 15
 Name of the Faculty: Sannistha Basu/see

Session: 2020- 2021
 Semester: 4th
 Paper Code: PE EE 403
 Credit: 3
 No. of Periods: 3
 Designation: Assistant Professor

Module	Lecture No.	Tutorial No.	Topic/Topics covered	Date	Comments
II	L1		Medium resistance measurement methods, Wheatstone bridge	23/2/2021	
	L2		Low resistance measurement methods, Kelvin double bridge	26/2/2021	
	L3		Measurement of high resistances	2/3/2021	
	L4		Megger	5/3/2021	
		T1	Measurements of resistances, practice numericals	9/3/2021	

Module	Lecture No.	Tutorial No.	Topic/Topics covered	Date	Comments
III	L5		Measurement of Inductance by AC bridges: Balanced equation and components of general AC bridges Maxwell Inductance Bridge	12/3/2021	
	L6		Maxwell Inductance-Capacitance Bridge, Hay's Bridge, Andersons Bridge	16/3/2021	
	L7		Measurement of capacitance by AC bridges: De Sauty's Bridge,	19/3/2021	
	L8		Schering Bridge	23/3/2021	
	L9		Measurement of frequency by AC bridges: Wien's Bridge	26/3/2021	
		T2	Solve numerical on inductance measurements	30/3/2021	

Module	Lecture No.	Tutorial No.	Topic/Topics covered	Date	Comments
--------	-------------	--------------	----------------------	------	----------



II	L10		Instrument transformer: Disadvantage of shunt and multipliers, Advantage of Instrument transformers	2/4/2021	
	L11		Principle of operation of Current Transformer (CT): Phasor diagram, operation and errors in CT	6/4/2021	
	L12 and L13		Potential Transformer (PT): Working, operation and errors in PT	9/4/2021 20/4/2021	
		T3	Instrument transformer's numerical and solution	23/4/2021	
Module	Lecture No	Tutorial No	Topic/TOPICS covered	Date	Comments
III	L14		Measurement of Energy: Construction of AC energy meter	4/5/2021	
	L15		Theory and application of AC energy meter	7/5/2021	
	L16		Testing of energy meters	11/5/2021	
	L17 and L18		Potentiometer: Principle of operation and application of Crompton's DC potentiometer	14/5/2021 18/5/2021	
	L19		Polar and Co-ordinate type AC potentiometer	19/5/2021	
	L20		Applications of different potentiometers	21/5/2021	
		T4			25/5/2021
	L21		Remedial class on Module 2	28/5/2021	
	L22		Remedial class on Module 3	1/6/2021	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
19	20	4	2

Remarks: The rest part of the syllabus has been delivered by other faculty member of electrical engineering department. Module II and III has been taken care by me. Two extra remedial classes for improvement of student's performance have been taken and four tutorials have also been conducted to solve numerical except the allotted classes.



Signature of _____ Faculty

Remarks: _____

Signature of the H.O.D.
Electrical Engineering
 Hooghly Engineering & Technology College

HOUGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

COURSE DIARY

Department: Electrical Engineering Year: 3rd Paper Name: POWER SYSTEM I Contact: 2L Available Weeks: 12 Name of the Faculty: Anikendu Maitra	Session: 2022-2023 Semester: 5th Paper Code: PC-EE-502 Credit: 3 No. of Periods: 24 Designation: Assistant Professor
-------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

Module	Lecture No	Tutorial No	Topic/Totops covered	Date	Comments
	L1		Concept of Power System, Introduction to the syllabus	6/7/22	
Unit 2	L2		Overhead line construction: Line supports, Towers, Poles, concept of sag and Dampers.	13/7/22	
	L3		Overhead line construction: Sag, Tension and Clearance, Effect of Wind and Ice on Sag.	14/7/22	
	L4		Overhead line construction: Solution of problems on sag and tension. Revision	20/7/22	
	L5		Corona: Principle of Corona formation, Critical disruptive voltage, Visual critical corona discharge potential	23/7/22	
	L6		Corona loss, advantages & disadvantages of Corona. Methods of reduction of Corona.	30/7/22	
Unit 2	L7		Solution of problems on corona and corona loss. Revision	4/8/22	
Unit 3	L8		Insulators: Choice of insulator material for overhead line. Types of insulators and their use	6/8/22	Power Point Presentation
	L9		Voltage distribution across a suspension insulator string, String efficiency, arcing shield & rings, Methods of improving voltage distribution across Insulator strings	10/8/22	
	L10		Solution of problems on String efficiency.	13/8/22	
	L11		Electrical tests on line Insulators. Revision	27/8/22	



Module	Lecture No.	Tutorial No.	Topic/Topics covered	Date	Comments
Unit 4	L12		Cables: Introduction to underground cables. Need of UG cables and their features. Basic construction of UG cables.	2/9/22	Power Point Presentation is used
	L13		Types of cables, cable components, Resistance, dielectric stress and capacitance of single core & 3-core cables	3/9/22	Power Point Presentation is used
	L14		Optimum cable thickness, grading, dielectric loss and loss angle	7/9/22	
	L15		Solution of Problems on UG cable. Revision	10/9/22	
Unit 1	L16		Generation of Electric Power: General layout of a typical coal fired power station,	14/9/22	PPT is used
	L17		Generation of Electric Power: Hydroelectric power station,	21/9/22	PPT is used
	L18		Generation of Electric Power: Nuclear power station, their components and working principles, comparison of different methods of power generation.	23/9/22	Power Point Presentation is used
	L19		Generation of Electric Power: Introduction to Solar & Wind energy system	12/10/22	Power Point Presentation is used
Unit 6	L20		Tariff: Classification of electrical loads and consumers. Basic concept of power generation economics, concept of load curve, concept of average load, maximum demand, load factor, diversity factor, plant use factor, plant capacity factor.	19/10/22	
	L21		Tariff: Guiding principle of Tariff, different types of tariffs.	21/10/22	
	L22		Tariff: Solution of problems	29/10/22	



Module	Lecture No.	Tutorial No.	Topic/Topics covered	Date	Comments
-	L23		Remedial Class	5/11/22	
-	L24		Remedial Class	9/11/22	

Note: This paper is shared with one more faculty member.

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
24	24	0	2

Remarks:



Ref: _____

H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College
The HOD

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE & HUMANITIES

LECTURE DIARY

Department: Electrical Engineering	Session: 2022-2023
Year: 3rd	Semester: 5 th
Paper Name: ELECTRIC MACHINE - II	Paper Code: PC-EE-501
Contact: 3L	Credit: 3
Available Weeks: 12	No. of Periods: 2 (where periods shared by other faculty)
Name of the Faculty: Mr. Sandip Das	Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Unit-I: Fundamentals of AC machine windings:	L1		Physical arrangement of windings in stator and cylindrical rotor; slots for windings.	12/07/2022	
	L2		Single-turn coil - active portion and overhang; full-pitch coils, concentrated winding, distributed winding.	19/07/22	
	L3		Winding axis, 3D visualization of the above winding types, Air-gap MMF distribution (introduction).	24/07/22	
	L4		Air-gap MMF distribution with fixed current through winding-concentrated and distributed.	25/07/22	
	L5		Sinusoidally distributed winding, winding distribution factor.	02/08/22	
Unit-II: Pulsating and revolving magnetic fields:	L6		Constant magnetic field, pulsating magnetic field - alternating current in windings with spatial displacement.	12/07/2022	
	L7		Magnetic field produced by a single winding - fixed current and alternating current.	24/07/22	
	L8		Pulsating fields produced by spatially displaced windings. Windings spatially shifted by 90 degrees.	10/08/22	
	L9		Addition of pulsating magnetic fields, Three windings spatially shifted by 120 degrees (carrying three-phase balanced	18/08/22	class taken for A.M.S.V's class



SND

			currents).		
	L10		Revolving magnetic field.	23/08/22	
		T1	Unit I & II	24/08/22	Extra class taken for class
Unit-V: Synchronous machines:	L11		Constructional features, cylindrical rotor synchronous machine.	03/08/22	
	L12		Generated EMF.	24/08/22	
	L13		Equivalent circuit and phasor diagram.	24/08/22	
	L14		Armature reaction.	30/08/22	
	L15		Synchronous impedance.	07/09/22	
	L16		Voltage regulation.	13/09/22	
	L17		Operating characteristics of synchronous machines, V-curves.	14/09/22	
	L18		Salient pole machine - two reaction theory.	27/09/22	
	L19		Analysis of phasor diagram, power angle characteristics. Parallel operation (introduction).	11/10/22	
	L20		Parallel operation of alternators - synchronization and load division.	12/10/22	
	L21		Remedial Class.	03/11/22	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
20	22	02	01

Remarks: This paper has been shared with one more faculty and this lecture diary reflects the portion of the syllabus, which are to be covered by the concerned

Signature of the Faculty

Remarks:

Signature: H.O.D.
Hooghly Engineering College
Electrical Engineering Department

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING

LECTURE DIARY

Paper Name: CONTROL SYSTEM I	Department: ELECTRICAL ENGINEERING
Paper Code: EES03	Session: JULY TO DECEMBER 2018
Year: 3 RD	Credit: 4
Semester: 5 TH	No. of Periods: 3L+1T
Name of the Faculty: SHILPI SAHA	Contact: 4 lecture/week
Designation: Asst. professor	Available Weeks: 11

Module	Lecture No	Tutorial No	Content (Name of the topic)	Date	Comments
1	L1		Introduction, Need of studying Control system in Real life. Open loop & closed loop concept. Concept of feedback and Automatic control.	17/07/18	
	L2		Effects of feedback, Objectives of control system, Definition of linear and nonlinear systems.	24/07/18	
	L3		Transfer function concept. Properties of Transfer function, pole and zero concept.	25/07/18	
		T1	Block diagram representation of systems and reduction methods	26/07/18	
	L4		Determination of Closed loop transfer function using Block diagram Reduction Technique	27/07/18	
	L5		Terminologies of Signal Flow Graph and Mason's Gain Formula	31/07/18	
	L6		Determination of Closed loop transfer function using Mason's gain Formula - Problems	1/08/18	
		T2	Numerical problems (BDR & SFG) and doubt clearing session.	2/08/18	
	L7		Mechanical translational systems - Basic elements, Free Body Diagram and Transfer Function - Problems	3/08/18	



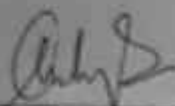
	L8		Mechanical rotational systems - Basic elements, Free Body Diagram and Transfer Function - Problems	8/08/18	
	L9		Electrical Analogous systems - Force-Voltage, Force-Current, Torque-Voltage and Torque-Current analogy	9/08/18	
		T3	Block diagram level description of feedback control systems for position control, speed control of DC motors	10/08/18	
	L10		Modeling of practical systems; Potentiometer, Synchros, Resolvers, Position encoders	14/08/18	
	L11		Mathematical modeling of DC and AC tacho-generators. Actuators, Temperature control, liquid level control, voltage control of an Alternator.	15/08/18	
2.	L12		Test signals - time response of first order systems	16/08/18	
	L13		Time response of second order systems- Different Damping conditions	21/08/18	
	L14		Time domain specifications - Rise time, Peak time, Peak Overshoot and Settling time.	22/08/18	
		T4	Numerical examples based on time response and performance parameter variation of dynamic system.	23/08/18	
	L15		Types and order of systems and Introduction to Steady State Error	24/08/18	
	L16		Determination of Steady State Error using Static Error Constant - Positional, Velocity and Acceleration Error Constant	28/08/18	
	L17		Effects of Pole and Zeros on transient response. Stability by pole location	29/08/18	



		T5	Introduction to Stability – BIBO condition,	30/08/18
	L18,L19		Routh-Hurwitz Criterion – Problems for different cases	31/08/18
3	L20		Drawback of Routh-Hurwitz Criterion and Root Locus Technique – Concept of absolute & relative stability of control system.	4/09/18
	L21		Procedure to construct Root Locus and Determination of stability	5/09/18
		T6	Problems on Root Locus	6/09/18
	L22		Concept of frequency domain analysis. Concept of Bode plots, Construction, rules.	7/09/18
	L23		Gain margin and phase margin determination using Bode plot.	11/09/18
		T7	Stability analysis using Bode Plot.	12/09/18
	L24		Concept of polar plot. Concept of Nyquist contour.	13/09/18
	L25		Nyquist stability criterion	14/09/18
	L26		Different steps of drawing a complete Nyquist Plot for a given system open loop transfer function	19/09/18
	L27		Numerical examples based on Nyquist stability analysis.	20/09/18
		T8	Derivation of Constant M and N circles. Stability analysis using Nichol's Chart	21/09/18
4	L28		Proportional control, Derivative control, Integral control	25/09/18
	L29		Introduction to Compensator – Series and Parallel Compensators	26/09/18



	19	Lead and Lag Compensators - Problems	27/09/18
L30		Lead Lag Compensators - Problems	28/09/18


 Signature of the
H.O.D.
Electrical Engineering
Houghy Engineering & Technology College





HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING



Course Diary

Paper Name: Power System-II

Paper Code:EE-602

Year: 2022

Semester:6th

Name of the Faculty: Chandan Jana

Designation: Assistant Professor

Department: E

Session: 2021-202

Credit:

No. of Periods: 2 per week (Module

I, II, IV & V

Contact: 943412250

Available Weeks:1

Module	Lecture No	Tutorial No	Topics to be covered	Date	Comment
Unit-I Representation of Power system components (2L)	L2		Single-phase representation of balanced three phase networks	2-2-22	
	L2		The one-line diagram and the impedance or reactance diagram, per unit (PU) system.	9-2-22	
		T1	Unit-I	11-2-22	
Unit-II Distribution substation (6L)	L3		Types of substations, location of substations, substation equipment and accessories,	18-2-22	
	L4		Earthing (system & equipment),	4-3-22	
	L5		Earthing (system & equipment),	11-3-22	
	L6		Feeder and distributors,	16-3-22	
	L7		Radial and loop systems.	14-22	
	L8		Radial and loop systems.	2-4-22	
		T2	Unit-II	5-4-22	
		T3	Unit-II	12-4-22	
Unit-IV Faults in Electrical systems (8L)	L9		Transient on a transmission line, short circuit of a synchronous machine under no load & Loaded condition.	13-4-22	
	L10		Transient on a transmission line, short circuit of a synchronous machine under no load & Loaded condition.	19-4-22	



	L11	Transient on a transmission line, short circuit of a synchronous machine under no load & Loaded condition.	22.4.22
	L12	Symmetrical component transformation, sequence impedance and sequence network of	6.5.22
	L13	Symmetrical component transformation, sequence impedance and sequence network of	13.5.22
	L14	Power system, synchronous machine, transmission lines and transformers.	14.5.22
	L15	Symmetrical component analysis of unsymmetrical faults, single line-to-ground fault, line-to-line fault, double line-to-ground fault.	15.5.22
	L16	Symmetrical component analysis of unsymmetrical faults, single line-to-ground fault, line-to-line fault, double line-to-ground fault.	17.5.22
	T4	Unit-IV	18.5.22
	T5	Unit-IV	19.5.22
Unit-V system stability (4L)	L17	Steady state stability, transient stability,	21.5.22
	L18	Equal area criteria,	22.5.22
	L19	Equal area criteria,	24.5.22
	L20	Swing equation, multi machine	26.5.22
	T6	Unit-V	27.5.22
	T7	Unit-V	28.5.22
	Remedial Classes	L21	Remedial Class for Unit-I	29.5.22
L22		Remedial Class for Unit-II	30.5.22
L23		Remedial Class for Unit-IV	31.5.22
L24		Remedial Class for Unit-V	1.6.22

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
			4

Remarks :





Remarks : _____

W.D.
Electrical Engineering
Hooghly Engineering & Technology Coll

This Subject is shared with another faculty.

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE DIARY

Department: Electrical Engineering
 Year: 4th
 Paper Name: ELECTRIC DRIVE
 Contact: 3L+0T
 Available Weeks: 12
 Name of the Faculty: Debolina Pradhan

Session: 2022- 2023
 Semester: 7th
 Paper Code: PC-EE-701
 Credit: 3
 No. of Periods: 36 (36L+0T)
 Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
Unit 1: Electric Drive	L1		Concept, classification, parts and advantages of electrical drives.	19.7.22	
	L2		Types of Loads, Components of load torque, Fundamental torque equations.	20.7.22	
	L3		Equivalent value of drive parameters for loads with rotational and translational motion.	21.7.22	
	L4		Determination of moment of inertia, Steady state stability	26.7.22	
	L5		Transient stability, Multi quadrant operation of drives, Load equalization.	27.7.22	
Unit 2: Motor power rating	L6		Thermal model of motor for heating and cooling.	28.7.22	
	L7		Classes of motor duty	2.8.22	
	L8		Determination of motor rating for continuous, short time and intermittent duty, equivalent current.	3.8.22	
	L9		Torque and Power methods of determination of rating for fluctuating and intermittent loads	4.8.22	
	L10		Effect of load inertia & environmental factors.	5.8.22	
Unit 3: Starting & Braking of Electric Drives	L11		Effect of starting on Power supply, motor and load, Methods of starting of electric motors.	11.8.22	
	L12		Acceleration time, Energy relation during starting.	12.8.22	
	L13		Methods to reduce the Energy loss during starting.	16.8.22	
	L14		Types of braking, braking of DC motor.	17.8.22	
	L15		Braking of Induction motor and Synchronous motor.	18.8.22	
	L16		Energy loss during braking.	25.8.22	
Unit-4:	L17		Modeling of DC motors, State space modeling.	1.9.22	



DC MOTOR drives	L18	State space modeling, block diagram & Transfer function.	3.9.22
	L19	Single phase, three phases fully controlled DC drives.	7.9.22
	L20	Single phase, three phases half controlled DC drives.	8.9.22
	L21	Dual converter control of DC drives.	14.9.22
	L22	Power factor, supply harmonics and ripple in motor current.	15.9.22
	L23	Chopper controlled DC motor drives.	21.9.22
	L24	Closed loop control of DC Drives.	22.9.22
Unit-5: Induction motor drives	L25	Stator voltage variation by three phase controllers	6.10.22
	L26	Speed control using chopper resistance in the rotor circuit.	12.10.22
	L27	Slip power recovery scheme.	14.10.22
	L28	Pulse width modulated inverter fed and current source inverter fed induction motor drive.	1.11.22
	L29	Volts/Hertz Control	2.11.22
	L30	Vector or Field oriented control.	3.11.22
Unit-6:	L31	Variable frequency control, Self Control.	10.11.22
	L32	Voltage source inverter fed synchronous motor drive.	11.11.22
	L33	Voltage source inverter fed synchronous motor drive.	9.12.22
	L34	Vector control.	12.12.22
	L35	Vector control.	14.12.22
Unit: 7	L36	Introduction to Solar and Battery Powered Drive.	15.12.22
	L37	Stepper motor drive.	16.12.22
	L38	Switched Reluctance motor drive.	17.12.22
	L39	Drive consideration for Textile mills, Steel rolling mills.	6.12.22
	L40	Cement mills, Paper mills, Machine tools. Cranes & hoist drives.	9.1.23

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
36	36	4	

H.O.D.
- Electrical Engineering
Hooghly Engineering & Technology College



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE DIARY

Department: Electrical Engineering

Year: 4th

Paper Name: Line Commutated and Active PWM Rectifiers

Contact: 3L

Available Weeks: 12

Name of the Faculty: Debolina Pradhan

Session: 2022-2023

Semester: 8th

Paper Code: PE-EE801A

Credit:3

No. of Periods:3

Designation: Assistant Professor

Module	Lecture No	Tutorial No	Topic/TOPICS covered	Date	Comments
Unit-I Basic Rectifiers and Converters	L1		Half-wave diode rectifier with RL and RC loads, 1-phase full-wave diode rectifier with L and C filter, 1-phase full-wave diode rectifier with LC filter	12.2.22	
	L2		3-phase diode rectifier with L and LC filter, continuous conduction mode.	13.2.22	
	L3		3-phase diode rectifier with L and LC filter; discontinuous conduction mode, review of transformer phase shifting.	15.2.22	
	L4		Review of transformer phase shifting with modeling and advantages, Generation of 6-phase ac voltage from 3-phase ac	18.2.22	
	L5		Analysis of 6-pulse converter with characteristic waveforms. Analysis of 12-pulse converters with inductive loads.	4.3.22	
Unit-II: Analysis of Boost Converter and Inverter	L6		Review of dc-dc boost converter, Power circuit of single-switch ac-dc converter.	11.3.22	
	L7		steady state analysis ac-dc converter, Review of 1-phase inverter and 3-phase inverter(120 degree conduction mode)	16.3.22	
	L8		Review of 1-phase inverter and 3-phase inverter(180 degree conduction mode), Power circuits of 1-phase ac-dc boost converter, steady state analysis.	1.4.22	
	L9		Power circuits of 3-phase ac-dc boost converter, steady state analysis, Effect of Commutation overlap.	2.4.22	
	L10		Closed-loop control structure of single phase ac-dc single switch boost converter, Unity power factor operation of ac-dc single switch boost converter.	5.4.22	
	L11		Steady state analysis of ac-dc bidirectional boost converter: Circuit Diagram, Rectification and regenerative modes, Phasor diagrams, Closed-loop control.	12.4.22	



		structure.		
	T1	Unit-II	12.4.22	
	T2	Unit-II	13.4.22	
	L13	Remedial Class for Unit-I	19.4.22	
	L14	Remedial Class for Unit-II	22.4.22	
Unit-III: Analysis of Flyback Converter	L15	Circuit diagram and analysis of DC-DC flyback converter, output voltage as a function of duty ratio and transformer turns ratio.	6.5.22	
	L16	Power circuit explanation of ac-dc flyback converter, Steady-state analysis of flyback converter, unity power factor operation, closed loop control structure.	13.5.22	
		T3	Unit-III	14.5.22
	L17	Remedial Class for Unit-III	17.5.22	

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
17			3

Remarks: _____



Remarks: _____

H.O.D.
Signature of _____
Electrical Engineering
Hooghly Engineering & Technology College

1.1.1

Course File



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

[ESTD.: 2004]

APPROVED BY AICTE, AFFILIATED TO MAKAUT & RECOGNIZED BY GOVT. OF W.B., DEPT. OF HIGHER EDUCATION

[TECHNICAL]

VIVEKANANDA ROAD • PIPULPATI • P.O. & DIST.: HOOGHLY • PIN: 712103 • WEST BENGAL
ELECTRONICS AND COMMUNICATIONS ENGINEERING DEPARTMENT

E-mail: ece@hetc.ac.in • Website: www.hetc.ac.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING

Vision of the Department

- To provide the students excellent education in research environment for developing them into high class electronics engineers who would be strong in fundamentals, multi-disciplinary in approach, industry-ready, equipped with analytical, design, managerial and entrepreneurial aptitude, who would be much sought-after by any industry, and at the same time, excel in pursuance of higher studies, blossom into extra-ordinary entrepreneurs.

Mission of the Department

- Training the students to become disciplined and also knowledgeable in the field of Electronics and Communication Engineering (ECE) by providing quality education.
- To produce prolific graduates with remarkable skill in envisaging, designing and effectively giving solutions for global needs in the field of Electronics and Communication.
- To be highly competent in various fields of Electronics and Communication Engineering through the best breed laboratory facilities.

S.K.S.
DIC, ECE Deptt.
HETC, Hooghly.



S.K.L. L.H.
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
Syllabus for B. Tech in Electronics & Communication Engineering
 (Applicable from the academic session 2018-2019)

Semester-III

EC301	Electronic Devices	3L:0T:0P	3 credits
--------------	---------------------------	-----------------	------------------

Module I

6L

Energy bands & Current Carriers in Semiconductors: Bonding Forces in Solids, Energy Bands theory in crystals (Qualitative Analysis), Metals, Semiconductors, & Insulators, Fermi-Level, Intrinsic and Extrinsic Semiconductors, Concept of Holes, Carrier Concentration. and Mobility, diffusion and drift of carriers, continuity equation, Injected minority carrier charge, Recombination and generation of charge carriers. Generation and recombination of carriers; Poisson and continuity equation

Module II

10L

P-N junction: Physical Description of p-n junction, Basic device technologies for fabrication of a p-n junction, I-V characteristics, and small signal switching models; Avalanche breakdown, Zener diode, Schottky diode

Bipolar Junction Transistor: Basic Construction, I-V characteristics, Ebers-Moll Model.

Module III

6L

MOSFET: MOS capacitor, C-V characteristics, MOSFET, I-V characteristics, and small signal models of MOS transistor

MODULE IV

10L

Opto-Electronics: Optical absorption in semiconductors, photovoltaic effects, solar cells (p-n junction), Photoconductors, Photodiode, PIN photodiode, Avalanche photodiode, Phototransistor, LED, Semiconductor Laser (p-n junction)

Integrated circuit: fabrication process: oxidation, diffusion, ion implantation, photolithography, etching, chemical vapor deposition, sputtering, twin-tub CMOS process.

Text /Reference Books:

1. G. Streetman, and S. K. Banerjee, "Solid State Electronic Devices," 7th edition, Pearson, 2014.
2. D. Neamen . D. Biswas "Semiconductor Physics and Devices," McGraw-Hill Education
3. S. M. Sze and K. N. Kwok, "Physics of Semiconductor Devices," 3rd edition, John Wiley & Sons, 2006.
4. C.T. Sah, "Fundamentals of solid state electronics," World Scientific Publishing Co. Inc, 1991.
5. Y. Tsididis and M. Colin, "Operation and Modeling of the MOS Transistor," Oxford Univ.Press, 2011.

Course Outcomes:

At the end of this course students will demonstrate the ability to

- CO1. Differentiate the conduction techniques in semi-conductor materials.
- CO2. Analyze characteristics of Semi-conductor diodes and solve problems.
- CO3. Analyze characteristics of Bi-polar Transistors and solve problems.
- CO4. Analyze characteristics of MOS Transistors and solve problems.
- CO5. Differentiate between different Opto-electronic devices.

(Handwritten Signature)
 HOD/DIC/Coordinator
 Dept. of ECE
 Institute of Technology
 Kalyani

(Handwritten Signature)
 Principal in Charge
 Harghly Engineering & Technology College
 1/2, Kalyananda Road, Pinulpat, Harghly.

Paper code: EC301
Paper name: Electronic Device
Department: ECE
Semester: 3rd

At the end of this course students will demonstrate the ability to:

EC301.CO1. Differentiate the conduction techniques in semi-conductor materials.

EC301.CO2. Analyse characteristics of Semi-conductor diodes and solve problems.

EC301.CO3. Analyse characteristics of Bi-polar transistor and solve problems.

EC301.CO4. Analyse characteristics of MOS Transistors and solve problems.

EC301.CO5. Differentiate between different Opto-electronic devices.

EC301.CO6. Understand the IC fabrication process.

CO PO & CO PSO Mapping

Name of the Courses & Course Code	Course Outcomes		Programme Outcomes											Programme Specific Outcomes			
	Course Outcome with Course Code	Description At the end of the course the students will be able to.....	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	POI 2	PSO 1	PSO 2	PSO 3
Electronic Devices (EC301)	EC301.CO1	Differentiate the conduction techniques in semi-conductor materials.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO2	Analyse characteristics of Semi-conductor diodes and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO3	Analyse characteristics of Bi-polar transistor and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO4	Analyse characteristics of MOS Transistors and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO5	Differentiate between different Opto-electronic devices.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO6	Understand the IC fabrication process.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1

Swagata Choudhury

SAS
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Program Outcomes (POs)

The **Program Outcomes (POs)** of the department are:

At the end of the program, the graduates of B.Tech in Electronics and Communications Engineering will be able to -

- PO 1 Engineering knowledge:** Apply knowledge of mathematics, science, and Electronics and Communications Engineering for solving engineering problems and modeling.
- PO 2 Problem analysis:** Design and conduct experiments as well as to analyze and interpret experimental or collected data, simulate and fabricate electronic circuits and systems and make own projects utilizing latest software tools and techniques. They also possess the ability to identify, formulate, research literature and analyze complex engineering problems to reach logical conclusions.
- PO 3 Design / development of solutions:** Design a system, component or process to meet the desired specifications, performance and capabilities; compatible with health, safety, legal, societal and environmental considerations.
- PO 4 Conduct investigations of complex problems:** Use research based knowledge and research methods including design of experiments in analyzing and interpreting data, and synthesizes the data to come to valid conclusion.
- PO 5 Modern tool usage:** Apply appropriate techniques, resources and modern attitudes, IT tools (linking hardware and software) including prediction and modeling to complex engineering activities and research.
- PO 6 Engineer and Society:** Understand the special duty they owe to protect the public's health, safety and welfare by virtue of their professional status as engineers in society.
- PO 7 Environment and sustainability:** Understand and correctly interpret the impact of engineering solutions in global, societal and environmental contexts and demonstrate the knowledge of a need for sustainable development.
- PO 8 Ethics:** Understand ethics of life and professions and abide by them.
- PO 9 Individual and Team-work:** Articulate teamwork principles, work with a multi-disciplinary team, and appreciate the role of a leader, leadership principles, and attitudes conducive to effective professional practice of Electronics and Communication Engineering.
- PO 10 Communication:** Communicate and present effectively both orally and in writing, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
- PO 11 Project management and finance:** Demonstrate knowledge and understanding of the engineering finance and management principles as a member and leader in a team to manage projects in multi-disciplinary environments.
- PO 12 Life-long learning:** Engage in life-long learning, demonstrate knowledge and understanding of contemporary and emerging issues relevant to their domain - demonstrate knowledge and understanding of business practices and principles of management and understand their limitations, develop awareness of legal consequences of engineering solution.



[Signature]
DIC, ECE Deptt.
HETC, Hooghly.

[Signature]
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Program Specific Outcomes

The Program Specific Outcomes (PSOs) of Electronics and Communications Engineering Department are:

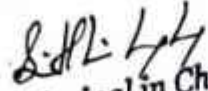
PSO1: The ability to absorb and apply fundamental knowledge of core Electronics and Communication Engineering subjects in the analysis, design, and development of various types of integrated electronic systems as well as to interpret and synthesize the experimental data leading to valid conclusions.

PSO2: Competence in using electronic modern IT tools (both software and hardware) for the design and analysis of complex electronic systems in furtherance to research activities.

PSO3: Excellent adaptability to changing work environment, good interpersonal skills as a leader in a team in appreciation of professional ethics and societal responsibilities.


DIC, ECE Deptt.
HETC, Hooghly.




Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Paper code: EC301
Paper name: Electronic Device
Department: ECE
Semester: 3rd

At the end of this course students will demonstrate the ability to:

EC301.CO1. Differentiate the conduction techniques in semi-conductor materials.

EC301.CO2. Analyse characteristics of Semi-conductor diodes and solve problems.

EC301.CO3. Analyse characteristics of Bi-polar transistor and solve problems.

EC301.CO4. Analyse characteristics of MOS Transistors and solve problems.

EC301.CO5. Differentiate between different Opto-electronic devices.

EC301.CO6. Understand the IC fabrication process.

CO PO & CO PSO Mapping

Name of the Courses & Course Code	Course Outcomes		Programme Outcomes											Programme Specific Outcomes			
	Course Outcome with Course Code	Description At the end of the course the students will be able to.....	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	POI 2	PSO 1	PSO 2	PSO 3
Electronic Devices (EC301)	EC301.CO1	Differentiate the conduction techniques in semi-conductor materials.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO2	Analyse characteristics of Semi-conductor diodes and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO3	Analyse characteristics of Bi-polar transistor and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO4	Analyse characteristics of MOS Transistors and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO5	Differentiate between different Opto-electronic devices.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO6	Understand the IC fabrication process.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1

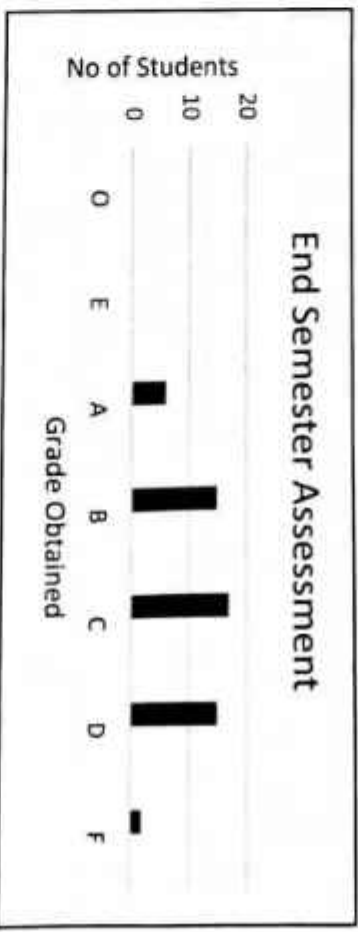
Swagata Choudhury

SAS
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

Hooghly Engineering & Technology College

Name of Faculty	SWAGATA CHOUDHURY	
Name of Course	ELECTRONIC DEVICES	
Course Code	EC301	
Academic Year	2022-2023	
Total No. of Students in the Course	55	
Teaching Methodology	Lecture by Faculty, Class Discussion	
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination	

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	0	0	6	15	17	15	2
Average Marks							6.10
Course Outcome Attainment							2



Swagata Choudhury
Prof. Swagata Choudhury
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpai
 Hooghly, Pin- 712103

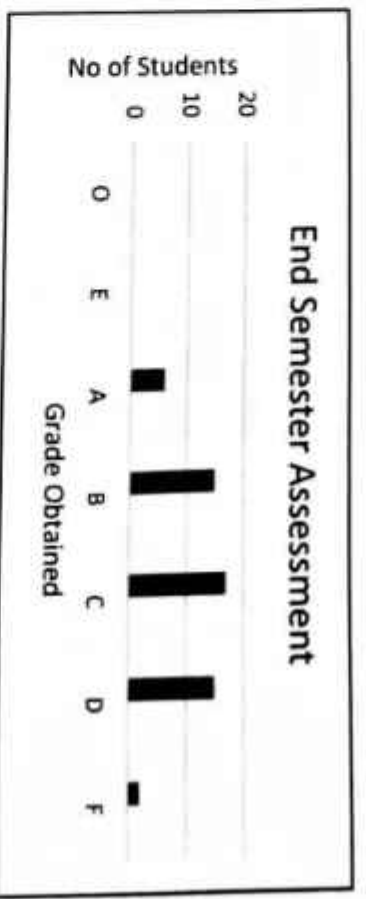
Swagata Choudhury

[Signature]
 HOD/DIC/Coordinator
 Dept. of ECE, HETC, Hooghly.

Hooghly Engineering & Technology College

Name of Faculty	SWAGATA CHOUDHURY
Name of Course	ELECTRONIC DEVICES
Course Code	EC301
Academic Year	2022-2023
Total No. of Students in the Course	55
Teaching Methodology	Lecture by Faculty , Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	0	0	6	15	17	15	2
Average Marks							6.10
Course Outcome Attainment							2



Swagata Choudhury

[Signature]
HOD/DIC/Coordinator
 Dept. of ECE, HETC, Hooghly.

Attainment Calculation

The institute has a well-defined process of regularly assessing the levels of attainment of COs, POs and PSOs.

Presented below is a concise description of this process with the help of an example.

There are 4 attainment levels 1 to 4, with 4 being the maximum value. The results of the end semester examinations conducted by the affiliating university are used to determine the attainment of Course Outcomes for each course. The weighted average marks from the semester result (weightage being determined in terms of the credit assigned to the course) is taken as the benchmark for the course.

Attainment Level 1: If $4 \leq$ Weighted average marks ≤ 5.5

Attainment Level 2: If $5.5 <$ Weighted average marks ≤ 7

Attainment Level 3: If $7 <$ Weighted average marks ≤ 8.5

Attainment Level 4: If $8.5 <$ Weighted average marks ≤ 10

This is the mechanism of determining the attainment level of COs of a course.

Determining the Attainment level of POs and PSOs

A correlation table is at first formed (with the correlated values 1-4 and '-' for no correlation) with COs vs. POs and COs vs. PSOs for every individual course. Then the attainment value of POs and PSOs for a course is calculated in reference with obtained attainment value of course outcome in proportion with the correlation table.

The attainment values for all courses are then consolidated to obtain the final attainment value for each PO and PSO.

Correlation levels 1, 2, 3 and 4 as defined below:

Level 1: Low

Level 2: Medium

Level 3: High

Level 4: Very High

Example:

Let us assume, for Course 1, the details of the final result is:

Grade Point	Credit Point	No. of students
O	10	6
E	9	7
A	8	23
B	7	10
C	6	5
D	5	2
F	2	0
Total		53

BA 14.01.21
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Average marks = $(10 \times 6 + 9 \times 7 + 8 \times 23 + 7 \times 10 + 6 \times 5 + 5 \times 2) / 53 = 7.86$

So the course attainment level is 3 because the average marks lies in between 7 and 8.5

Correlation Matrix for COs-POs and COs-PSOs of a course:

COs of a Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	4	3	2	3	3	2	1	2	3	-	-	-	2	2	3
CO2	3	3	1	3	3	2	1	2	3	-	-	-	2	2	3
CO3	2	2	2	1	3	2	1	2	3	-	-	-	2	2	3
CO4	4	2	2	3	3	4	1	2	3	-	-	-	2	2	3
CO5	3	3	2	3	3	2	1	2	3	-	-	-	2	2	3
Average Correlation Value	3.2	2.6	1.8	2.6	3	2.4	1	2	3	-	-	-	2	2	3

Attainment Calculation of all courses with POs and PSOs for a department:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
COURSE 1	(3.2/4)*3	(2.6/4)*3	(1.8/4)*3	(2.6/4)*3	(3/4)*3	(2.4/4)*3	(1/4)*3	(2/4)*3	(3/4)*3	-	-	-	(2/4)*3	(2/4)*3	(3/4)*3
COURSE 2															
COURSE 70															
Average Attainment Value	3.4	2.6	2.1	2.9	1.7	1.63	1.1	1.4	1.8	1.6	1.3	1.9	2.25	2.56	2.74

In this manner all attainment calculations are done and kept for all departments.

8/14.03.21

Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpatl, Hooghly.

Name of the Courses & Course Code	Course Outcome with Course Code	Description	Programme Outcomes												Programme Specific Outcomes		
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Electronic Devices (EC301)	EC301.CO1	Differentiate the conduction techniques in semi-conductor materials.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO2	Analyse characteristics of Semi-conductor diodes and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO3	Analyse characteristics of Bi-polar transistor and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO4	Analyse characteristics of MOS Transistors and solve problems.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO5	Differentiate between different Opto-electronic devices.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	EC301.CO6	Understand the IC fabrication process.	4	2	1	1	-	1	2	1	-	3	-	-	4	-	1
	Average		4	2	1	1	-	1	2	1	-	3	-	-	4.0	-	1
	Attainment		2.0	1.0	0.5	0.5	-	0.5	1.0	0.5	-	1.5	-	-	2.0	-	0.5

Prasanna Chandra

Prasanna
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.

ANALOG COMMUNICATION SYSTEM

COMMUNICATION :- As a general concept, communication is the process of transmitting meaningful signals from one location to another. There are two types of communication:

- (a) Short distance comm. (Face to Face)
- (b) Long distance comm. (Ex. - smoke signals, light beam, carrier pigeons letter, telephone, e-mail, radio, TV, Fax. etc.)

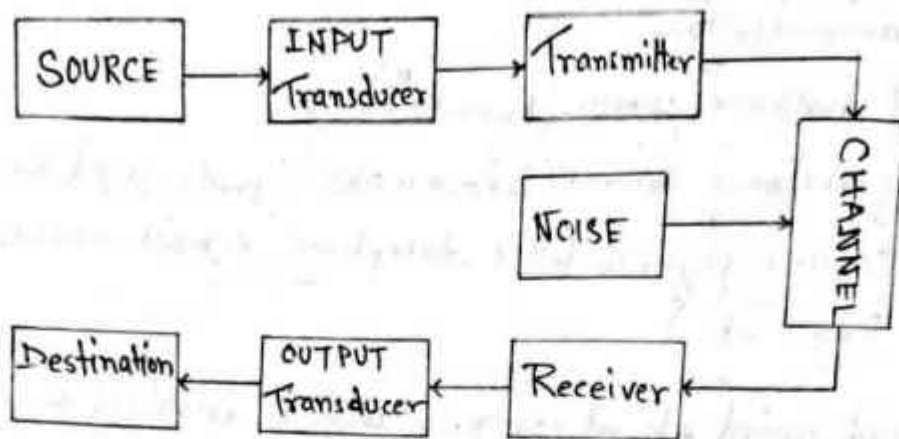
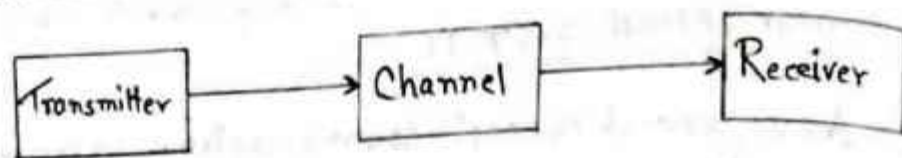
A significant point about comm. is that it involves a sender (transmitter) and a receiver, only receiver can complete the process of communication.

Therefore dual process of transmitting and receiving or coding and decoding an information can be called as comm. Thus this is a two way process.

HISTORICAL PERSPECTIVE:-

<u>YEAR</u>	<u>EVENT</u>
1844	Telegraph - the first electrical comm. system
1876	Telephone - long distance calls are transmitted
1880s	Wireless telegraphy / radio 1887
late 1920s	first TV with analog circuit
1948	Invention of transistor
1960s	The growth of IC and satellite comm. begins.

BASIC BLOCK DIAGRAM OF COMM. SYSTEM



TRANSMITTER/SOURCE :- A component that generates a message and places it on. If data is non-electrical it must be converted by an input transducer into an electrical waveform known as message signal.

TRANSMISSION MEDIUM/CHANNEL :- It means the medium through which the message travels from the transmitter to the receiver. It can be wires, space, co-axial cable or any other medium. Some unwanted energy known as noise is added to the signal at the transmitter, receiver as well as at the channel stage. This is purely random and cannot be predicted. The noise will be received along with the signal at the receiver thus it places limitations on the transmitter system. To reduce the effect of noise the signal strength should be kept high, otherwise noise will completely destroy the signal and the signal should be unintelligible.

RECEIVER/SINK :- The function of the receiver is to recover the message signal contained in the received signal by cancelling the signal modification made at the transmitter for suitable transmission at the channel where the signal is modified by additive noise.

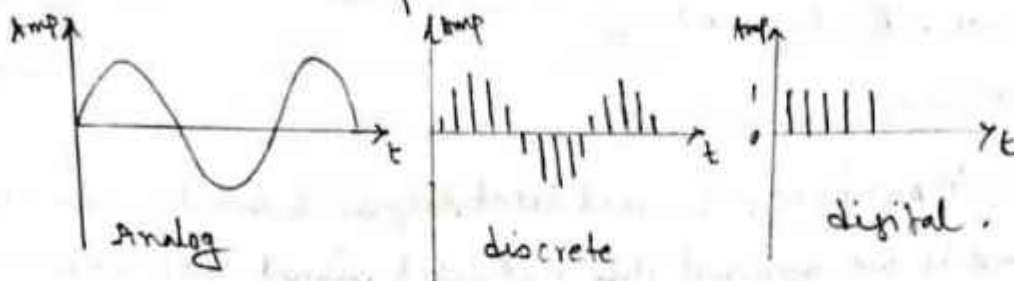
Then the received op i.e. recovered electrical message signals to the op transducer that again produce its original userfriendly form (voice, image, etc).

SIGNAL: A function of one or more independent variables which contains some information is called as signal.

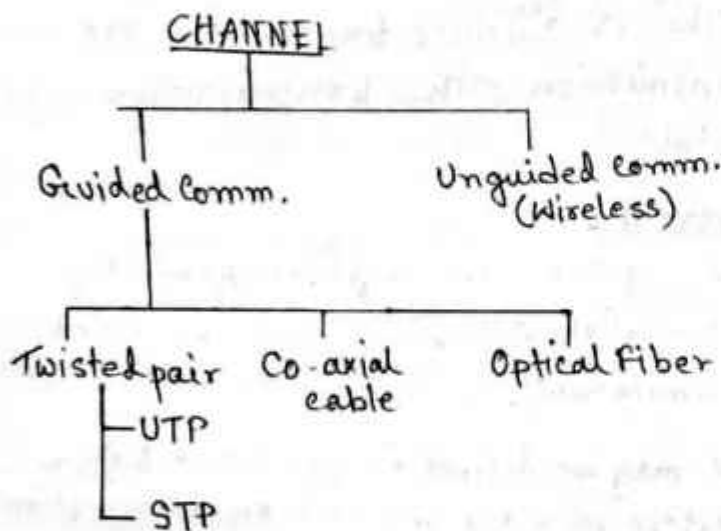
Analog / Continuous signal, its time and amplitude both are continuous.

Discrete signal, its amplitude is continuous but time is discrete.

Digital signal, its amplitude and time both are discrete.



DIFFERENT TYPES OF COMMUNICATION :-



Depends on (direction) Transmitter & Receiver

- SIMPLEX (Unidirectional, ex. Radio, TV Comm)
- Half DUPLEX (Bidirectional but time dependent, ex. ...)
- Full DUPLEX / FULL FULL DUPLEX (Bidirectional, ex. Telephone)

Depends on Transmitted message signal.

- Analog Comm., Here transmitted message signal is analog.
- Digital Comm., Here transmitted message signal is digital.

Depends on Modulation, whether modulated or not.

- Baseband Comm
- Bandpass/passband Comm.

ANALOG COMMUNICATION

DSB-Sc

EC-401

Srs_AC_EC-401

Swarnapriya Samanta

DSBSC MODULATION TECHNIQUE

We know that the expression for AM signal for single-tone modulation can be represented as

$$v_{AM}(t) = V_c \sin(2\pi f_c t) + \left(m_a \frac{V_c}{2}\right) \cos\{2\pi(f_c - f_m)t\} - \left(m_a \frac{V_c}{2}\right) \cos\{2\pi(f_c + f_m)t\}$$

It is observed that

- The carrier term remains constant in amplitude and frequency. It does not contain any information. (The carrier signal, however, serves as an aid to demodulation at the AM receiver).
- In fact, the two sidebands contain complete contents of the modulating signal.
- But the carrier power is more than the sidebands power. Transmission of carrier power is a waste as far as transmission of information is concerned.
- Removing the carrier signal from AM wave (prior to transmission) would allow all of the transmitter power to be dedicated to the two sidebands which contains the actual modulating signal.
- This results in a substantial increase in sideband power levels, and hence the power efficiency.

Mathematical Description of DSBSC Signal

Let the carrier signal be $v_c(t) = \cos(\omega_c t)$, and the modulating signal be $v_m(t) = V_m \cos(\omega_m t)$. Then the DSBSC signal can be expressed as the product of the carrier signal and the modulating signal, that is,

$$v_{DSBSC}(t) = v_c(t) \times v_m(t)$$

$$\Rightarrow v_{DSBSC}(t) = \cos(\omega_c t) \times V_m \cos(\omega_m t) = V_m \cos(\omega_c t) \cos(\omega_m t)$$

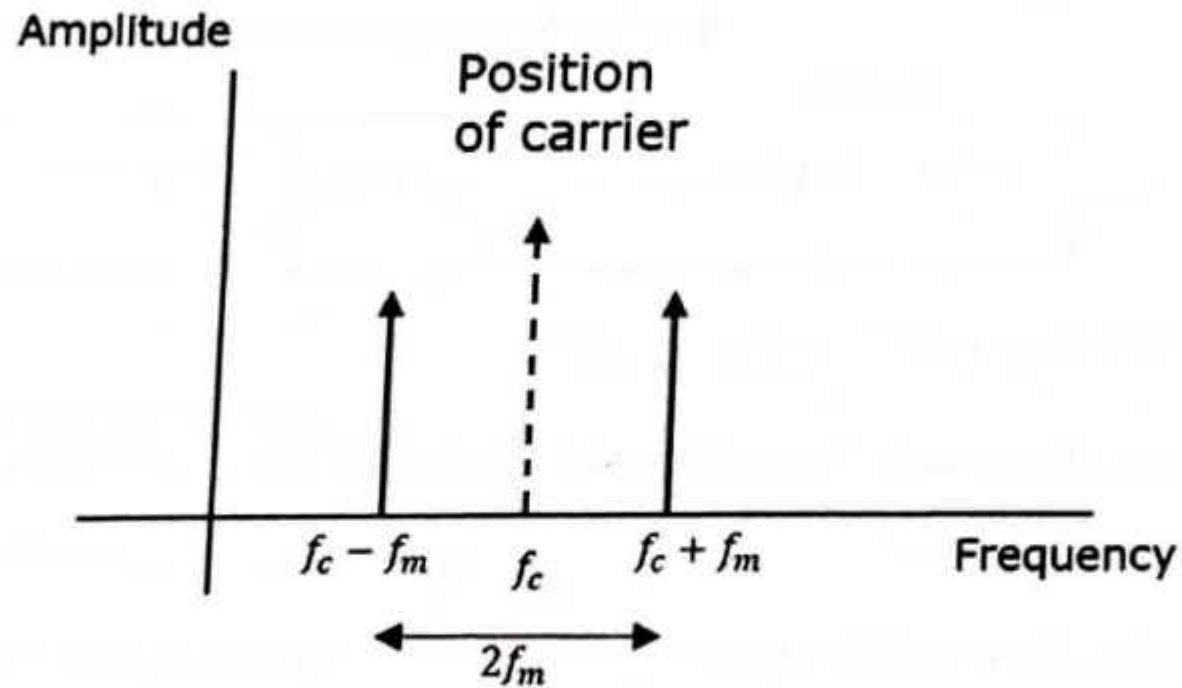
Using the trigonometric identity, $\cos A \cos B = \frac{1}{2} [\cos(A + B) + \cos(A - B)]$, we get

$$\Rightarrow v_{DSBSC}(t) = \frac{V_m}{2} [\cos(\omega_c + \omega_m)t + \cos(\omega_c - \omega_m)t]$$

This is the mathematical expression for DSBSC signal.

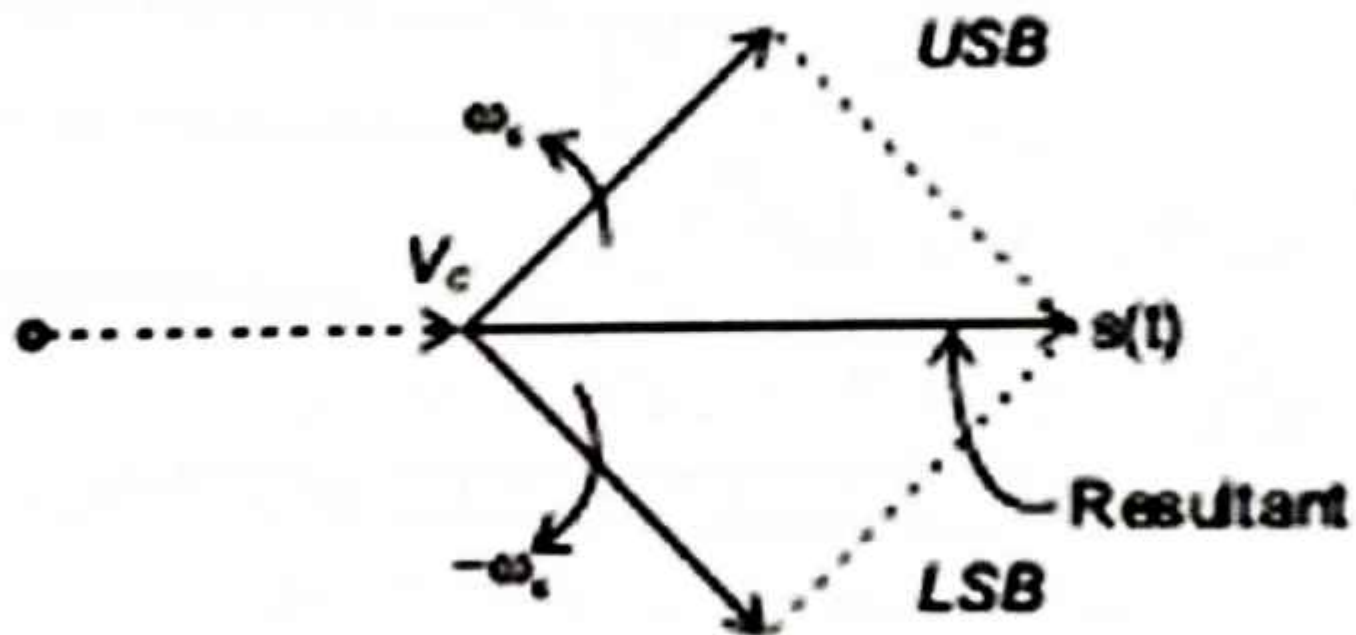
IMPORTANT: DSBSC signal contains the sum and difference of carrier and modulating signal frequencies only, without any term of carrier-signal frequency.

DSBSC system



$$\begin{aligned} &\text{Maximum frequency} - \text{Minimum frequency} \\ &= (f_c + f_m) - (f_c - f_m) \\ &= 2f_m \end{aligned}$$

Phasor diagram of DSB-Sc



Power of DSB-Sc

Total power in AM signal = Lower-sideband power + Upper-sideband power

Or,

$$P_{AM} = P_{lsb} + P_{usb}$$

$$\therefore P_{lsb} = P_{usb} = \frac{m_a^2}{4} P_c$$

$$P_{DSBSC} = P_c \frac{m_a^2}{2}$$

AM Expression in terms of Modulation Index

Let $v_m(t) = \sin(2\pi \times 2000t)$ be the information signal and $v_c(t) = 5 \sin(2\pi \times 10^6 t)$ be the carrier signal. Write the expression for AM wave in terms of modulation index.

Solution We know that AM modulation index, $m_a = \frac{V_m}{V_c}$

For given $v_m(t) = \sin(2\pi \times 2000t)$, $V_m = 1$ volts

For given $v_c(t) = 5 \sin(2\pi \times 10^6 t)$, $V_c = 5$ volts

$$\Rightarrow m_a = \frac{1V}{5V} = 0.2$$

Ans

We know that AM signal can be expressed in terms of modulation index as

$$v_{AM}(t) = V_c [1 + m_a \sin(2\pi f_m t)] \sin(2\pi f_c t \times 10^6 t)$$

$$\Rightarrow v_{AM}(t) = 5 [1 + 0.2 \sin(2\pi \times 2000t)] \sin(2\pi \times 10^6 t)$$

Ans.



ASSIGNMENT-1

ANALOG COMMUNICATION, EC-501

2nd YEAR, 4th SEM. 2021-22

Answer all the questions

1. What is modulation? Why we used modulation technique in communication system?
2. Define amplitude modulation and modulation index. Use a sketch of sinusoidally modulated AM waveform to help to explain the definition.
3. How we calculate modulation index from amplitude modulated wave?
4. The equation of an AM wave is
$$e_{AM} = 100 \left[1 + 0.7 \cos \frac{3000t}{2\pi} + 0.3 \cos \frac{6000t}{2\pi} \right] \sin \frac{10^6 t}{2\pi}$$
. Draw the spectrum with proper value.
5. Draw and explain the operation of balanced modulator circuit using BJT/FET.
6. What is meant by synchronous detection of DSB-SC signal? Discuss the effect of phase and frequency error in synchronous detection.
7. The tuned circuit of the oscillator in a simple AM transmitter employs a $40 \mu H$ coil and $12 nF$ capacitor. If the oscillator output is modulated by audio frequency of $5 kHz$, what are the lower and upper sideband frequencies and the bandwidth required to transmit this AM wave?
8. The carrier amplitude after amplitude modulation varies between $4V$ and $1V$. Calculate depth of modulation.
9. Show that in case of AM with modulation index equal to 1; only 33.33% of the transmitted power is used to carry information.
10. What is VSB modulation? Explain how VSB-SC is advantageous over the other modulation techniques.

Swatul Samanta

1. What is modulation? Why we used modulation technique in communication system?

MODULATION: Modulation may be defined as the process by which some characteristics of a signal called carrier is varied in accordance with the instantaneous value of another signal called modulating signal. Signals containing information are referred as modulating signal. This information bearing signal is also called baseband signal. The carrier frequency is greater than the modulating frequency. The signal resulting from the process of modulation is called modulated signal.

NEED FOR MODULATION:

1. Practicality of antenna:

We know that in case when free space is used as a transmitting medium (i.e. channel) message are transmitted and received with the help of antennas. For efficient radiation and reception the transmitting & receiving antennas must have lengths comparable to a quarter wavelength of the frequency used.

Examples: In AM broadcast systems the maximum audio frequency transmitted from a radio station is of the order of 5 kHz. If this message audio signal were to be transmitted without modulation, then the height of the antenna required for an effective radiation and reception will

$$\text{be } 1/4^{\text{th}} \text{ of the wavelength. Given as: } L = \frac{\lambda}{4} = \frac{1}{4} \cdot \frac{c}{f} = \frac{3 \times 10^8}{4 \times 5 \times 10^3} = 15 \text{ km}$$

It will be totally impracticable to construct and install an antenna of such a height.

However this height of antenna may be reduced by modulation technique and yet effective radiation and reception is achieved. In modulation process low frequency or audio signal at radio stations are translated to higher frequencies spectrum, i.e. radio frequency range. These higher radio frequencies with the small wavelength act as carrier for the audio frequencies (i.e., modulating signal). Thus the height of the antenna required is much reduced and becomes practical.

Example: If an audio frequency is transmitted to a radio frequency carrier of frequency 3MHz.

$$L = \frac{\lambda}{4} = \frac{1}{4} \cdot \frac{c}{f} = \frac{3 \times 10^8}{4 \times 3 \times 10^6} = 25 \text{ m} \quad , \text{ this antenna height may be achieved practically.}$$

It will be totally impracticable to construct and install an antenna of such a height.

However this height of antenna may be reduced by modulation technique and yet effective radiation and reception is achieved. In modulation process low frequency or audio signal at radio

Swarnp Sarmata

stations are translated to higher frequencies spectrum i.e., radio frequency range. These higher radio frequencies with the small wavelength act as carrier for the audio frequencies (i.e. modulating signal). Thus the height of the antenna required is much reduced and becomes practical.

Example: If an audio frequency is transmitted to a radio frequency carrier of frequency 3MHz.

$$L = \frac{\lambda}{4} = \frac{1}{4} \cdot \frac{c}{f} = \frac{3 \times 10^8}{4 \times 3 \times 10^6} = 25m$$
 , this antenna height may be achieved practically.

2. Reduction of noise:

Noise is the major limitation of any communication system. Although noise cannot be eliminated completely, but with the help of several modulation schemes the effect of noise can be minimized.

3. To remove interference:

Another reason for non radiating modulating signal itself is that the frequency range of audio signal is from 20Hz to 20 KHz. In radio broadcasting there are several radio stations. In case there is no modulation all these stations transmit audio or sound signals in the range 20Hz-20KHz. Due to these transmission over same range the programs of different stations will get mixed up.

Hence, in order to keep the various signals separate, it is necessary to translate or shift them to different portions of the electromagnetic spectrum. Thus each station is allocated a band of frequency. This also overcomes the drawback of poor radiation efficiency at low frequency.

Examples: - In AM radio-broad cast, the maximum modulating signal frequency permitted is 5KHz. Amplitude modulation requires a B.W. of 10 KHz for each station or channel. Therefore broadcast channels can be placed adjacent to each other, each channel occupying 10 KHz B.W. Hence, different stations may be allotted bandwidths say from 790 to 800 KHz, 800 to 810 KHz & so on. In radio receiver a tuned circuit at the input selects the desired station and rejects all other stations.

2. Define amplitude modulation and modulation index. Use a sketch of sinusoidally modulated AM waveform to help to explain the definition.

Principles of Amplitude Modulation

The modulating signal modulates amplitude, frequency or phase of the carrier according to its variations in amplitude. This results in amplitude, frequency or phase modulation. The frequency and phase modulation is also called angle modulation.

.....

Swarnika Samanta.

**DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS
ENGINEERING**

Continuous Assessment1

Instruction: Prepare a Power Point Presentation on the following topic containing the number of slides not more than Five. (Excluding Title Slide, Reference slide and Thank you slide).

Upload the presentation in .pptx format as well as in .pdf format using the following Google Form:

<https://forms.gle/cDppvC8hotuk9dnA9>

Sl. No.	Topic	Assigned to Class Roll No.
1	Importance of Human Visual System	1
2	Human Visual System & Image Processing	2
3	Importance of Electromagnetic Spectrum in Image Processing	3
4	Analog and Digital Image	4
5	Steps to form Digital Image	5
6	Advantages and disadvantages of using Digital Images Processing	6
7	Applications of Digital Image Processing	7
8	Basic relationships between pixels - neighborhood	8
9	Digital Image Representation and Neighborhood Methods	9
10	Basic relationships between pixels - adjacency, connectivity, distance measures	10
11	Components of Digital Image Processing System	11
12	Different Image Sensors	12
13	CCD Image Sensors	13
14	CMOS Image Sensors	14
15	Comparison of using CCD and CMOS Image Sensors	15
16	Different Image Storage Devices	16
17	Image Display Device and their Properties	17
18	Image Sampling Method	18
19	Different Conditions of Image Sampling	19
20	Limitations of 2D Image Sampling	20
21	Need for Image Enhancement	21
22	Differences between Point, Mask and Global Operations	22
23	Mathematical interpretation about enhancement through Point Operation	23
24	Point Operation using Brightness Modification	24
25	Point Operation using Contrast Adjustment	25
26	Concept of Histogram and Histogram Histogram Equalisation in the context of image	26
27	Point Operation using Histogram Equalisation	27
28	Application of point operations over image	28

CO1

CO2

**DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS
ENGINEERING**

Continuous Assessment1

Instruction: Prepare a Power Point Presentation on the following topic containing the number of slides not more than Five.(Excluding Title Slide, Reference slide and Thank you slide).

Upload the presentation in .pptx format as well as in .pdf format using the following Google Form:

<https://forms.gle/cDppvC8hotuk9dnA9>

Note:- File name should be **University Roll Number_NAME**

Sl. No.	Topic	Assigned to Class Roll No.
29	Application of Inverse Transformation over image	29
30	Application of Thresholding over image	30
31	Application of Gray-level Slicing over image	31
32	Application of Logarithmic Transformation	32
33	Exponential Transformation over image	33
34	Application of Power Law Transformation over image	34
35	Concept of Linear Spatial Filtering in the context of image.	35
36	Application of Averaging Filter over image	36
37	Limitations of Averaging Filter	37
38	Expression of 3 x 3 Mean filter	38
39	3 x 3 Mean filter behaves like a LPF	39
40	Difference between Weighted Average Filter and Bartlett Filter in the context of image	40
41	Significance of Gaussian filter in Image Processing	41
42	Application of Median Filter over image and Salt and Peeper Noise in image	42

CO2

Sukhojit Malik

Shan
Prof. Swagata Choudhury
Officer-In-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati
Hooghly, Pin- 712103



HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING
Continuous Assessment 2



Department: Electronics and Communications Engineering
Year: 4th
Paper Name: Digital Image and Video Processing

Session: 2023- 2024
Semester: 7th
Paper Code: PE-EC703B

Prepare a Report on the following topic

1. Significance of Gaussian filter in Image Processing.
2. Compute the median value and perform the median filtering operation for the following image:

19	20	23	24	30
32	120	132	140	32
20	18	27	25	28

3. Compute the median value and perform the median filtering operation for the following image:

29	30	28	26	30
32	130	122	135	32
29	30	37	35	38

4. Salt and Peeper Noise in image
5. Application of Median Filter over image
6. Bit-Plane Slicing
7. Concept of Image Enhancement in the Frequency Domain
8. Separable and Non – Separable Filter used in Image Processing
9. Low-pass and High-pass Gaussian Filter in Image Processing
10. Low and High Pass Filter in Frequency Domain Image Analysis
11. Comparisons between LPF & HPF and BPF & BSF in Image Processing
12. Homomorphic Filter
13. Zooming Operation in Image Processing and Zooming through Linear Interpolation Method in Image Processing

35. Edge detection using second order derivative
36. Laplacian operator and its application over image
37. Laplacian of Gaussian Method and its application over image
38. Difference of Gaussian Filter and its application
39. Canny Edge Detector
40. Edge linking
41. Hough Transform and its application
42. Chain code and its application

Question 1-42 are satisfying CO2.

Surbhojit Malik


Prof. Swagata Choudhury
Officer-in-Charge,
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati
Hooghly, Pin- 712103

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

CA-3, 2021-22

DEPARTMENT: ELECTRONICS AND COMMUNICATIONS ENGINEERING

Subject: Analog Communication

Code: EC 401

Year: 2nd 4th Semester

Time : 1 Hour

Full Marks : 25

GROUP-A

I. Answer the following questions (any five)

5x 1 = 5

- What are the two types of analog modulation? CO3
- What is over modulation? CO1
- The ratio of power in upper sideband to that in the lower sideband of an undistorted DSB-DC waveform is _____. CO3
- Write one advantages of SSB-SC over DSB-SC. CO3
- What do you mean by multiplexing? CO5
- A multi-tone modulating signal consists of 1 kHz, 2 kHz, and 3 kHz frequency components. What is the BW of resulting AM signal having carrier frequency of 1MHz? CO3
- VSB modulation has _____ spectrum than SSB but _____ than DSB. CO1 and CO2

GROUP: B

Answer the following questions (any four):

4x5=20

- Describe with a block diagram the principle of operation of a square law modulator generating DSB-SC. CO1
 - Explain low-level and high-level AM modulation with block diagrams. CO3
 - A modulating signal given by $v_m = 2 \sin(2\pi \times 500t)$ amplitude modulates a carrier given by $v_c = 10 \sin(2\pi \times 10^6 t)$. Determine
 - Modulation index
 - Frequency present in the modulated signal
 - Total transmitted power. CO3
 - With neat block diagram explain the principle of SSB-SC generation by phase shift method. CO3
 - Show that in case of AM with modulation index equal to 1; only 33.33% of the transmitted power is used to carry information. CO1
 - What is thermal noise and shot noise? CO4
- Or write down the differences in between FDM and TDM. CO5

Shan's
Prof. Swagata Choudhury
Officer-in-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati
Hooghly, Pin-751003

Swagata Choudhury

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Electronics and Communications Engineering

2nd Year, 4th Sem, Session: 2021-2022, Subject: Analog Communication EC-401

Roll No	Name	8/02/22	9/02/22	10/02/22	15/02/22	16/02/22	17/02/22	3/03/22	9/03/22	10/03/22	13/03/22	16/03/22	17/03/22	22/03/22	23/03/22	24/03/22
1	Rudradeb Chatterjee	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P
2	Avishkek Bhattacharjee	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P
3	Ria Bhattacharjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4	Rachana Patra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5	Sougata Pal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6	Subhadeep Manna	A	.	.	P	P	P	P	P	P	P	P	P	P	P	P
7	Argha Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8	Tanusree Halder	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P
9	Sayantan Mallik	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P
10	Tiyasha Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11	Shreya Dey	A	P	P	.	P	P	P	P	P	P	P	P	P	P	P
12	Kunal Chakraborty	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P
13	Hiranmoy Mallik	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14	Pinku Mondal	P	P	P	.	.	.	.	.	.	.	.	.	.	.	.
15	Anubhav Kr. Dutta	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P
16	Prakriti Majumder	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
17	Arjya Biswas	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P
18	Ayan Bhowmik	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P
19	Disha Sen	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P
20	Kuheli Dutta	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21	Srijani Sau	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P
22	Subham Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Students Remarks

Signatures


Prof. Swagata Choudhury
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati
 Hooghly, Pin- 712103



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
Electronics and Communications Engineering

2nd Year, 4th Sem, Session: 2021-2022, Subject: Analog Communication

Roll No	Name	2/02/22	9/02/22	10/02/22	15/02/22	16/02/22	17/02/22	2/03/22	9/03/22	10/03/22	13/03/22	16/03/22	22/03/22	23/03/22	24/03/22
23	Suman Saha	.	P	.	.	P	P	P	P	P	P	.	P	P	P
24	Souvik Ghosh	.	P	P	.	P	P	P	P	P	P	P	P	P	P
25	Surojit Paul	P	P	.	P	P	P	P	P	P	P	P	P	P	P
26	Soumadip Mukhopadhyay	P	P	P	.	P	P	P	P	P	P	P	P	P	P
27	Abhisekh Dutta	P	P	P	.	P	P	P	P	P	P	P	P	P	P
28	Paramita Routh	.	.	.	.	.	.	.	.	.	.	.	.	.	.
29	Riya Dey	.	.	P	.	P	P	P	P	P	P	P	P	P	P
30	Foyjun De	P	.	P	P	P	P	P	P	P	P	P	P	P	P
31	Arunava Chaki	P	P	P	.	P	P	P	P	P	P	P	P	P	P
32	Suman Samanta	P	P	.	P	P	P	P	P	P	P	P	P	P	P
33	Debosmita Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P
34	Samrat Kauslav Raj	P	P	P	P	P	P	P	P	P	P	P	P	P	P
35	Arkojyoti Bhattacharya	P	P	P	.	P	P	P	P	P	P	P	P	P	P
36	Susmita Samakar	P	P	P	P	P	P	P	P	P	P	P	P	P	P
37	Sourav Nandi	P	P	P	.	P	P	P	P	P	P	P	P	P	P
38	Sagnic Roychowdhury	P	P	.	P	P	P	P	P	P	P	P	P	P	P
39	Rahul Rakshit	.	.	.	P	.	P	P	P	P	P	P	P	P	P
40	Saima Jesmin	P	P	P	.	P	P	P	P	P	P	P	P	P	P
41	Suman Khan	.	P	P	.	P	P	P	P	P	P	P	P	P	P
42	Sumana Hazra	P	P	P	P	P	P	P	P	P	P	P	P	P	P
43	Bishal Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P
44	Ganga Roy	P	.	P	P	P	P	P	P	P	P	P	P	P	P

Sourav Samanta

Suman



Prof. Suman Choudhury
 Officer-in-Charge
 Hooghly Engineering & Technology College,
 Vivekananda Road, Pipulpati
 Hooghly, Pin- 712103

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Electronics and Communications Engineering

2nd Year, 4th Sem, Session: 2021-2022, Subject: Analog Communication

Roll No	Name	5/04/22	6/04/22	7/04/22	12/4/22	15/4/22	19/4/22	21/4/22	28/4/22	05/5/22	10/5/22	11/5/22	12/5/22	17/5/22	24/5/22	25/5/22
1	Rudradeb Chatterjee	P	P	P	P	P	P	P	.	P	P	P	.	P	P	P
2	Avishkek Bhattacharjee	P	P	P	P	P	P	P	.	P	P	P	P	.	P	P
3	Ria Bhattacharjee		P	P	P	.	P	P	.	P	P	P	P	.	P	P
4	Rachana Patra	P	P	P	.	.	P	P	P	P	P	P	P	.	P	P
5	Sougata Pal	P	P	P	.	.	P	.	P	P	P	P	P	P	P	P
6	Subhadecp Manna	P	P	P	P	P	P	.	P	.	P	P	P	P	P	P
7	Argha Saha	P	P	P	.	.	P	P	P	P	P	P	P	.	P	P
8	Tanusree Halder	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P
9	Sayantana Mallik	P	P	P	P	.	P	P	.	P	P	.	P	P	P	P
10	Tiyasha Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11	Shreya Dey	P	.	P	P	.	P	P	P	.	P	P	P	P	P	P
12	Kunal Chakraborty	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P
13	Hiranmoy Mallick	P	.	P	P	P	P	.	P	.	P	P	P	P	P	P
14	Pinku Mondal	.	.	.	.	.	.	.	.	.	P	P	P	.	.	.
15	Anubhav Kr. Dutta	P	P	P	P	P	.	.	P	.	P	P	P	P	P	P
16	Prakriti Majumder	P	P	P	P	P	P	.	P	.	P	P	P	P	P	P
17	Ariya Biswas	P	P	P	P	P	P	.	P	.	P	P	P	P	P	P
18	Ayan Bhowmik	P	P	P	P	P	P	.	P	.	P	P	P	P	P	P
19	Disha Sen	P	P	P	P	P	P	.	P	.	P	P	P	P	P	P
20	Kuheli Dutta	P	P	.	P	P	P	.	P	P	.	P	P	P	P	P
21	Srijani Sau	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
22	Subham Das	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Soumitra Samanta

Ananya



Ananya
Prof. Sougata Choudhury
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati
 Hooghly, Pin- 712103

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
 Electronics and Communications Engineering
 2nd Year, 4th Sem, Session: 2021-2022, Subject: Analog Communication

Roll No	Name	5/04/22	6/04/22	7/04/22	12/4/22	13/4/22	19/4/22	21/4/22	28/4/22	05/05/22	10/5/22	11/5/22	12/5/22	17/5/22	24/5/22	25/5/22
23	Suman Saha	.	.	P	P	.	P	P	P	P	.	P	P	P	P	P
24	Souvik Ghosh	P	P	P	P	P	P	P	.	P	.	P	P	P	P	P
25	Surojit Paul	P	P	P	P	P	P	P	.	.	P	P	P	P	P	P
26	Sourmadip Mukhopadhyay	.	.	P	P	P	.	P	.	.	.	P	.	P	P	P
27	Abhisekh Dutta	P	P	P	P	P	P	P	P	P	P	.	.	P	P	P
28	Paramita Routh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
29	Riya Dey	.	P	P	P	P	.	P	.	.	.	.	.	.	.	.
30	Foyjun De	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
31	Arunava Chaki	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P
32	Suman Samanta	.	P	P	P	P	P	P	P	P	.	P	P	P	P	P
33	Debosmita Das	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P
34	Samrat Kaustav Raj	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
35	Arkojyoti Bhattacharya	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P
36	Susmita Sarrakar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
37	Sourav Nandi	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P
38	Sagnic Roychowdhury	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P
39	Rahul Rakshit	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
40	Salma Jesmin	P	P	P	P	P	.	P	P	P	.	P	P	P	P	P
41	Suman Khan	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P
42	Sumana Hazra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
43	Bishal Das	P	.	.	P	.	P	P	P	P	.	P	P	P	P	P
44	Ganga Roy	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Suman Saha

Amaris



Prof. Swagata Choudhury
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
 Electronics and Communications Engineering
 2nd Year, 4th Sem, Session: 2021-2022, Subject: Analog Communication

Roll No	Name	31/5/22	01/06/22																	
23	Suman Saha	P	P																	
24	Souvik Ghosh	A	P																	
25	Surojit Paul	P	P																	
26	Sourmadip Mukhopadhyay	A	A																	
27	Abhisekh Dutta	A	A																	
28	Paramita Routh																			
29	Riya Dey	P	P																	
30	Foyjun De	P	P																	
31	Arunava Chaki	P	P																	
32	Suman Samanta	P	A																	
33	Debosmita Das	P	A																	
34	Samrat Kauslav Raj	P	A																	
35	Arkojyoti Bhattacharya	A	P																	
36	Susmita Sarmakar	P	P																	
37	Sourav Nandi	P	P																	
38	Sagnic Roychowdhury	P	P																	
39	Rahul Rakshit	P	P																	
40	Salma Jesmin	P	P																	
41	Suman Khan	P	A																	
42	Sumana Hazra	P	P																	
43	Bishal Das	P	P																	
44	Ganga Roy	P	P																	

Sudatup Samanta

Amavis



Swamis
Prof. Swagata Choudhury
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati
 Hooghly, Pin- 712103

INDIVIDUAL ROUTINE FOR ODD SEMESTER 2022

PROF. SWAGATA CHOUDHURY

DAY	TIME	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40
TUESDAY			ELECTRONIC DEVICE (ECE-2ND YR)						
WEDNESDAY				ELECTRONIC DEVICE LAB (GR-B) (ECE-2ND YR)					
THURSDAY			POWER ELECTRONICS (ECE-3RD YR)						
FRIDAY				POWER ELECTRONICS (ECE-3RD YR)			ELECTRONIC DEVICE LAB (GR-B) (ECE-2ND YR)		
SATURDAY			POWER ELECTRONICS (ECE-3RD YR)		ELECTRONIC DEVICE (ECE-2ND YR)				

Swagata Choudhury

Sw
 HOD/DIC/Coordinator
 Dept. of ECE, HETC, Hooghly.

Hooghly Engineering & Technology College

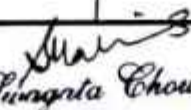
Assessment Rubrics of Continuous Evaluation (CA1)

Paper Name: CMOS VLSI DESIGN

Paper Code: PE-EC603C

Component	Marks	Proficient	Acceptable	Needs Improvements
Topic Covered	5	Topic is identified and fully covered.	Topic is mostly identified but not covered fully.	Topic is neither identified nor covered.
Written Communication	5	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow. Diagrams or analyses are clear. Sentences are free from spelling and grammatical errors.	Report is mostly well organized and clearly written. The underlying logic is partially articulated. Diagrams or analyses are mostly clear. Sentences are mostly free from spelling and grammatical errors.	Report lacks an overall organization. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult to understand.
Presentation Visual Aids	5	Slides are error-free and logically present the main contents.	Slides are mostly error-free and almost logically present the main contents.	Slides contain errors and have lack of logic.
Oral Presentation	5	Speakers are audible and fluent on their topic, and do not rely on notes to present or respond.	Speakers are mostly audible and fluent on their topic, and require minimum referral notes.	Speakers are often inaudible or hesitant, often speaking incomplete sentences. Speakers rely heavily on notes.
Body Language	5	Speakers make eye contact with audience and demonstrate a high level of comfort and connection with the audience.	Speakers break eye contact with audience and demonstrate a slight discomfort with the audience.	Speakers make little or no eyecontact with audience, and demonstrate a high degree of discomfort interacting with the audience.




Prof. Sunita Choudhury
Officer-in-Charge
Hooghly Engineering & Technology College,
Vivekananda Road, Pipulpati
Hooghly, Pin- 712103


Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Hooghly Engineering & Technology College

Assessment Rubrics of Continuous Assessment 2

Paper Name: CMOS VLSI DESIGN

Paper Code: PCEC603C

Component	Marks	Very Poor Up to 20%	Poor Up to 40%	Average Up to 60%	Good Up to 80%	Very good Up to 100%
Topic Covered	5	Topic is neither identified nor covered.	Topic is partially identified but not covered.	Topic is fully identified but not covered.	Topic is fully identified and partially covered.	Topic is identified and fully covered.
Report writing skill	5	Report lacks an overall organization and is not written clearly.	The report is partially organized but is not written clearly.	The report is partially organized and is partially written clearly.	The report is fully organized and is partially written clearly.	Report is well organized and clearly written.
Inquisitiveness	5	Student has less degree of curiosity and seeks no information.	Student has little degree of curiosity and seeks no information.	Student has little degree of curiosity and seeks some information.	Student has high degree of curiosity and seeks some information.	Student has high degree of curiosity and seeks many additional information.
References	5	Citations are incomplete or missing or inaccurate.	Cited less sources of information and images improperly to demonstrate the report.	Cited most sources of information and images improperly to demonstrate the report.	Cited all sources of information and images partially to demonstrate the report.	Cited all sources of information and images accurately to demonstrate the report.
Execution of assignment	5	Does not execute assignment independently	Partially execute assignment independently	Moderately execute assignment independently	Mostly execute assignment independently	Fully executes assignment independently



Suresh
Prof. Suresh Choudhury
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati
 Hooghly, Pin- 712103

S.P.L. 44
Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
 (Applicable from the academic session 2018-2019)

Course Code : BS-M101	Category : Basic Science Course
Course Title : Mathematics – I A	Semester : First (CSE & IT)
L-T-P : 3-1-0	Credit: 4
Pre-Requisites: High School Mathematics	

Module No.	Description of Topic	Lectures Hours
1	Calculus (Integration): Evolute and involute; Evaluation of definite and improper integrals; Beta and Gamma functions and their properties; Applications of definite integrals to evaluate surface areas and volumes of revolutions.	8
2	Calculus (Differentiation): Rolle's Theorem, Mean value theorems, Taylor's and Maclaurin's theorems with remainders; Indeterminate forms and L'Hospital's rule; Maxima and minima.	6
3	Matrices: Matrices, Vectors: addition and scalar multiplication, matrix multiplication; Linear systems of equations, linear Independence, rank of a matrix, determinants, Cramer's Rule, inverse of a matrix, Gauss elimination and Gauss-Jordan elimination.	7
4	Vector Spaces: Vector Space, linear dependence of vectors, Basis, Dimension; Linear transformations (maps), Range and Kernel of a linear map, Rank and Nullity, Inverse of a linear transformation, Rank-Nullity theorem, composition of linear maps, Matrix associated with a linear map.	9
5	Vector Spaces (Continued): Eigenvalues, Eigenvectors, Symmetric, Skew-symmetric, and Orthogonal Matrices, Eigenbases. Diagonalization; Inner product spaces, Gram-Schmidt orthogonalization.	10

Course Outcomes:

The students will be able to:

Apply the concept and techniques of differential and integral calculus to determine curvature and evaluation of different types of improper integrals.

Understand the domain of applications of mean value theorems to engineering problems.

Learn different types of matrices, concept of rank, methods of matrix inversion and their applications.

Understand linear spaces, its basis and dimension with corresponding applications in the field of computer science.

Learn and apply the concept of eigen values, eigen vectors, diagonalisation of matrices and orthogonalization in inner product spaces for understanding physical and engineering problems

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
(Applicable from the academic session 2018-2019)

Learning Resources:

1. Reena Garg, Engineering Mathematics-I, Khanna Publishers.
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons.
3. Michael Greenberg, Advanced Engineering Mathematics, Pearson.
4. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers.
5. Kanti B. Dutta, Mathematical Methods of Science and Engineering, Cengage Learning.
6. Veerarajan T., Engineering Mathematics for first year, Tata McGraw-Hill, New Delhi.
7. S.K. Mapa, Higher Algebra: Abstract and Linear, Sarat Book House Pvt.Ltd.
8. Hoffman and Kunze: Linear algebra, PHI.

P. Debraj
25.7.18

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
(Applicable from the academic session 2018-2019)

Course Code : BS-M102	Category : Basic Science Course
Course Title : Mathematics –I B	Semester : First (All stream except CSE & IT)
L-T-P : 3-1-0	Credit: 4
Pre-Requisites: High School Mathematics	

Module No.	Description of Topic	Lectures Hours
1	Calculus (Integration): Evolute and involute; Evaluation of definite and improper integrals; Beta and Gamma functions and their properties; Applications of definite integrals to evaluate surface areas and volumes of revolutions.	8
2	Calculus (Differentiation): Rolle's Theorem, Mean value theorems, Taylor's and Maclaurin's theorems with remainders; Indeterminate forms and L'Hospital's rule; Maxima and minima.	6
3	Sequence and Series: Convergence of sequence and series, tests for convergence; Power series, Taylor's series, series for exponential, trigonometric and logarithm functions; Fourier series: Half range sine and cosine series, Parseval's theorem.	11
4	Multivariate Calculus: Limit, continuity and partial derivatives, Directional derivatives, Total derivative; Tangent plane and normal line; Maxima, minima and saddle points; Method of Lagrange multipliers; Gradient, Curl and Divergence.	9
5	Matrices: Inverse and rank of a matrix, Rank-nullity theorem; System of linear equations; Symmetric, Skew-symmetric and Orthogonal matrices; Determinants; Eigenvalues and Eigenvectors; Diagonalization of matrices; Cayley-Hamilton Theorem, and Orthogonal transformation.	8

Course Outcomes:

After completing the course the student will be able to

Apply the concept and techniques of differential and integral calculus to determine curvature and evaluation of different types of improper integrals.

Understand the domain of applications of mean value theorems to engineering problems.

Learn the tools of power series and Fourier series to analyze engineering problems and apply the concept of convergence of infinite series in many approximation techniques in engineering disciplines.

Apply the knowledge for addressing the real life problems which comprises of several variables or attributes and identify extremum points of different surfaces of higher dimensions.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
(Applicable from the academic session 2018-2019)

Understand different types of matrices, their eigen values, eigen vectors, rank and also their orthogonal transformations which are essential for understanding physical and engineering problems.

Learning Resources:

1. Reena Garg, Engineering Mathematics-I, Khanna Publishers.
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons.
3. Michael Greenberg, Advanced Engineering Mathematics, Pearson.
4. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers.
5. Kanti B. Dutta, Mathematical Methods of Science and Engineering, Cenage Learning.
6. Veerarajan T., Engineering Mathematics for first year, Tata McGraw-Hill, New Delhi.


25.7.18

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
 (Applicable from the academic session 2018-2019)

Course Code : BS-M201	Category : Basic Science Course
Course Title : Mathematics – II A	Semester : Second (CSE &IT)
L-T-P : 3-1-0	Credit: 4
Pre-Requisites: High School Mathematics and BS-M101	

Module No.	Description of Topic	Lectures Hours
1	Basic Probability: Probability spaces, conditional probability, independence; Discrete random variables, Independent random variables, the Multinomial distribution, Poisson approximation to the Binomial distribution, infinite sequences of Bernoulli trials, sums of independent random variables; Expectation of Discrete Random Variables, Moments, Variance of a sum, Correlation coefficient, Chebyshev's Inequality.	11
2	Continuous Probability Distributions: Continuous random variables and their properties, Distribution functions and densities, Normal, Exponential and Gamma densities.	4
3	Bivariate Distributions: Bivariate distributions and their properties, distribution of sums and quotients, Conditional densities, Bayes' rule.	5
4	Basic Statistics: Measures of Central tendency, Moments, Skewness and Kurtosis, Probability distributions: Binomial, Poisson and Normal and evaluation of statistical parameters for these three distributions, Correlation and regression – Rank correlation.	8
5	Applied Statistics: Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves. Test of significance: Large sample test for single proportion, difference of proportions, single mean, difference of means, and difference of standard deviations.	8
6	Small samples: Test for single mean, difference of means and correlation coefficients, test for ratio of variances - Chi-square test for goodness of fit and independence of attributes.	4

Course Outcomes:

The students will be able to:

Learn the ideas of probability and random variables, various discrete and continuous probability distributions with their properties and their applications in physical and engineering environment.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
(Applicable from the academic session 2018-2019)

Understand the basic ideas of statistics with different characterisation of a univariate and bivariate data set.

Apply statistical tools for analysing data samples and drawing inference on a given data set.

Learning Resources:

1. Reena Garg, Chandrika Prasad, Advanced Engineering Mathematics, Khanna Publishers.
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons
3. S. Ross, A First Course in Probability, Pearson Education India
4. W. Feller, An Introduction to Probability Theory and its Applications, Vol. 1, Wiley.
5. John E. Freund, Ronald E. Walpole, Mathematical Statistics, Prentice Hall.
6. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers.
7. N.G. Das, Statistical Methods (Combined Volume), Tata-McGraw Hill.

Mukherjee
02/01/2019

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
 (Applicable from the academic session 2018-2019)

Course Code : BS-M202	Category : Basic Science Course
Course Title : Mathematics – II B	Semester : Second (All stream except CSE & IT)
L-T-P : 3-1-0	Credit: 4
Pre-Requisites: High School Mathematics and BS-M102	

Module No.	Description of Topic	Lectures Hours
1	<i>Multivariate Calculus (Integration):</i> Multiple Integration: Double integrals (Cartesian), change of order of integration in double integrals, change of variables (Cartesian to Polar), Applications: Areas and volumes, Center of mass and Gravity (constant and variable densities); Triple integrals (Cartesian), Orthogonal curvilinear coordinates, Simple applications involving cubes, sphere and rectangular parallelepipeds; Scalar line integrals, vector line integrals, scalar surface integrals, vector surface integrals, Theorems of Green, Gauss and Stokes.	11
2	<i>First order ordinary differential equations:</i> Exact, linear and Bernoulli's equations, Equations not of first degree: equations solvable for p, equations solvable for y, equations solvable for x and Clairaut's type.	5
3	<i>Ordinary differential equations of higher orders:</i> Second order linear differential equations with constant coefficients, Use of D-operators, Second order linear differential equations with variable coefficients, method of variation of parameters, Cauchy-Euler equation; Power series solutions; Legendre polynomials, Bessel functions of the first kind and their properties.	9
4	<i>Complex Variable – Differentiation</i> Differentiation of complex functions, Cauchy-Riemann equations, Analytic functions, Harmonic functions, determination of harmonic conjugate, elementary analytic functions (exponential, trigonometric, logarithmic) and their properties; Conformal mappings, Mobius transformations and their properties.	6
5	<i>Complex Variable – Integration</i> Contour integrals, Cauchy-Goursat theorem (without proof), Cauchy integral formula (without proof), Liouville's theorem and Maximum-Modulus theorem (without proof); Taylor's series, Zeros of analytic functions, Singularities, Laurent's series; Residues, Cauchy residue theorem (without proof), Evaluation of definite integral involving sine and cosine, Evaluation of certain improper integrals using the Bromwich contour.	9

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
1st Year Curriculum Structure for B.Tech courses in Engineering & Technology
(Applicable from the academic session 2018-2019)

Course Outcomes:

The students will be able to:

- Learn the methods for evaluating multiple integrals and their applications to different physical problems.
- Understand different techniques to solve first and second order ordinary differential equations with its formulation to address the modelling of systems and problems of engineering sciences.
- Learn different tools of differentiation and integration of functions of a complex variable that are used with various other techniques for solving engineering problems.
- Apply different types of transformations between two 2- dimensional planes for analysis of physical or engineering problems.

Learning Resources:

1. Reena Garg, Chandrika Prasad, Advanced Engineering Mathematics, Khanna Publishers.
2. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons.
3. Michael Greenberg, Advanced Engineering Mathematics, Pearson.
4. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers.
5. Kanti B. Dutta, Mathematical Methods of Science and Engineering, Cenage Learning.
6. Veerarajan T., Engineering Mathematics for first year, Tata McGraw-Hill, New Delhi.
7. E. L. Ince, Ordinary Differential Equations, Dover Publications.
8. J. W. Brown and R. V. Churchill, Complex Variables and Applications, Mc-Graw Hill.

Mukherjee 02/01/2019

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Mechanical Engineering
(Applicable from the academic session 2018-2019)

Semester-III

Subject Code : BS-M301	Category: Basic Science course
Subject Name : Mathematics III	Semester : Third
L-T-P : 3-1-0	Credit:4
Pre-Requisites: No-prerequisite	

Objectives:

1. To introduce the solution methodologies for second order Partial Differential Equations with applications in engineering
2. To provide an overview of probability and statistics to engineers

Course Content:

Module No.	Description of Topic	Contact Hrs.
1	Definition of Partial Differential Equations, First order partial differential equations, solutions of first order linear PDEs; Solution to homogenous and non-homogenous linear partial differential equations of second order by complementary function and particular integral method. Second-order linear equations and their classification, Initial and boundary conditions, D'Alembert's solution of the wave equation; Duhamel's principle for one dimensional wave equation. Heat diffusion and vibration problems, Separation of variables method to simple problems in Cartesian coordinates. The Laplacian in plane, cylindrical and spherical polar coordinates, solutions with Bessel functions and Legendre functions. One dimensional diffusion equation and its solution by separation of variable.	14
2	Probability spaces, conditional probability, independence; Discrete random variables, Independent random variables, the multinomial distribution, Poisson approximation to the binomial distribution, infinite sequences of Bernoulli trials, sums of independent random variables; Expectation of Discrete Random Variables, Moments, Variance of a sum, Correlation coefficient, Chebyshev's Inequality. Continuous random variables and their properties, distribution functions and densities, normal, exponential and gamma densities. Bivariate distributions and their properties, distribution of sums and quotients, conditional densities, Bayes' rule.	12
3	Basic Statistics, Measures of Central tendency: Moments, skewness and Kurtosis - Probability distributions: Binomial, Poisson and Normal - evaluation of statistical parameters for these three distributions, Correlation and regression - Rank correlation. Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves. Test of significance: Large sample test for single proportion, difference of proportions, Tests for single mean, difference of means, and difference of standard deviations. Test for ratio of variances - Chi-square test for goodness of fit and independence of attributes.	12

Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Mechanical Engineering

(Applicable from the academic session 2018-2019)

Course Outcomes:

Upon completion of this course, students will be able to solve field problems in engineering involving PDEs. They can also formulate and solve problems involving random variables and apply statistical methods for analysing experimental data.

Textbooks/References:

1. Erwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006.
2. Chandrika Prasad & Reena Garg, Advanced Engineering Mathematics, Khanna Publishing House, 2019.
3. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2010.
4. P. G. Hoel, S. C. Port and C. J. Stone, Introduction to Probability Theory, Universal Book Stall, 2003 (Reprint).
5. S. Ross, A First Course in Probability, 6th Ed., Pearson Education India, 2002.
6. Ramana, Higher Engineering Mathematics, TMH
7. Sashtry, Advanced Engineering Mathematics, PHI

Mukherjee 04/07/2019
H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

Text Books & References Mathematics-II A (BS-M201) CSE 1st YEAR 2nd SEMESTER

Text Books:

1. S.C. Gupta and V.K. Kapoor, *Fundamentals Of Mathematical Statistics (A Modern Approach)*, Sultan Chand & Sons.
2. B. K. Pal and K. Das, *Engineering Mathematics [Volume-III A]*, U. N. Dhar & Sons Private Limited.
3. S.C. Gupta and V.K. Kapoor, *Fundamentals Of Mathematical Statistics (A Modern Approach)*, Sultan Chand & Sons.
4. A. Banerjee, S.K. De, and S.Sen, *Mathematical Probability*, U. N. Dhar & Sons Private Limited.
5. N.G. Das, *Statistical Methods (Combined Volume)*, Tata-Mc Graw Hill.
6. Gun, Gupta, Dasgupta, *Fundamental Of Statistics (Volume-I)*, World Press.

Reference Books:

1. S . K . Mapa, *Higher Algebra - Abstract And Linear*, Sarat Book Distributors.
2. Sheldon Ross, *A First Course In Probability*, Pearson Prentice Hall.
3. A.P. Baisnab and Manoranjan Jas, *Elements of Probability and Statistics*, Tata McGraw-Hill Publishing Company Limited.
4. Amritava Gupta, *Ground Work of Mathematical Probability And Statistics*, Academic Publishers.
5. Amritava Gupta, *Ground Work of Mathematical Probability And Statistics*, Academic Publishers.
6. Sourav Kar and Subrata Karmakar, *Engineering Mathematics – III*, McGraw Hill Education (India) Private Limited.
7. Bikas Chandra Bhui and Dipak Chatterjee, *Mathematics-II Probability And Statistics*, Vikas Publishing House Pvt Ltd.
8. B.S. Grewal, *Higher Engineering Mathematics*, Khanna Publishers.
9. Reena Garg, Chandrika Prasad, *Advanced Engineering Mathematics*, Khanna Publishers.
10. John E. Freund, Ronald E. Walpole, *Mathematical Statistics*, Prentice Hall.

R. Patra
17/02/2023

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

BB
17.02.23

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

COURSE OUTCOME


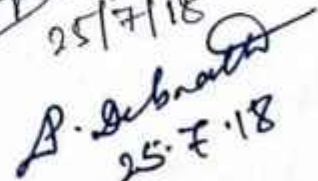
Paper Name	Paper Code	Course	Course Outcome
Mathematics IA	BS-M101	CSE (1 st year, 1 st semester)	<ol style="list-style-type: none"> 1. Apply the concept and techniques of differential and integral calculus to determine curvature and evaluation of different types of improper integrals 2. Understand the domain of applications of mean value theorems to engineering problems 3. Learn different types of matrices, concept of rank, methods of matrix inversion and their applications 4. Understand linear spaces, its basis and dimension with corresponding applications in the field of computer science 5. Learn and apply the concept of Eigen values, Eigen vectors, diagonalisation of matrices and orthogonalization in inner product spaces for understanding physical and engineering problems

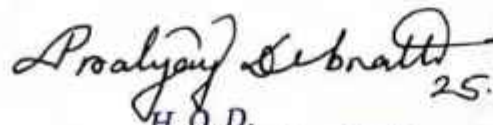
P. Debnath
 25/7/18
P. Debnath
 25.7.18

P. Debnath 25.7.18
 H. O. D.
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.

COURSE OUTCOME

Paper Name	Paper Code	Course	Course Outcome
Mathematics IB	BS-M102	CE (1 st year, 1 st semester)	<ol style="list-style-type: none"> 1. Apply the concept and techniques of differential and integral calculus to determine curvature and evaluation of different types of improper integrals 2. Understand the domain of applications of mean value theorems to engineering problems 3. Learn the tools of power series and Fourier series to analyse engineering problems and apply the concept of convergence of infinite series in many approximation techniques in engineering disciplines 4. Apply the knowledge for addressing the real-life problems which comprises of several variables or attributes and identify extremum points of different surfaces of higher dimensions 5. Understand different types of matrices, their Eigen values, Eigen vectors, rank and their orthogonal transformations which are essential for understanding physical and engineering problems


 25/7/18

 25.7.18


 H. O. D. 25.7.18
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.

COURSE OUTCOME

Paper Name	Paper Code	Course	Course Outcome
Mathematics IIA	BS-M201	CSE (1 st year, 2 nd semester)	<ol style="list-style-type: none">1. Learn the ideas of probability and random variables, various discrete and continuous probability distributions with their properties and their applications in physical and engineering environment2. Understand the basic ideas of statistics with different characterization of a univariate and bivariate data set3. Apply statistical tools for analyzing data samples and drawing inference on a given data set4. The students will learn the basic ideas of statistics including measures of central tendency, regression5. The students will learn the statistical methods of studying data samples

Mukherjee 02/01/2019
H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

R. Patra
02/01/2019

COURSE OUTCOME

Paper Name	Paper Code	Course	Course Outcome
Mathematics IIB	BS-M202	ECE (1 st year, 2 nd semester)	<ol style="list-style-type: none"> 1. Learn the methods for evaluating multiple integrals and their applications to different physical problems 2. Understand different techniques to solve first and second order ordinary differential equations with its formulation to address the modelling of systems and problems of engineering sciences 3. Learn different tools of differentiation and integration of functions of a complex variable that are used with various other techniques for solving engineering problems 4. Apply different types of transformations between two 2- dimensional planes for analysis of physical or engineering problems

Mukherjee
 02/01/2019
 H. O. D.
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.

Banerjee
 2/1/19
A. Senapati
 2.1.19

COURSE OUTCOME

Paper Name	Paper Code	Course	Course Outcome
Mathematics III	BS-M301	ME (2 nd year, 3 rd semester)	<ol style="list-style-type: none">1. To introduce the solution methodologies for second order Partial Differential Equations with applications in engineering2. To provide an overview of probability and statistics to engineers3. The students will learn the basic ideas of statistics including measures of central tendency, regression4. The students will learn the statistical methods of studying data samples

Mukherjee
04/07/2019

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.

R. Patra
04/07/2019

CO-PO-PSO Mapping and Attainment for Electronics and Communications Engineering (2022-2023)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2022-2023 ODD BS-M301)												Programme Specific Outcomes		
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Mathematics (BS-M301)	BS-M301-CO1	The students will learn the ideas of probability and random variables and various discrete and continuous probability distributions and their properties disciplines engineering sciences	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
	BS-M301-CO2	The students will learn the basic ideas of statistics including measures of central tendency, regression by expressing functions in suitable series form analysis	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
	BS-M301-CO3	The students will learn the statistical methods of studying data samples attributes and identify extremum points of different surfaces of higher dimensions	4	4	4	1	-	-	-	-	-	-	-	3	3	1	-
	BS-M301-CO4	To provide an overview of probability and statistics to engineers different objects and also to get some physical properties like centre of gravity, moment of inertia.	4	3	4	2	-	-	-	-	-	-	1	3	3	2	-
		Average	4.0	3.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	3.0	1.8	0.0
		Attainment	2.0	1.6	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.9	0.0

P. Patil
23/05/22

P. Patil
23/05/22

H. E. T. C. Hooghly
Basic Science & Humanities Department

CO-PO-PSO Mapping and Attainment for Computer Science and Engineering (2022-2023)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2022-2023 EVEN BS-M201)												Programme Specific Outcomes			
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
Mathematics- IIA (BS-M201)	BS-M201, CO1	Learn the ideas of probability and random variables, various discrete and continuous probability distributions with their properties and their applications in physical and engineering environment	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO2	Understand the basic ideas of statistics with different characterization of a univariate and bivariate data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO3	Apply statistical tools for analyzing data samples and drawing inference on a given data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO4	The students will learn the basic ideas of statistics including measures of central tendency, regression	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO5	The students will learn the statistical methods of studying data samples	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
		Average	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0
		Attainment	1.0	0.8	0.8	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.5	0.0	0.0

R. Patil
24/08/22

R. Patil
24/08/22

H.E.T. Co. Hoisingh
R. O. D.

Basic Science & Humanities Department
H.E.T. Co. Hoisingh

CO-PO-PSO Mapping and Attainment for Electronics and Communications Engineering (2021-2022)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2021-2022 ODD BS-M301)												Programme Specific Outcomes		
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Mathematics (BS-M301)	BS-M301, CO1	The students will learn the ideas of probability and random variables and various discrete and continuous probability distributions and their properties disciplines engineering sciences	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
	BS-M301, CO2	The students will learn the basic ideas of statistics including measures of central tendency, regression by expressing functions in suitable series form analysis	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
Basic Science & Humanities Department H. O. L. H. E. T. C. Hyderabad 16/03/22	BS-M301, CO3	The students will learn the statistical methods of studying data samples attributes and identify extremum points of different surfaces of higher dimensions	4	4	4	1	-	-	-	-	-	-	-	3	3	1	-
	BS-M301, CO4	To provide an overview of probability and statistics to engineers different objects and also to get some physical properties like centre of gravity, moment of inertia, etc.	4	3	4	2	-	-	-	-	-	-	1	3	3	2	-
	Average		4.0	3.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	3.0	1.8	0.0
	Attainment		4.0	3.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0	1.0	0.0	3.0	1.8	1.8	0.0

CO-PO-PSO Mapping and Attainment for Computer Science and Engineering (2021-2022)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2021-2022 EVEN BS-M201)												Programme Specific Outcomes			
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
Mathematics- IIA (BS-M201) 09/09/22 09/09/22	BS-M201, CO1	Learn the ideas of probability and random variables, various discrete and continuous probability distributions with their properties and their applications in physical and engineering environment	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO2	Understand the basic ideas of statistics with different characterization of a univariate and bivariate data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
Basic Science & Humanities Department H.E.T. G. Hignikar 09/09/22 09/09/22	BS-M201, CO3	Apply statistical tools for analyzing data samples and drawing inference on a given data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO4	The students will learn the basic ideas of statistics including measures of central tendency, regression	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
Basic Science & Humanities Department H.E.T. G. Hignikar 09/09/22 09/09/22	BS-M201, CO5	The students will learn the statistical methods of studying data samples	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
		Average	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0
		Attainment	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0

CO-PO-PSO Mapping and Attainment for Electronics and Communications Engineering (2020-2021)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2020-2021 ODD BS-M301)												Programme Specific Outcomes		
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Mathematics (BS-M301)	BS-M301. CO1	The students will learn the ideas of probability and random variables and various discrete and continuous probability distributions and their properties disciplines engineering sciences	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
	BS-M301. CO2	The students will learn the basic ideas of statistics including measures of central tendency, regression by expressing functions in suitable series form analysis	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
Mathematics (BS-M301)	BS-M301. CO3	The students will learn the statistical methods of studying data samples attributes and identify extremum points of different surfaces of higher dimensions	4	4	4	1	-	-	-	-	-	-	-	3	3	1	-
	BS-M301. CO4	To provide an overview of probability and statistics to engineers different objects and also to get some physical properties like centre of gravity, moment of inertia, etc.	4	3	4	2	-	-	-	-	-	-	1	3	3	2	-
	Average		4.0	3.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	1.8	0.0
	Attainment		4.0	3.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	3.0	1.8	0.0

Mathematics (BS-M301)
 R. Patil
 06/05/21
 H. U. C. E. T. Department
 H. U. C. E. T. Department
 Basic Science & Humanities Department

CO-PO-PSO Mapping and Attainment for Computer Science and Engineering (2020-2021)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2020-2021 EVEN BS-M201)												Programme Specific Outcomes			
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
Mathematics- IIA (BS-M201) R. Raju 22/09/21	BS-M201. CO1	Learn the ideas of probability and random variables, various discrete and continuous probability distributions with their properties and their applications in physical and engineering environment	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201. CO2	Understand the basic ideas of statistics with different characterization of a univariate and bivariate data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
Mathematics- IIA (BS-M201) R. Raju 22/09/21	BS-M201. CO3	Apply statistical tools for analyzing data samples and drawing inference on a given data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201. CO4	The students will learn the basic areas of statistics including measures of central tendency, regression	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
Mathematics- IIA (BS-M201) H. E. T. C. Hooshilkar 22/09/21	BS-M201. CO5	The students will learn the statistical methods of studying data samples	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
		Average	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0
		Attainment	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0

CO-PO-PSO Mapping and Attainment for Electronics and Communications Engineering (2019-2020)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2019-2020 ODD BS-M301)												Programme Specific Outcomes		
	Course Outcome with Course Code	Description At the end of the course the students will be able to.....	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Mathematics (BS-M301) R. S. Reddy 18/08/2020	BS-M301. CO1	The students will learn the ideas of probability and random variables and various discrete and continuous probability distributions and their properties disciplines engineering sciences	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
	BS-M301. CO2	The students will learn the basic ideas of statistics including measures of central tendency, regression by expressing functions in suitable series form analysis	4	3	4	1	-	-	-	-	-	-	-	3	3	2	-
Mathematics (BS-M301) R. S. Reddy 18/08/2020	BS-M301. CO3	The students will learn the statistical methods of studying data samples attributes and identify extremum points of different surfaces of higher dimensions	4	4	4	1	-	-	-	-	-	-	-	3	3	1	-
	BS-M301. CO4	To provide an overview of probability and statistics to engineers different objects and also to get some physical properties like centre of gravity, moment of inertia, etc.	4	3	4	2	-	-	-	-	-	-	1	3	3	2	-
	Average		4.0	3.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	3.0	1.8	0.0
	Attainment		1.0	0.8	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.8	0.4	0.4	0.0

H. E. R. G. Hogarty
Basic Science & Humanities Department
18/08/2020

CO-PO-PSO Mapping and Attainment for Computer Science and Engineering (2019-2020)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2019-2020 EVEN BS-M201)												Programme Specific Outcomes			
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
Mathematics IIA (BS-M201) R-Patha 25/11/20	BS-M201, CO1	At the end of the course the students will be able to.... Learn the ideas of probability and random variables, various discrete and continuous probability distributions with their properties and their applications in physical and engineering environment	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO2	Understand the basic ideas of statistics with different characterization of a univariate and bivariate data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
Mathematics IIA (BS-M201) R-Patha 25/11/20	BS-M201, CO3	Apply statistical tools for analyzing data samples and drawing inference on a given data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201, CO4	The students will learn the basic ideas of statistics including measures of central tendency, regression	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
Basic Science & Humanities H.E.T. Co. Faculty (BS-M201, CO5) R-Patha 25/11/20	BS-M201, CO5	The students will learn the statistical methods of studying data samples	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
		Average	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0
		Attainment	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0	

CO-PO-PSO Mapping and Attainment for Computer Science and Engineering (2018-2019)

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (2018-2019 EVEN BS-M201)												Programme Specific Outcomes			
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
	BS-M201. CO1	Learn the ideas of probability and random variables, various discrete and continuous probability distributions with their properties and their applications in physical and engineering environment	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201. CO2	Understand the basic ideas of statistics with different characterization of a univariate and bivariate data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201. CO3	Apply statistical tools for analyzing data samples and drawing inference on a given data set	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201. CO4	The students will learn the basic ideas of statistics including measures of central tendency, regression	4	3	3	2	1	-	-	-	-	-	-	1	4	2	-	-
	BS-M201. CO5	The students will learn the statistical methods of studying data samples	4	3	3	3	1	-	-	-	-	-	-	1	4	2	-	-
		Average	4.0	3.0	3.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	2.0	0.0	0.0
		Attainment	1.0	0.8	0.8	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.5	0.0	0.0

Mathematics

IIA

(BS-M201)

14/08/19

R. Sankar

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

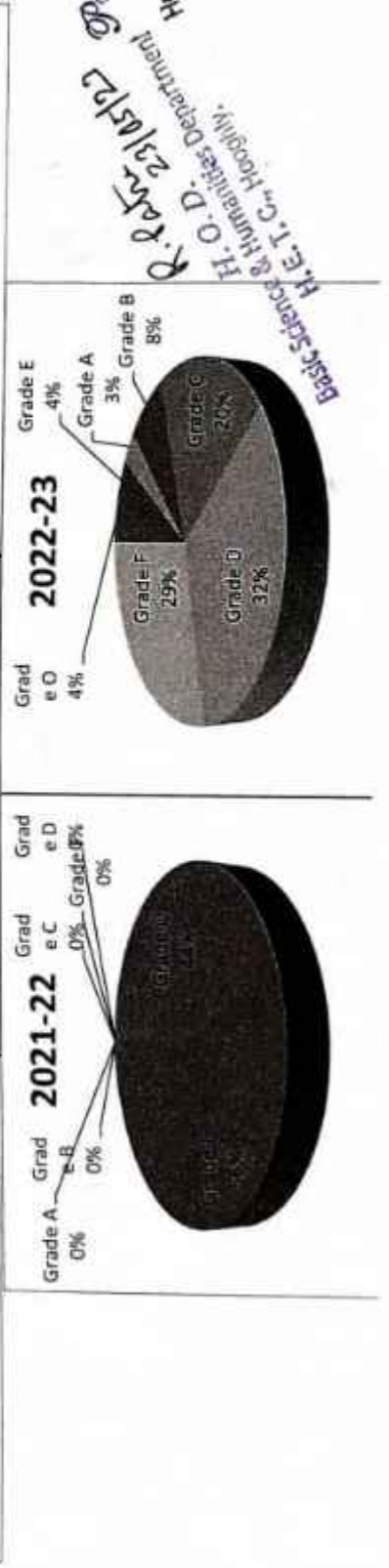
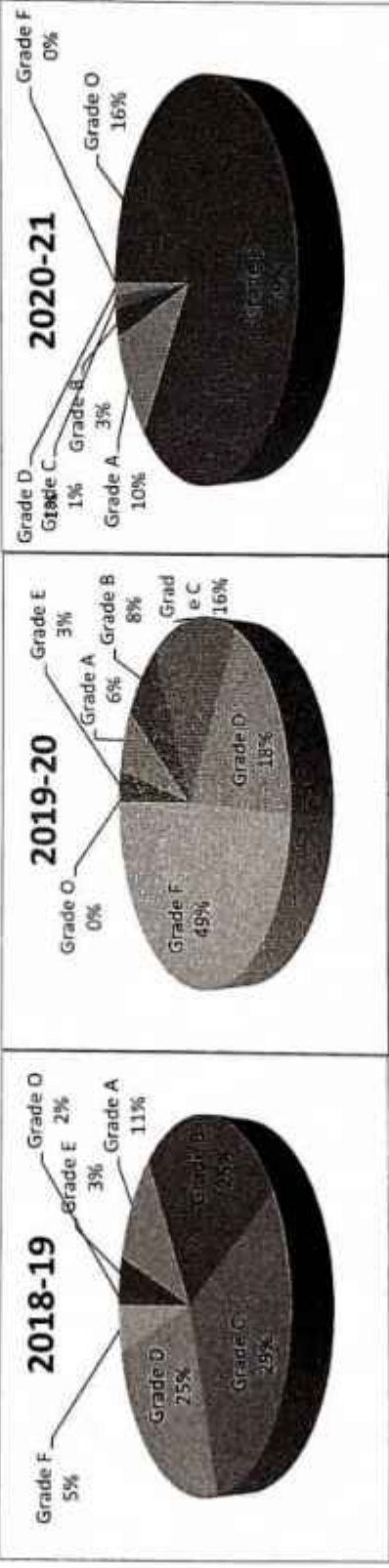
H. E. T. & Hostry

H. E. T. & Hostry

H. E. T. & Hostry

Hooghly Engineering & Technology College	
Department: Basic Science and Humanities	
Name of Faculty	Dr. Pratyay Debnath, Ms. Sudeshna Banerjee
Name of Course	Mathematics-IA
Course Code	BS-M101
Department	Basic Science and Humanities
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade						Average Grade	Course Attainment	Faculty Acronym	
		O	E	A	B	C	D				F
63	2018-19	1	2	7	16	18	16	3	6.19	2	PD, SUB
63	2019-20	0	2	4	5	10	11	31	4.16	1	PD, SUB
77	2020-21	12	53	8	2	1	1	0	8.91	4	PD, SUB
93	2021-22	41	52	0	0	0	0	0	9.44	4	PD, SUB
93	2022-23	4	4	3	7	18	30	27	4.96	1	PD, SUB



Sanku
23/5/23

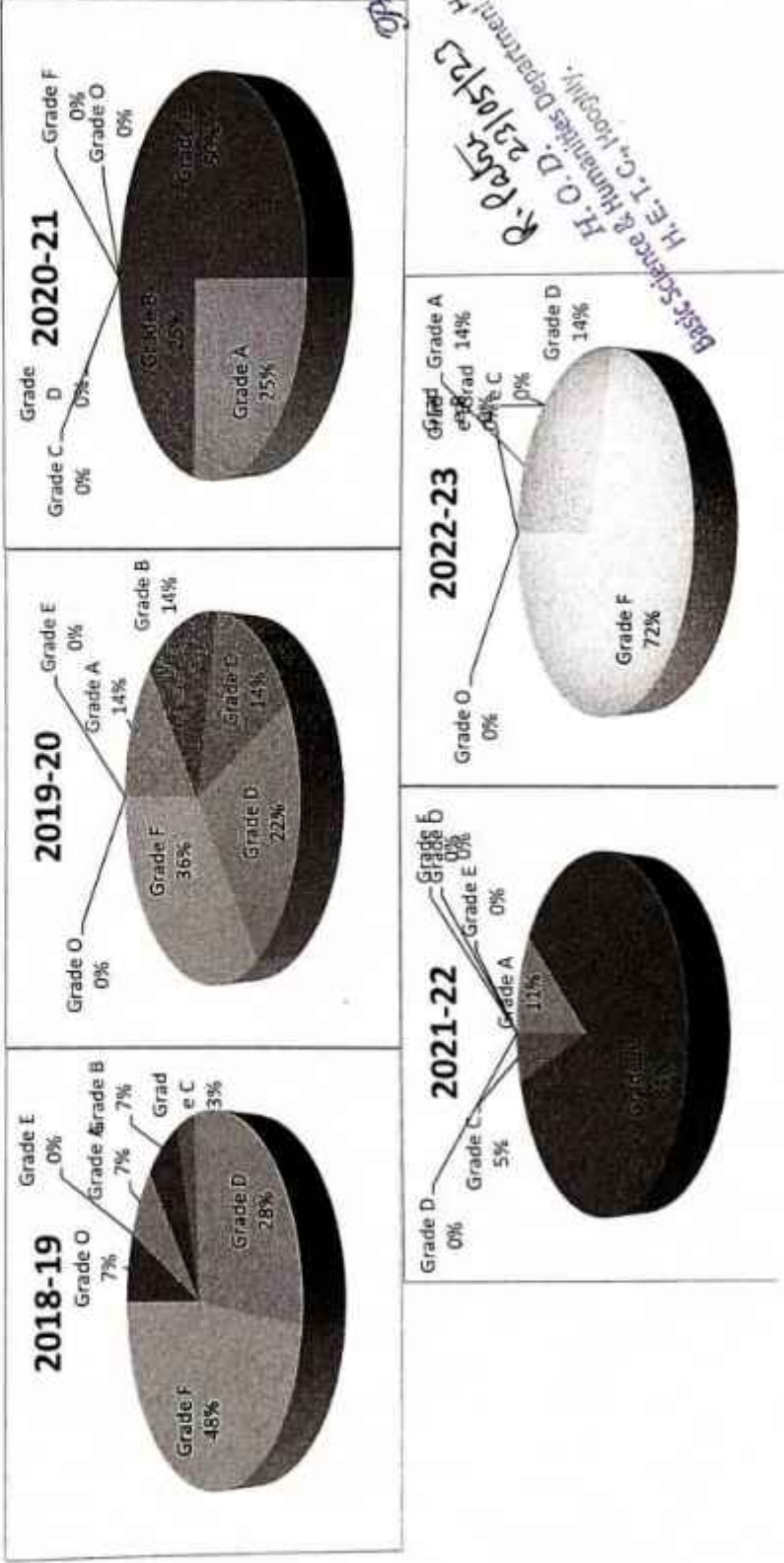
A. Debnath
28.5.23

Sudeshna Banerjee
23/5/23

Hooghly Engineering & Technology College
 Vidyapati Road, Faridpur
 Hooghly, Pin-741003
 H.O. D. 23/05/23
 R. Debnath
 Basic Science & Humanities Department
 Hooghly Engineering & Technology College
 Hooghly, Pin-741003

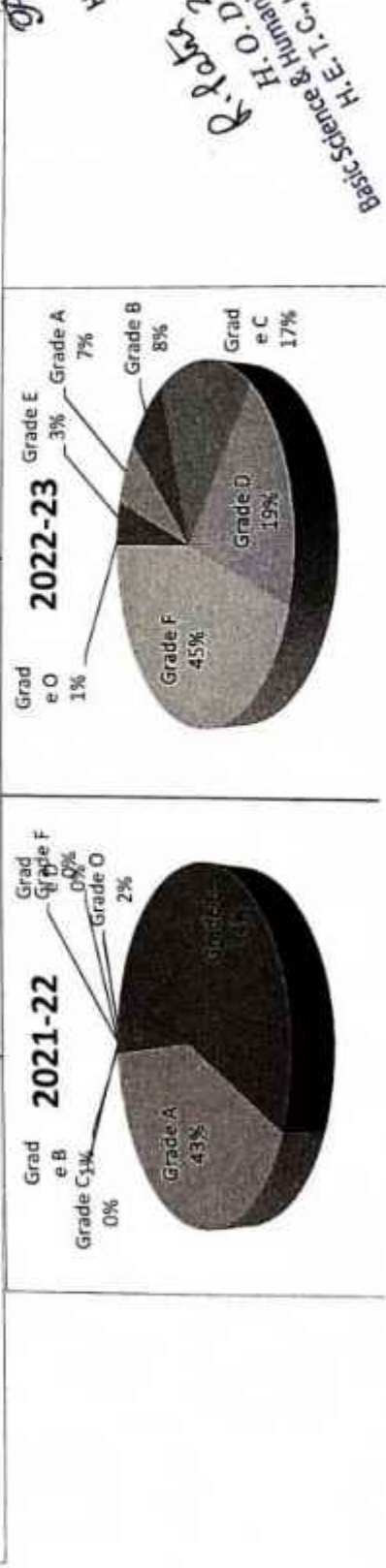
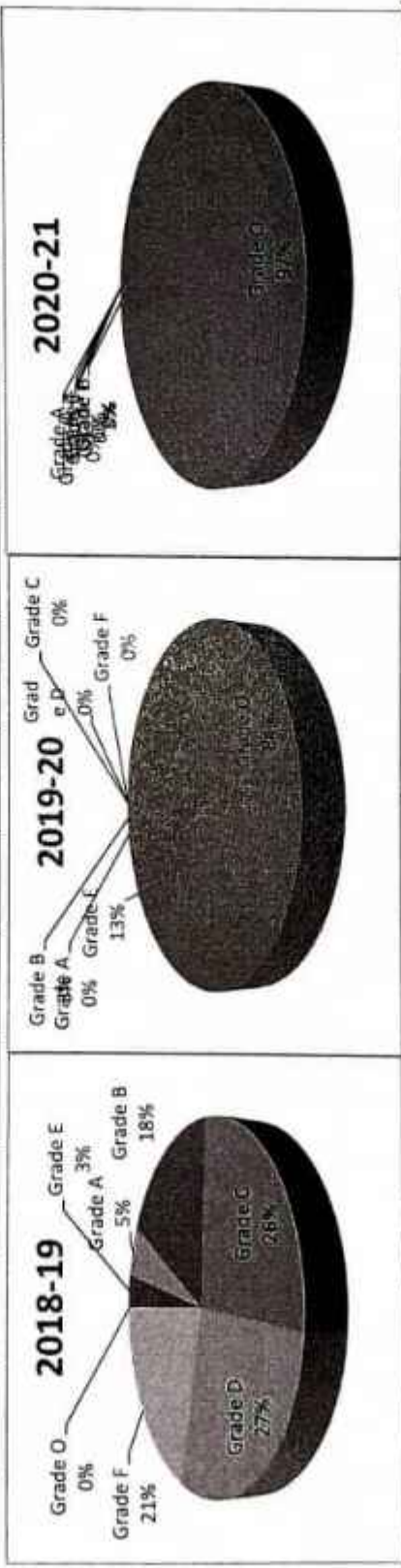
Hooghly Engineering & Technology College	
Department: Basic Science and Humanities	
Name of Faculty	Dr. Pratyay Debnath, Ms. Sudeshna Banerjee
Name of Course	Mathematics-IB
Course Code	BS-M102
Department	Basic Science and Humanities
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade						Average Grade	Course Attainment	Faculty Acronym	
		O	E	A	B	C	D				F
29	2018-19	2	0	2	2	1	8	14	4.28	1	PD, SUB
14	2019-20	0	0	2	2	2	3	5	4.79	1	PD, SUB
8	2020-21	0	4	2	2	0	0	0	8.25	3	PD, SUB
19	2021-22	0	0	2	2	1	0	0	7.05	3	PD, SUB
7	2022-23	0	0	1	0	0	1	5	3.29	1	PD, SUB



Hooghly Engineering & Technology College Department: Basic Science and Humanities	
Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-IIA
Course Code	BS-M201
Department	Basic Science and Humanities
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade						Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D				F
62	2018-19	0	2	3	11	16	17	13	1	RP
63	2019-20	53	8	0	2	0	0	0	4	RP
75	2020-21	73	2	0	0	0	0	0	4	RP
92	2021-22	2	50	39	1	0	0	0	4	RP
91	2022-23	1	3	6	7	15	17	41	1	RP

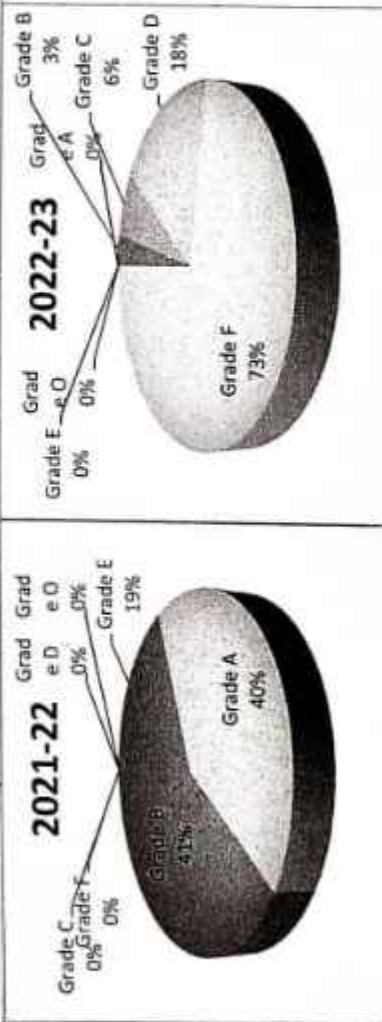
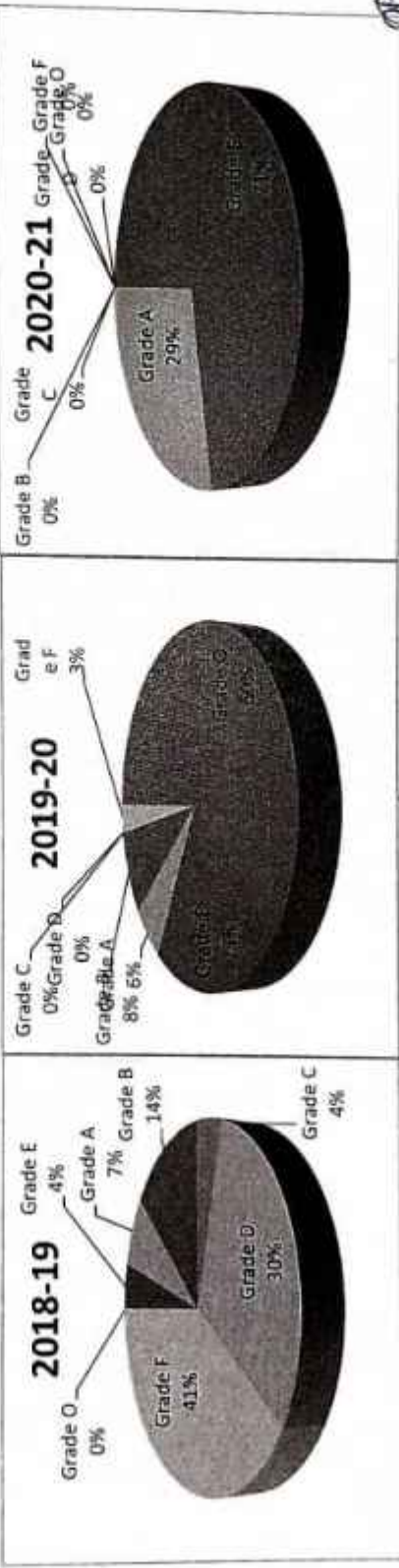


R-8 Patra 24/08/2023

Prof. Sagarika Ghoshal
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pujarai
 Hooghly, Pin- 72103
 H. O. D. 24/08/23
 Basic Science & Humanities Department
 H. E. T. C. Hooghly.

Hooghly Engineering & Technology College	
Department: Basic Science and Humanities	
Name of Faculty	Dr. Pratyay Debnath, Ms. Sudeshna Banerjee
Name of Course	Mathematics-IIB
Course Code	BS-M202
Department	Basic Science and Humanities
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade						Average Grade	Course Attainment	Faculty Acronym	
		O	E	A	B	C	D				F
44	2018-19	0	2	3	6	2	13	18	4.48	1	PD, SUB
35	2019-20	21	8	2	3	0	0	1	9.17	4	PD, SUB
7	2020-21	0	5	2	0	0	0	0	8.71	4	PD
32	2021-22	0	6	13	13	0	0	0	7.78	3	PD, SUB
62	2022-23	0	0	2	4	4	11	45	2.95	1	PD, SUB



Prof. Swagata Ghosh
 Officer-in-Charge
 Hooghly Engineering & Technology College
 Hooghly, Pin-712103
 West Bengal

Dr. Pratyay Debnath
 24/8/23

Dr. Sudeshna Banerjee
 24/8/23

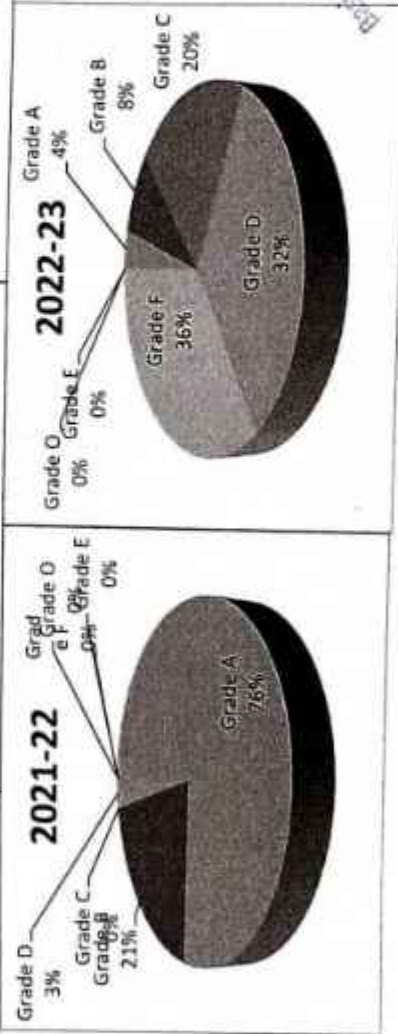
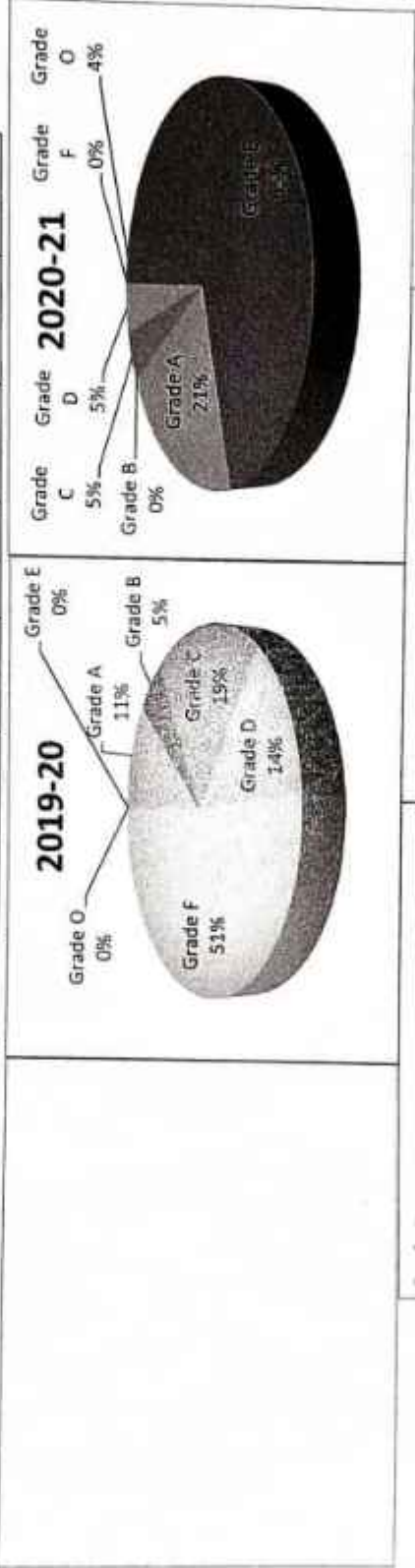
R. P. Das
 24/8/23

H. O. D. Das
 Basic Science & Humanities Department
 H. E. T. C. Hooghly

Hooghly Engineering & Technology College
Department: Basic Science and Humanities

Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-III
Course Code	BS M301
Department	Basic Science and Humanities
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade						Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D				F
37	2019-20	0	0	4	2	7	5	19	1	RP
43	2020-21	2	28	9	0	2	2	0	4	RP
33	2021-22	0	0	25	7	0	1	0	3	RP
25	2022-23	0	0	1	2	5	8	9	1	RP



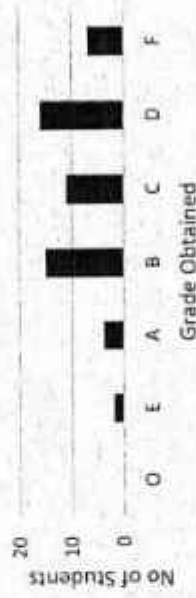
R. Patra 23/05/2023
23/05/2023
23/05/2023
Prof. Bagaria
Officer-in-Charge
Hooghly Engineering & Technology College
Wardanda Road, Puriptal
Hooghly, pin- 712103

R. Patra 23/05/23
H. O. D.
Basic Science & Humanities Department
H. E. T. C. Hooghly

Hooghly Engineering & Technology College	
Electronics and Communications Engineering	
Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-III (Probability & Statistics)
Course Code	BS-M301
Academic Year	2022-2023
Total No. of Students in the Course	57
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	0	2	4	15	11	16	7
Average Marks							5.70
Course Outcome Attainment							2

End Semester Assessment



R. Patra
 23/05/2023
 R. Patra
 23/05/2023
 H. O. D. Humanities Department
 Basic Science & Humanities Department
 H. E. T. C. Hooghly

Hooghly Engineering & Technology College

Computer Science and Engineering

Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-IIA
Course Code	BS-M201
Academic Year	2022-2023
Total No. of Students in the Course	91
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	1	3	6	7	15	17	41
Average Marks						4.30	
Course Outcome Attainment						1	

End Semester Assessment



R. Patra
 24/08/2023
R. Patra
 24/08/2023
 H. O. D. Humanities Department
 H.E.T.C. Hooghly.

Hooghly Engineering & Technology College

Electronics and Communications Engineering

Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-III (Probability & Statistics)
Course Code	BS-M301
Academic Year	2021-2022
Total No. of Students in the Course	44
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT

Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	3	32	8	1	0	0	0
Average Marks							8.80
Course Outcome Attainment							4

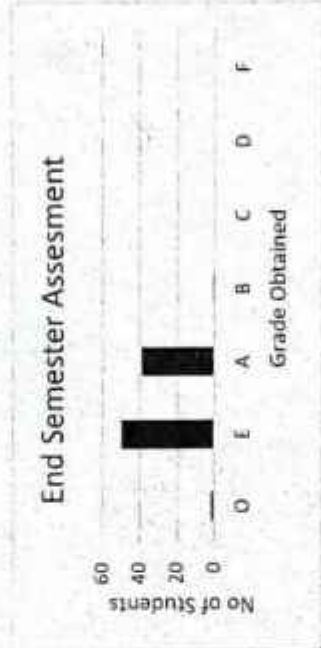
End Semester Assessment



G. Patra
 16/03/2022
Mukherjee
 16/03/2022
 H. O. D. Humanities Department
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.

Hooghly Engineering & Technology College	
Computer Science and Engineering	
Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-IIA
Course Code	BS-M201
Academic Year	2021-2022
Total No. of Students in the Course	92
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment I, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	2	50	39	1	0	0	0
Average Marks							8.60
Course Outcome Attainment							4



R. Patra
 09/09/2022
R. Patra
 09/09/2022
 H. E. T. C., Hooghly.
 Basic Science & Humanities Department
 Ft. O. D.

Hooghly Engineering & Technology College	
Electronics and Communications Engineering	
Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-III (Probability & Statistics)
Course Code	BS-M301
Academic Year	2020-2021
Total No. of Students in the Course	52
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	44	2	2	0	0	2	2
Average Marks							9.40
Course Outcome Attainment							4



R. Patra
 06/05/2021
 Mukherjee
 06/05/2021
 H.O.D.
 Basic Science & Humanities Department
 H.E.T.C., Hooghly.

Hooghly Engineering & Technology College	
Computer Science and Engineering	
Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-IIA
Course Code	BS-M201
Academic Year	2020-2021
Total No. of Students in the Course	75
Teaching Methodology	Lecture by Faculty , Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	73	2	0	0	0	0	0
Average Marks							10.00
Course Outcome Attainment							4

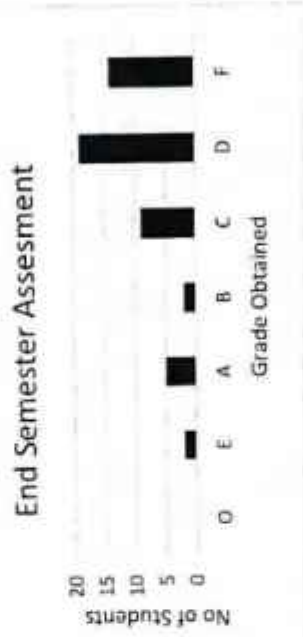
End Semester Assessment



R. Patra
 22/09/2021
 H.O.D.
 Mathematics Department
 Hooghly Engineering & Technology College
 H. E. T. C., Hooghly.

Hooghly Engineering & Technology College	
Electronics and Communications Engineering	
Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-III (Probability & Statistics)
Course Code	BS-M301
Academic Year	2019-2020
Total No. of Students in the Course	51
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	0	2	5	2	9	19	14
Average Marks							4.90
Course Outcome Attainment							I



R. Patra
 18/08/2020
 Shukunja
 H. O. D.
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.

Hooghly Engineering & Technology College

Computer Science and Engineering

Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-IIA
Course Code	BS-M201
Academic Year	2019-2020
Total No. of Students in the Course	63
Teaching Methodology	Lecture by Faculty , Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	53	8	0	2	0	0	0
Average Marks							9.80
Course Outcome Attainment							4

End Semester Assessment



Basic Science & Humanities Department
 H. E. T. C., Hooghly.

Mukherjee
 H. O. D.
 25/11/2020

R. Patra
 25/11/2020

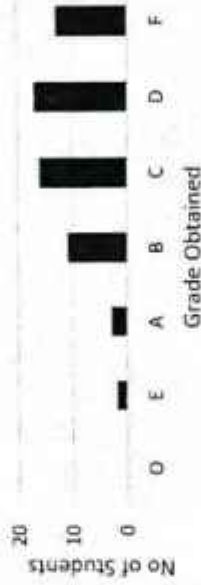
Hooghly Engineering & Technology College

Computer Science and Engineering

Name of Faculty	Dr. Rajesh Patra
Name of Course	Mathematics-IIA
Course Code	BS-M201
Academic Year	2018-2019
Total No. of Students in the Course	62
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	0	2	3	11	16	17	13
Average Marks							5.30
Course Outcome Attainment							I

End Semester Assessment



Mukherjee
 14/08/2019
 H.O.D.
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.

R. Patra
 14/08/2019

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Assignment & Sample Solutions

Mathematics-II A(BS-M201)

CSE 1st YEAR 2nd SEMESTER

1. When two dice thrown, find the probability that difference of the points on the die is 2 or 3?
2. A speaks truth in 75% and B in 80% of the cases. In what percentage of cases are they likely to contradict each other narrating the same incident?
a) 5% b) 45% c) 35% d) 15%
3. A bag contains 4 white and 2 black balls. Another bag contains 3 white and 5 black balls. If one ball is drawn from each bag, the probability that both white is
a) $1/24$ b) $1/4$ c) $5/24$ d) none
4. In a certain class 25% of the students failed in Mathematics, 15% failed in Chemistry, 10% failed in both Mathematics and Chemistry. A student is selected at random. What is the probability that
i) if he failed in Chemistry, he also failed in Mathematics?
ii) if he failed in Mathematics, he also failed in Chemistry?
iii) he failed both in Mathematics and Chemistry?
iv) he has failed at least one of these two subjects?
v) he has passed at least one of the two subjects?
vi) he has passed in Mathematics if he failed in Chemistry?
vii) he has passed in Chemistry if he failed in Mathematics?
5. If $u = 2x+5$ and $v = 3y - 5$ and the correlation coefficient between x and y is 0.75, then the correlation coefficient between u and v is
a) 0.86 b) 0.75 c) -0.75 d) none of these
6. If relation between two variables x and y and between other two variables u and v are $2x+3y = 7$ and $3u + 4v = 5$ respectively and correlation coefficient of x and u is 0.2, then correlation coefficient between y and v is
a) -0.2 b) -0.4 c) 0.2 d) none of these
7. The distribution of a random variable X is given by $P(X = -1) = \frac{1}{8}$, $P(X = 0) = \frac{3}{4}$, $P(X = 1) = \frac{1}{8}$. Verify Tchebycheff's inequality for the distribution.
8. If X_1, X_2, \dots, X_n are mutually independent normal $(0, \sigma)$ variates, then show that
$$\text{Var} \left(\frac{X_1^2 + X_2^2 + \dots + X_n^2}{n} \right) = \frac{2\sigma^4}{n}$$
9. If the moments of variate X are defined by $E(X^r) = 0.6$; $r = 1, 2, 3, \dots$
show that $P(X = 0) = 0.4$, $P(X = 1) = 0.6$, $P(X \geq 2) = 0$.
10. Find the moment generating functions of the following distributions and from it find their means and variance-
a) Binomial distribution
b) Poisson distribution
c) Normal distribution
d) Exponential distribution
e) Gamma distribution.



R. Patra
31/05/2022

Example 1. When two dice are thrown, find the probability that difference of the points on the die is 2 or 3?

► Solution :

When two dice are thrown together total number of possible results are $6 \times 6 = 36$.

Let A denotes the event that the difference of two results obtained is 2. This may happen in the following ways:

(1, 3), (2, 4), (3, 5), (4, 6), (6, 4), (5, 3), (4, 2), (3, 1).

So, total number of favourable cases = 8.

$$\text{So, } P(A) = \frac{8}{36} = \frac{2}{9}$$

Again let B denotes the event that the difference of the two results obtained is 3.

This may happen in the following ways:

(1, 4), (2, 5), (3, 6), (6, 3), (5, 2), (4, 1).

So, the number of favourable cases = 6.

$$\text{So, } P(B) = \frac{6}{36} = \frac{1}{6}$$

So, the required probability is

$$P(A \cup B) = P(A) + P(B) \text{ (Since } A \text{ and } B \text{ are mutually exclusive)}$$

$$= \frac{2}{9} + \frac{1}{6}$$

$$= \frac{4+3}{18} = \frac{7}{18}$$

Example 2. A speaks truth in 75% and B in 80% of the cases. In what percentage of cases are they likely to contradict each other narrating the same incident?

a) 5% b) 45% c) 35% d) 15%



Solⁿ Let E = event that A speaks the truth
 F = event that B speaks the truth

$\therefore P$ (A and B contradict each other)

= P [(A speaks truth and B tells a lie)
 or (A tells a lie and B speaks the truth)]

$$= P(E\bar{F}) + P(\bar{E}F)$$

$$= P(E)P(\bar{F}) + P(\bar{E})P(F) \quad \left[\begin{array}{l} \text{Since } E \text{ and } F \text{ are} \\ \text{independent so, } E, \bar{F} \\ \text{and } \bar{E}, F \text{ are independent} \end{array} \right]$$

$$= \frac{75}{100} \times \left(1 - \frac{80}{100}\right) + \left(1 - \frac{75}{100}\right) \times \frac{80}{100}$$

$$= (0.75 \times 0.2) + (0.25 \times 0.8) = 0.15 + 0.20 = 0.35$$

\therefore Required percentage = 35%.

Note The problem also will be solved by the

rule $P(E) + P(F) - 2P(EF)$

$$= P(E) + P(F) - 2P(E)P(F) \quad \text{Since } E \text{ and } F \text{ are independent}$$

$$= 0.75 + 0.80 - 2 \times 0.75 \times 0.80$$

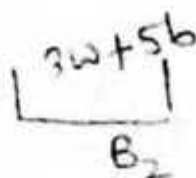
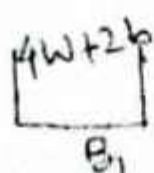
$$= 0.35$$

Required percentage = 35%

Example 3. A bag contains 4 white and 2 black balls.
 Another bag contains 3 white and 5 black balls.
 If one ball is drawn from each bag, the
 probability that both are white is

a) $\frac{1}{4}$ b) $\frac{1}{4}$ c) $\frac{5}{24}$ d) none.



Solⁿ:

Let B_1 and B_2 pertain to the first and second bag chosen and

A_1 : event of choosing 1 white ball from bag B_1

A_2 : event of choosing 1 white ball from bag B_2

The probability that selecting one bag
 $= P(B_1) = P(B_2) = \frac{1}{2}$

Let A represents the event for A_1 and A_2 i.e. two balls are white each from each bags.

\therefore Required probability

$$\begin{aligned} P(A) &= P(B_1)P(A_1|B_1) + P(B_2)P(A_2|B_2) \\ &= \frac{1}{2} \times \frac{4C_1}{6C_1} + \frac{1}{2} \times \frac{3C_1}{8C_1} \quad [\text{by Baye's Theorem}] \\ &= \frac{1}{2} \times \frac{4}{6} + \frac{1}{2} \times \frac{3}{8} = \frac{1}{3} + \frac{3}{16} = \frac{16+9}{48} = \frac{25}{48} \end{aligned}$$

Note: The probability that exactly one of the events A and B occurs is $P(A) + P(B) - 2P(AB)$.

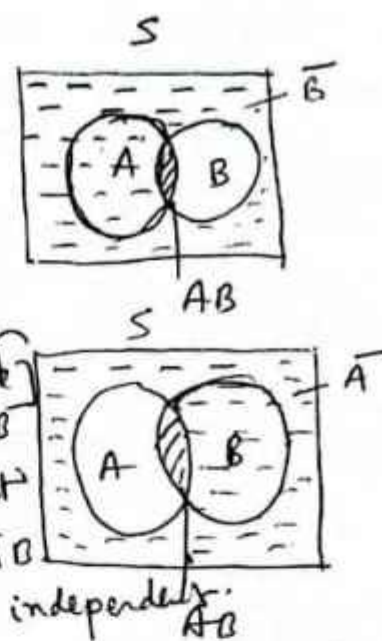
Proof: The required probability

$= P$ [(when A occurs B can not occur) +

(when A does not occur but B occurs)]



$$\begin{aligned}
 &= P[A\bar{B} + \bar{A}B] \\
 &= P(\bar{A}\bar{B}) \\
 &= P(A\bar{B}) + P(\bar{A}B) \quad \left[\begin{array}{l} \text{Since } A\bar{B} \text{ and } \bar{A}B \\ \text{are mutually} \\ \text{exclusive} \end{array} \right] \\
 &= P[(A-AB)] + P[(B-AB)] \\
 &= P(A) - P(AB) + P(B) - P(AB) \\
 &= P(A) + P(B) - 2P(AB) \quad \left[\begin{array}{l} \because AB \text{ is a} \\ \text{subset of } A \text{ and } B \\ \text{and } \bar{A}\bar{B} \text{ and } \bar{A}B \\ \text{are also independent.} \end{array} \right]
 \end{aligned}$$



- Not
K11
- 1) If A came from 1st bag, then required probability
 $= P(B_1|A) = \frac{P(B_1)P(A|B_1)}{P(A)}$, $P(A|B_1) = \frac{{}^4C_2 \times {}^2C_0}{6C_2}$
- 2) If A came from 2nd bag, then required probability
 $= P(B_2|A) = \frac{P(B_2)P(A|B_2)}{P(A)}$, $P(A|B_2) = \frac{{}^3C_2 \times {}^5C_0}{8C_2}$
- 3) If A came either from bag B_1 or B_2 , then required probability
 $P[(B_1|A) + (B_2|A)] = P(B_1|A) + P(B_2|A)$
 since they are exclusive.

Example 4. In a certain class 25% of the students failed in Mathematics, 15% failed in Chemistry, 10% failed in both Mathematics and Chemistry. A student is selected at random. What is the probability that

- (i) if he failed in Chemistry, he also failed in Mathematics?
- (ii) if he failed in Mathematics, he also failed in Chemistry?
- (iii) he failed both in Mathematics and Chemistry?
- (iv) he has failed at least one of these two subjects?
- (v) he has passed at least one of the two subjects?
- (vi) he has passed in Mathematics if he failed in Chemistry?
- (vii) he has passed in Chemistry if he failed in Mathematics?



► **Solution :**

Let, A denotes the event that the selected student has failed in Mathematics;
 B denotes the event that the selected student has failed in Chemistry.

$$\text{So, } P(A) = 0.25, P(\bar{A}) = 0.75,$$

$$P(B) = 0.15, P(\bar{B}) = 0.85.$$

Also it is given

$$P(AB) = 0.10.$$

(i) The probability that if he failed in Chemistry if he failed in Mathematics

$$= P\left(\frac{A}{B}\right) = \frac{P(AB)}{P(B)} = \frac{0.10}{0.15} = \frac{10}{15} = \frac{2}{3}.$$

(ii) In a similar way, the required probability

$$= P\left(\frac{B}{A}\right) = \frac{P(AB)}{P(A)} = \frac{0.10}{0.25} = \frac{10}{25} = \frac{2}{5}.$$

(iii) The required probability

$$= P(AB) = 0.10 = \frac{1}{10}.$$

(iv) The probability that the student has failed at least one of these two subjects

$$= P(A + B)$$

$$= P(A) + P(B) - P(AB)$$

$$= 0.25 + 0.15 - 0.10 = 0.30 = \frac{3}{10}.$$

(v) The probability that the student has passed at least one of the two subjects

$$= P(\bar{A} + \bar{B}) = 1 - P(AB) = 1 - \frac{1}{10} = \frac{9}{10}.$$

(vi) The probability that the student has passed in Mathematics if he failed in Chemistry

$$= P\left(\frac{\bar{A}}{B}\right) = 1 - P\left(\frac{A}{B}\right)$$

$$= 1 - \frac{P(AB)}{P(B)} = 1 - \frac{0.10}{0.15} = 1 - \frac{2}{3} = \frac{1}{3}.$$

(vii) The probability that the student has passed in Chemistry if he failed in Mathematics

$$= P\left(\frac{\bar{B}}{A}\right) = 1 - P\left(\frac{B}{A}\right)$$

$$= 1 - \frac{P(AB)}{P(A)}$$

$$= 1 - \frac{0.10}{0.25} = 1 - \frac{2}{5} = \frac{3}{5}.$$



Example 5 If $u = 2x + 5$ and $v = 3y - 5$ and the correlation coefficient between x and y is 0.75, then the correlation coefficient between u and v is

- a) 0.86 b) 0.75 c) -0.75 d) none of these.

Ans: $r_{xy} = 0.75$ $r_{uv} = \frac{\text{Cov}(u, v)}{\sigma_u \cdot \sigma_v}$

\therefore ~~error~~

$$\left. \begin{aligned} \sigma_u^2 &= \text{Var}(u) \\ &= \text{Var}(2x+5) \\ &= 2^2 \text{Var}(x) \\ &= 4\sigma_x^2 \end{aligned} \right\} \begin{aligned} \sigma_v^2 &= \text{Var}(v) \\ &= \text{Var}(3y-5) \\ &= 3^2 \text{Var}(y) \\ &= 9\sigma_y^2 \end{aligned}$$

$$\begin{aligned} \text{Cov}(u, v) &= \frac{1}{n} \sum_{i=1}^n (u_i - \bar{u})(v_i - \bar{v}) \\ &= \frac{1}{n} \sum_{i=1}^n [(2x_i + 5) - (2\bar{x} + 5)] \cdot [(3y_i - 5) - (3\bar{y} - 5)] \\ &= \frac{1}{n} \sum_{i=1}^n 2(x_i - \bar{x}) \times 3(y_i - \bar{y}) \\ &= 6 \cdot \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y}) \\ &= 6 \cdot \text{Cov}(x, y) \end{aligned}$$

$$\begin{aligned} r_{xy} &= 0.75 \\ \Rightarrow \frac{\text{Cov}(x, y)}{\sigma_x \sigma_y} &= 0.75 \\ \Rightarrow \frac{\text{Cov}(u, v)}{6 \sigma_x \sigma_y} &= 0.75 \\ \Rightarrow \text{Cov}(u, v) &= (6 \times 0.75) \sigma_x \sigma_y \end{aligned}$$

$$\begin{aligned} \therefore r_{uv} &= \frac{\text{Cov}(u, v)}{\sigma_u \cdot \sigma_v} \\ &= \frac{(6 \times 0.75) \sigma_x \sigma_y}{2\sigma_x \times 3\sigma_y} \\ &= \frac{6 \times 0.75}{6} \\ &= 0.75 \end{aligned}$$



Example 6. If relation between two variables x and y and between other two variables u and v are $2x + 3y = 7$ and $3u + 4v = 5$ respectively, and correlation coefficient of x and u is 0.2 , then correlation coefficient of y and v is

- a) -0.2 b) -0.4 c) 0.2 d) none of these.

Ans: $r_{xu} = 0.2$
 $\Rightarrow \frac{\text{Cov}(x, u)}{\sigma_x \cdot \sigma_u} = 0.2$

$$\begin{aligned} \text{Cov}(y, u) &= \frac{1}{n} \sum_{i=1}^n (y_i - \bar{y})(u_i - \bar{u}) \\ &= \frac{1}{n} \sum_{i=1}^n \left[\frac{1}{3}(7 - 2x_i) - \frac{1}{3}(7 - 2\bar{x}) \right] \\ &\quad \times \left[\frac{1}{4}(5 - 3u_i) - \frac{1}{4}(5 - 3\bar{u}) \right] \end{aligned}$$

$$\begin{aligned} \sigma_y^2 &= \text{Var}(y) \\ &= \text{Var}\left[\frac{1}{3}(7 - 2x)\right] \\ &= \text{Var}\left[-\frac{2}{3}x + \frac{7}{3}\right] \\ &= \left(-\frac{2}{3}\right)^2 \text{Var}(x) \\ &= \frac{4}{9} \sigma_x^2 \end{aligned}$$

$$\begin{aligned} &= \frac{1}{3 \times 4} \cdot \frac{1}{n} \sum_{i=1}^n -2(x_i - \bar{x}) \times -3(u_i - \bar{u}) \\ &= \frac{1}{2} \cdot \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(u_i - \bar{u}) \\ &= \frac{1}{2} \text{Cov}(x, u) \\ &= \frac{1}{2} \times 0.2 \sigma_x \cdot \sigma_u \\ &= 0.1 \times \sigma_x \cdot \sigma_u \end{aligned}$$

$$\begin{aligned} \sigma_v^2 &= \text{Var}(v) \\ &= \text{Var}\left[\frac{1}{4}(5 - 3u)\right] \\ &= \text{Var}\left[-\frac{3}{4}u + \frac{5}{4}\right] \\ &= \left(-\frac{3}{4}\right)^2 \text{Var}(u) \\ &= \frac{9}{16} \sigma_u^2 \end{aligned}$$

$$\begin{aligned} \therefore r_{yv} &= \frac{\text{Cov}(y, v)}{\sigma_y \cdot \sigma_v} \\ &= \frac{0.1 \times \sigma_x \cdot \sigma_u}{\frac{2}{3} \sigma_x \cdot \frac{3}{4} \sigma_u} \\ &= 0.1 \times 2 \\ &= 0.2 \end{aligned}$$



R. Patra
31/05/2022

Course Title: Mathematics-IIA
Code: BS-M201
Computer Science And Engineering
2nd Semester



Dr. Rajesh Patra
Associate Professor & Head
Department of Basic Science And Humanities
Hooghly Engineering & Technology College

R. Patra
13/05/23

Course Title: Mathematics-IIA
Code: BS-M201

1	Basic Probability: Probability spaces, conditional probability, independence; Discrete random variables, Independent random variables, the Multinomial distribution, Poisson approximation to the Binomial distribution, infinite sequences of Bernoulli trials, sums of independent random variables; Expectation of Discrete Random Variables, Moments, Variance of a sum, Correlation coefficient, Chebyshev's Inequality.
2	Continuous Probability Distributions: Continuous random variables and their properties, Distribution functions and densities, Normal, Exponential and Gamma densities.
3	Bivariate Distributions: Bivariate distributions and their properties, distribution of sums and quotients, Conditional densities, Bayes' rule.
4	Basic Statistics: Measures of Central tendency, Moments, Skewness and Kurtosis, Probability distributions: Binomial, Poisson and Normal and evaluation of statistical parameters for these three distributions, Correlation and regression – Rank correlation.



Syllabus

Code: BS-M201

5	<p>Applied Statistics:</p> <p>Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves. Test of significance: Large sample test for single proportion, difference of proportions, single mean, difference of means, and difference of standard deviations.</p>
6	<p>Small samples:</p> <p>Test for single mean, difference of means and correlation coefficients, test for ratio of variances - Chi-square test for goodness of fit and independence of attributes.</p>



Reference Books

Code: BS-M201

1. **Fundamentals of Mathematical Statistics----- S.C. Gupta and V.K.Kapoor**
2. **Mathematical Probability-----Banerjee, De, Sen**
3. **Fundamental of Statistics(Vol I)----Gun, Gupta, Dasgupta**
4. **Statistical Methods(Vol. I)-----N.G.Das**
5. **Engineering Mathematics----B.K.Pal and K.Das**
6. **Higher Algebra(Linear and Abstract)-----S.K. Mapa**



Probability

The following terminology are required to study the mathematics of probability:-

1. Synonyms:- Likelihood, chance, prospect, odds, possibility, proportion, probability.
2. Experiment:- is a process that when performed results in one and only one of many observations.
3. Outcomes: are the observations of the experiment.



4. Random experiment: An experiment whose all possible outcomes are known in advance but the outcome of any specific performance can not be predicted with certainty before the completion of the experiment, is called a random experiment.

For example:

- i) tossing of a coin
- ii) throwing of a dice
- iii) drawing of a card from a pack of 52 cards etc

are examples of random experiment.



5. Sample space: The set of all possible outcomes of random experiment is called a sample space of that experiment and is generally denoted by S .
An element of the sample space S , is called a sample point.

For example:

- i) When a dice is thrown then its sample space $S = \{1, 2, 3, 4, 5, 6\}$ and when
- ii) a coin is tossed twice at a time, then its sample space $S = \{HH, HT, TH, TT\}$.

Note 1 For a dice thrown, $\{1\}, \{2\}, \dots, \{6\}$ and for the coin tossing twice, $\{HH\}, \{HT\}, \{TH\}, \{TT\}$ are the sample points of that experiment.



Note 2. i) The total no. of sample points for throwing n dice, is 6^n and
ii) for tossing one coin n times, the total no. of sample points is 2^n .

R. Patra
13/05/23.

PROBABILITY AND STATISTICS :
The Science of Uncertainty

Dr. Rajesh Patra

M.Sc.(University Of Kalyani, West Bengal, India)

Ph.D.(University Of Calcutta, West Bengal, India)

Assistant Professor,

Department Of Mathematics,

Hooghly Engineering & Technology College

2022



R. Patra
05/11/2022

References

- [1] S . K . Mapa. *Higher Algebra - Abstract And Linear*. Sarat Book Distributors, 18-B, Shyama Charan De Street, Kolkata-700073 (2005).
- [2] S.C. Gupta and V.K. Kapoor. *Fundamentals Of Mathematical Statistics (A Modern Approach)*. Sultan Chand & Sons, 23, Darya Ganj, New Delhi-110002 (2002).
- [3] Sheldon Ross. *A First Course In Probability*. Pearson Prentice Hall, Upper Saddle River, NJ 07458 (2010).
- [4] Michael J. Evans and Jeffrey S. Rosenthal. *Probability and Statistics : The Science of Uncertainty*. W. H. Freeman, Toronto (2010).
- [5] A.P. Baisnab and Manoranjan Jas. *Elements of Probability and Statistics*. Tata McGraw-Hill Publishing Company Limited, 7 West Patel Nagar, New Delhi-110008 (1993).
- [6] A. Banerjee, S.K. De, and S.Sen. *Mathematical Probability*. U. N. Dhar & Sons Private Limited, 15, Bankim Chatterjee Street, Kolkata-700073 (2002).
- [7] B. K. Pal and K. Das. *Engineering Mathematics [Volume-III A]*. U. N. Dhar & Sons Private Limited, 2A, Bhawani Dutta Lane, Kolkata-700073 (2019).
- [8] Amritava Gupta. *Ground Work of Mathematical Probability And Statistics*. Academic Publishers, 12/1A Bankim Chatterjee Street, Calcutta-700073 (1999).
- [9] Dr. Arup Kumar Mukherjee and Dr. Naba Kumar Bej. *A Ground Book on Engineering Mathematics*. Shreedhar Prakashani, 203/4D Bidhan Sarani, Kolkata-700006 (2020).
- [10] Sourav Kar and Subrata Karmakar. *Engineering Mathematics - III*. McGraw Hill Education (India) Private Limited, P-24, Green Park Extension, New Delhi-110016 (2015).
- [11] Dr. Debaprasanna Biswas. *Probability And Statistics [Volume I]*. New Central Book Agency (P) Ltd, 8/1 Chintamani Das Lane, Kolkata-700009 (2006).
- [12] Bikas Chandra Bhui and Dipak Chatterjee. *Mathematics-II Probability And Statistics*. Vikas Publishing House Pvt Ltd, E-28, Sector-8. Noida-201301 (UP) (2019).



Correlation and Regression

Bivariate Data:

Let x, Y be two random variables. Then the pair (x, Y) is called a bivariate data.

For example:

Let x_i represents height and y_i weight of a collection of students. Then such data (x_i, y_i) for $i = 1, 2, \dots, n$ is called a bivariate data.

Notes) This data (x_i, y_i) is also represent in a tabular form.

x_i	y_i	x_1	x_2	...	x_n
y_i	x_i	y_1	y_2	...	y_n

Correlation: If there is a change in one variable, say x_i , in (x_i, y_i) , corresponds to the change in the other variable, i.e., y_i , then we say that the variables x_i and y_i are correlated.

There are three types of correlation:-

1) Positive correlation: - Due to increase of any one of the two data, the other data also increases.

For example, height and weight of a man are positively correlated.

2) Negative correlation: - Due to increase of any one of the two, the other decreases.

For example, the price and demand of a commodity are negatively correlated. When the price increases, the demand generally goes down.

3) Zero correlation: - Due to change of any one of the two does not affect the change to other.

For example:- quality like affection, kindness are non-correlated with the academic achievements.



Covariance: - For a n pair of bivariate data $(x_i, y_i), i=1, 2, \dots, n$, the covariance between the variates x and y is denoted by $Cov(x, y)$ and is defined as

$$Cov(x, y) = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})$$

where

$\bar{x} = \frac{1}{n}(x_1 + x_2 + \dots + x_n) = \frac{1}{n} \sum_{i=1}^n x_i$, the arithmetic mean of the value assumed by x

and $\bar{y} = \frac{1}{n}(y_1 + y_2 + \dots + y_n) = \frac{1}{n} \sum_{i=1}^n y_i$, the arithmetic mean of the value assumed by y

Working formula for Covariance:

$$Cov(x, y) = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})$$

$$= \frac{1}{n} \sum_{i=1}^n (x_i y_i - x_i \bar{y} - \bar{x} y_i + \bar{x} \bar{y})$$

$$= \frac{1}{n} \sum_{i=1}^n x_i y_i - \bar{y} \cdot \frac{1}{n} \sum_{i=1}^n x_i - \bar{x} \cdot \frac{1}{n} \sum_{i=1}^n y_i + \frac{1}{n} \sum_{i=1}^n \bar{x} \bar{y}$$

$$= \frac{1}{n} \sum_{i=1}^n x_i y_i - \bar{x} \bar{y} - \bar{x} \bar{y} + \frac{1}{n} \cdot n \bar{x} \bar{y}$$

$$= \frac{1}{n} \sum_{i=1}^n x_i y_i - \bar{x} \bar{y}$$

$$= \frac{1}{n} \sum_{i=1}^n x_i y_i - \left(\frac{1}{n} \sum_{i=1}^n x_i \right) \left(\frac{1}{n} \sum_{i=1}^n y_i \right)$$

$$= E(XY) - E(X)E(Y)$$

Note: Here \bar{x} , \bar{y} are the arithmetic means or statistical constants

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

$$\bar{y} = \frac{1}{n} \sum_{i=1}^n y_i$$

Note: You know the words mean, average and expectation are the same

$$\therefore Cov(x, y) = E(XY) - E(X)E(Y)$$

Correlation coefficient

Defn Correlation coefficient between the variate x and y is denoted by r_{xy} or ρ_{xy} or simply by ρ and is defined by

$$r_{xy} = \frac{Cov(x, y)}{\sigma_x \sigma_y}$$

where $Cov(x, y)$ is the covariance of x and y and σ_x, σ_y are the standard deviations of x and y respectively.



Some properties of correlation coefficient:-

1. The coefficient of correlation lies between -1 and +1.

Proof: let $u_i = \frac{x_i - \bar{x}}{\sigma_x}$ and $v_i = \frac{y_i - \bar{y}}{\sigma_y}$ for $i=1, 2, \dots, n$

$$\therefore \sum_{i=1}^n u_i^2 = \frac{1}{\sigma_x^2} \sum_{i=1}^n (x_i - \bar{x})^2$$

$$= \frac{1}{\sigma_x^2} \cdot n \sigma_x^2 = n$$

Note: $\sigma_x^2 = \text{Var}(x)$
 $= E[(x_i - \bar{x})^2]$
 $= \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2$
 $\Rightarrow \sum_{i=1}^n (x_i - \bar{x})^2 = n \cdot \sigma_x^2$

and $\sum_{i=1}^n v_i^2 = \frac{1}{\sigma_y^2} \sum_{i=1}^n (y_i - \bar{y})^2$
 $= \frac{1}{\sigma_y^2} \cdot n \sigma_y^2 = n$

Again, $\sum_{i=1}^n u_i v_i = \frac{1}{\sigma_x \sigma_y} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})$
 $= \frac{1}{\sigma_x \sigma_y} \cdot n \text{Cov}(x, y)$
 $= n \cdot r_{xy}$

$\therefore \text{Cov}(x, y) = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})$

$r_{xy} = \frac{\text{Cov}(x, y)}{\sigma_x \sigma_y}$

Now, $\sum_{i=1}^n (u_i + v_i)^2 \geq 0$

[since $(a+b)^2 \geq 0$ and $(a-b)^2 \geq 0$ always, and $(a+b)^2 = 0$ when $a=b=0$]
 for first case

$\Rightarrow \sum_{i=1}^n (u_i^2 + v_i^2 + 2u_i v_i) \geq 0$

$\Rightarrow \sum_{i=1}^n u_i^2 + \sum_{i=1}^n v_i^2 + 2 \sum_{i=1}^n u_i v_i \geq 0$

$\Rightarrow n + n + 2n r_{xy} \geq 0$

$\Rightarrow 1 + r_{xy} \geq 0$ [since $n \neq 0$]

$\Rightarrow r_{xy} \geq -1$ — (1)

Again, $\sum_{i=1}^n (u_i - v_i)^2 \geq 0$
 $\Rightarrow \sum_{i=1}^n u_i^2 + \sum_{i=1}^n v_i^2 - 2 \sum_{i=1}^n u_i v_i \geq 0$

$\Rightarrow n + n - 2n r_{xy} \geq 0$

$\Rightarrow 1 - r_{xy} \geq 0$ [since $n \neq 0$]

$\Rightarrow r_{xy} \leq 1$ — (2)

Combining (1) and (2) we get $-1 \leq r_{xy} \leq 1$. (proved)



2. If $(x_i, y_i), i=1, 2, \dots, n$ lies on a straight line $y=mx+c$, then $r_{xy} = \pm 1$,

Proof: Since (x_i, y_i) for $i=1, 2, \dots, n$ lie on $y=mx+c$, then

$$y_i = mx_i + c \text{ for } i=1, 2, \dots, n. \rightarrow (1)$$

$\therefore \bar{y} = m\bar{x} + c$, where \bar{x} and \bar{y} are given by

$\therefore (1) - (2)$ we get

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i \text{ and } \bar{y} = \frac{1}{n} \sum_{i=1}^n y_i$$

$$y_i - \bar{y} = m(x_i - \bar{x}) + c - c \rightarrow (3)$$

$$\therefore \text{Cov}(x, y) = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})$$

$$= \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x}) m (x_i - \bar{x}) \quad [\text{Since in (3)}]$$

$$= m \cdot \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2 \quad [\because m \text{ is a constant term}]$$

$$= m \cdot \sigma_x^2$$

$$[\text{Note: } \text{Var}(x) = \sigma_x^2 = E[(x_i - \bar{x})^2] = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2]$$

and from (4) we get

$$\sigma_y = |m| \sigma_x \quad [\because \sigma_x > 0 \text{ always}]$$

$$\text{And } \sigma_y^2 = \text{Var}(y)$$

$$= E[(y_i - \bar{y})^2]$$

$$= \frac{1}{n} \sum_{i=1}^n (y_i - \bar{y})^2$$

$$= \frac{1}{n} \sum_{i=1}^n m^2 (x_i - \bar{x})^2$$

$$= m^2 \cdot \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2$$

$$\therefore r_{xy} = \frac{\text{Cov}(x, y)}{\sigma_x \cdot \sigma_y} = \frac{m \cdot \sigma_x^2}{|m| \sigma_x^2}$$

$$= \frac{m}{|m|}$$

$$\text{So, for } m > 0, r_{xy} = \frac{m}{m} = +1$$

$$\text{and for } m < 0, r_{xy} = \frac{m}{-m} = -1$$

$\therefore \boxed{r_{xy} = \pm 1}$ proved.

$\therefore r = \pm 1$ (proved)



Example: If (x, y) represents bi-variate data then $x+y$ and $x-y$ are two variables variates. Then

$$\text{Var}(x+y) = \sigma_x^2 + \sigma_y^2 + 2\sigma_x\sigma_y r_{xy},$$

$$\text{Var}(x-y) = \sigma_x^2 + \sigma_y^2 - 2\sigma_x\sigma_y r_{xy}$$

where σ stands for standard deviation and r_{xy} stands for correlation coefficients.

Proof: $\text{Var}(x+y) = \frac{1}{n} \sum_{i=1}^n \{(x_i + y_i) - (\overline{x+y})\}^2$ [Here bar represents arithmetic mean]

$$= \frac{1}{n} \sum_{i=1}^n \{x_i + y_i - \bar{x} - \bar{y}\}^2 \quad [\because \overline{x+y} = \bar{x} + \bar{y}]$$

$$= \frac{1}{n} \sum_{i=1}^n \{(x_i - \bar{x}) + (y_i - \bar{y})\}^2$$

$$= \frac{1}{n} \sum_{i=1}^n \{(x_i - \bar{x})^2 + (y_i - \bar{y})^2 + 2(x_i - \bar{x})(y_i - \bar{y})\}$$

$$= \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2 + \frac{1}{n} \sum_{i=1}^n (y_i - \bar{y})^2 + 2 \cdot \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})$$

$$= \text{Var}(x) + \text{Var}(y) + 2 \text{Cov}(x, y)$$

$$= \sigma_x^2 + \sigma_y^2 + 2 \frac{\text{Cov}(x, y)}{\sigma_x \cdot \sigma_y} \cdot \sigma_x \cdot \sigma_y$$

$$= \sigma_x^2 + \sigma_y^2 + 2\sigma_x\sigma_y r_{xy} \quad [\because r_{xy} = \frac{\text{Cov}(x, y)}{\sigma_x \sigma_y}]$$

Proof of the second part is similar.

Note 1) If the two variates x and y are uncorrelated then $r_{xy} = 0$ and hence

$$\text{Var}(x+y) = \sigma_x^2 + \sigma_y^2 = \text{Var}(x-y)$$

Note 2) $\text{Var}(x+y) = \sigma_x^2 + \sigma_y^2 + 2 \text{Cov}(x, y)$

$$\text{Var}(x-y) = \sigma_x^2 + \sigma_y^2 - 2 \text{Cov}(x, y)$$

Example: If $\text{Var}(x) = 9$, $\text{Var}(y) = 4$ and $\text{Var}(x-y) = \text{Var}(x)$, find the correlation coefficient between x and y .

Solⁿ We know that, $\text{Var}(x-y) = \sigma_x^2 + \sigma_y^2 - 2 \text{Cov}(x, y)$

$$\Rightarrow \sigma_x^2 = \sigma_x^2 + \sigma_y^2 - 2 \text{Cov}(x, y)$$

$$\Rightarrow \text{Cov}(x, y) = \frac{\sigma_y^2}{2} = \frac{4}{2} = 2$$

$$\text{Now, } r_{xy} = \frac{\text{Cov}(x, y)}{\sigma_x \cdot \sigma_y} = \frac{2}{3 \times 2} = \frac{1}{3}$$

R. Patra
05/11/2022



HOOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Assessment (CA3), March, 2023

DEPARTMENT : CSE

Subject: Mathematics – II A
Year: Ist
Time: 1 Hr

Code: BS-M201
Sem: 2nd
Full Marks: 25

Group-A (Answer any five)

1 × 5 = 5

I. Choose the correct answer:

a) Maximum value of the probability is:

(I) 0

(II) 1

(III) 2

(IV) infinity

CO-1
Understand

b) The probability of getting even face in throwing a die is

(I) $\frac{1}{3}$

(II) $\frac{1}{2}$

(III) $\frac{2}{3}$

(IV) $\frac{1}{6}$

CO-1
Evaluate

c) A fair coin is tossed three times. The probability of getting exactly three heads will be

(I) $\frac{5}{8}$

(II) $\frac{1}{8}$

(III) $\frac{3}{8}$

(IV) None of this

CO-1
Apply

d) If A_1 and A_2 be two mutually exclusive events, then $P(A_1 + A_2)$ is equal to

(I) $P(A_1) + P(A_2) - P(A_1A_2)$

(II) $P(A_1)P(A_2)$

(III) $P(A_1) + P(A_2)$

(IV) $P(A_1) - P(A_2)$

CO-1
Understand

e) If for two events A and B, $P(A|B) = 0$, then the events A and B are

(I) Complementary to each other

(II) Independent events

(III) Mutually exclusive events

(IV) None of these

CO-1
Apply

f) If A and B are two independent events and if $P(\bar{A}) = \frac{2}{5}$, $P(\bar{B}) = \frac{1}{5}$, then $P(A + B) =$

(I) $\frac{13}{25}$

(II) $\frac{23}{25}$

(III) $\frac{17}{25}$

(IV) $\frac{6}{25}$

CO-1
Evaluate

g) If X, Y are two events with $P(X) = \frac{5}{6}$, $P(Y) = \frac{2}{3}$, and $P(XY) = \frac{1}{4}$, then $P(X\bar{Y}) =$

(I) $\frac{5}{12}$

(II) $\frac{7}{12}$

(III) $\frac{1}{12}$

(IV) $\frac{11}{12}$

CO-1
Evaluate



Group-B (Answer any four)

5 × 4 = 20

2. A purse contains 2 silver and 4 copper coins and a second purse contains 4 silver and 4 copper coins. CO-1
Analyze
If a coin is selected at random from one of the two purses, what is the probability that it is a silver coin?

3. Find the chance that a leap year, selected at random, will contain 53 Saturdays or Sundays? CO-1
Apply

4. State and prove Baye's Theorem. CO-1
Apply.

5. If A and B are independent events, then show that the following pairs are independent: CO-1.
Analyze.
(i) \bar{A} and \bar{B} (ii) A and \bar{B} (iii) \bar{A} and B

6. From an urn containing 5 white and 5 black balls, 5 balls are transferred at random into an empty second urn from which one ball is drawn and it is found to be white. What is the probability that all balls transferred from the first urn are white? CO-1
Evaluate.

7. The distribution function $F(x)$ of a variate X is defined as follows CO-1.
Understand,
Evaluate.

$$F(x) = A, -\infty < x < -1$$

$$= B, -1 \leq x < 0$$

$$= C, 0 \leq x < 2$$

$$= D, 2 \leq x < \infty$$

where A, B, C, D are constants. Determine the values of A, B, C, D, given that $P(X = 0) = \frac{1}{6}$
and $P(X > 1) = \frac{2}{3}$.



R. Patra
23/03/2023
Prof. Swagata Choudhury
23/3/23
Officer-in-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipupati
Hooghly, Pin- 712103

Hooghly Engineering & Technology College

DEPARTMENT: COMPUTER SCIENCE & ENGINEERING

FIRST YEAR (BATCH : 2022 - 2026) 2nd Sem. Mathematics-IIA(BS-M201)

SL NO	ROLL NO	CLASS ROLL	NAME	Report writing topics for CA-2 from Mathematics-IIA(BS-M201)
1	17600122001	1	SHASWATA BISWAS	Basic Terminology to Study the Mathematics of Probability
2	17600122002	2	SREEJEETA GHOSH	Set Theory on Probability
3	17600122003	3	DEBRAJ MONDAL	Some Types of Events in probability
4	17600122004	4	SINJAN RAY	Some basic Theorems on Probability
5	17600122005	5	DOITA SETH	Definition of Probability
6	17600122006	6	ANKITA DEBNATH	Concept of Conditional Probability and Independency of Events
7	17600122007	7	SATYAM DAS	Application of Baye's Theorem
8	17600122008	8	SUNANDA NANDI	Baye's Theorem, an Important Role in Probability Theory
9	17600122009	9	SOURAV SARKAR	Addition and Multiplication Rule in Probability of Two Events
10	17600122010	10	DEVIYOTI BANERJEE	Independency also holds for any pairs when the two events are independent
11	17600122011	11	SAYAN BAISHYA	Optimum values of Probability with Impossible and Certain Events
12	17600122012	12	DEBIYOTI NATH	Basic Terminology to Study the Mathematics of Probability
13	17600122013	13	SOUMI MAJI	Set Theory on Probability
14	17600122014	14	SOUMOJEET SARKAR	Some Types of Events in probability
15	17600122015	15	ANIK BISWAS	Some basic Theorems on Probability
16	17600122016	16	SOURAV SAHA	Definition of Probability
17	17600122017	17	DIANDRILA SARKAR	Concept of Conditional Probability and Independency of Events
18	17600122018	18	DISHA MUKHERJEE	Application of Baye's Theorem
19	17600122019	19	ABHRA BARAN KAR	Baye's Theorem, an Important Role in Probability Theory
20	17600122020	20	RUPAM KUNDU	Addition and Multiplication Rule in Probability of Two Events
21	17600122021	21	RISHAV BHAR	Independency also holds for any pairs when the two events are independent
22	17600122022	22	SOHAM KUNDU	Optimum values of Probability with Impossible and Certain Events
23	17600122023	23	ARGHYA CHOWDHURY	Basic Terminology to Study the Mathematics of Probability
24	17600122024	24	TARUN MASANTA	Set Theory on Probability
25	17600122025	25	AKASH VERMA	Some Types of Events in probability
26	17600122026	26	ANAND KUMAR	Some basic Theorems on Probability



Hooghly Engineering & Technology College

DEPARTMENT: COMPUTER SCIENCE & ENGINEERING

FIRST YEAR (BATCH : 2022 - 2026) 2nd Sem. Mathematics-IIA(BS-M201)

SL NO	ROLL NO	CLASS ROLL	NAME	Report writing topics for CA-2 from Mathematics-IIA(BS-M201)
27	17600122027	27	SAYAN DAS	Definition of Probability
28	17600122028	28	NABAJIT DAS	Concept of Conditional Probability and Independency of Events
29	17600122029	29	ANIRBAN SANTRA	Application of Baye's Theorem
30	17600122030	30	SOUMADEEP CHATTERJEE	Baye's Theorem, an Important Role in Probability Theory
31	17600122031	31	ADITYA KUMAR SINGH	Addition and Multiplication Rule in Probability of Two Events
32	17600122032	32	SUGNIK TARAFDER	Independency also holds for any pairs when the two events are independent
33	17600122033	33	DIPANKAR MANNA	Optimum values of Probability with Impossible and Certain Events
34	17600122034	34	BISHAL BHUIYIA	Basic Terminology to Study the Mathematics of Probability
35	17600122035	35	JEET KANGSABANIK	Set Theory on Probability
36	17600122036	36	ASHISH KUMAR SHARMA	Some Types of Events in probability
37	17600122037	37	ROHAN GAYEN	Some basic Theorems on Probability
38	17600122038	38	RUPKATHA ROY	Definition of Probability
39	17600122039	39	SAIKAT DAS	Concept of Conditional Probability and Independency of Events
40	17600122040	40	SOURODIP GHOSH	Application of Baye's Theorem
41	17600122041	41	SOUVIK MAITY	Baye's Theorem, an Important Role in Probability Theory
42	17600122042	42	SAKSHAR DAS	Addition and Multiplication Rule in Probability of Two Events
43	17600122043	43	ARYAK ROY	Independency also holds for any pairs when the two events are independent
44	17600122044	44	ABHIPSA KOLEY	Optimum values of Probability with Impossible and Certain Events
45	17600122045	45	ANANYA PAN	Basic Terminology to Study the Mathematics of Probability
46	17600122046	46	DEBIT MITRA	Set Theory on Probability
47	17600122047	47	SHOURJA CHATTERJEE	Some Types of Events in probability
48	17600122048	48	SK ANIK	Some basic Theorems on Probability
49	17600122049	49	MONAMI SARKAR	Definition of Probability
50	17600122050	50	MD SARFARAJ ALI	Concept of Conditional Probability and Independency of Events
51	17600122051	51	DEEPARGHYA GHOSH	Application of Baye's Theorem
52	17600122052	52	SAYAR PAUL	Baye's Theorem, an Important Role in Probability Theory
53	17600122053	53	AYONENDRA KARMAKAR	Addition and Multiplication Rule in Probability of Two Events
54	17600122054	54	MANALI GHOSH	Independency also holds for any pairs when the two events are independent
55	17600122055	55	BIPROJEET DEY	Optimum values of Probability with Impossible and Certain Events
56	17600122056	56	PRASANTA MONDAL	Basic Terminology to Study the Mathematics of Probability
57	17600122057	57	PRINCE KUMAR PRASAD	Set Theory on Probability
58	17600122058	58	SAMRAT GHOSH	Some Types of Events in probability
59	17600122059	59	AYUSH CHOUDHARY	Some basic Theorems on Probability
60	17600122060	60	TRAMBORNATH BHATTACHARYYA	Definition of Probability
61	17600122061	61	NAYAN DAS	Concept of Conditional Probability and Independency of Events
62	17600122062	62	SOHAM DE	Application of Baye's Theorem
63	17600122063	63	ANKIT PRAMANICK	Baye's Theorem, an Important Role in Probability Theory



22-23
2/NET

Hooghly Engineering & Technology College

DEPARTMENT: COMPUTER SCIENCE & ENGINEERING
FIRST YEAR (BATCH : 2022 - 2026) 2nd Sem. Mathematics-IIA(BS-M201)

SL NO	ROLL NO	CLASS ROLL	NAME	Report writing topics for CA-2 from Numerical Methods
64	17600122064	64	SOUMILI GHOSH	Definition of Probability
65	17600122065	65	ADITYA SHARMA	Concept of Conditional Probability and Independency of Events
66	17600122066	66	SK SHONJU ALI	Application of Baye's Theorem
67	17600122067	67	SOUVIK MAJHI	Baye's Theorem, an Important Role in Probability Theory
68	17600122068	68	SHOUVIK DUTTA BANIK	Addition and Multiplication Rule in Probability of Two Events
69	17600122069	69	MANIKA DUTTA	Independency also holds for any pairs when the two events are independent
70	17600122070	70	ARIFUR RAHMAN	Optimum values of Probability with Impossible and Certain Events
71	17600122071	71	AKASH PODDAR	Basic Terminology to Study the Mathematics of Probability
72	17600122072	72	PRANTO DUTTA	Set Theory on Probability
73	17600122073	73	SHIRSA ROY	Some Types of Events in probability
74	17600122074	74	RAJESH KUMAR DANGAR	Some basic Theorems on Probability
75	17600122075	75	PROBUDDHA ROY	Definition of Probability
76	17600122076	76	SAYAN GENRI	Concept of Conditional Probability and Independency of Events
77	17600122077	77	ANINDYA ROY	Application of Baye's Theorem
78	17600122078	78	AYAAN BOSE	Baye's Theorem, an Important Role in Probability Theory
79	17600122079	79	ACHINTYA MANDI	Addition and Multiplication Rule in Probability of Two Events
80	17600122080	80	TRISHAN NAYEK	Independency also holds for any pairs when the two events are independent
81	17600122081	81	AYUSHMAN PAL	Optimum values of Probability with Impossible and Certain Events
82	17600122082	82	ARKA PRATIM SAHA	Independency also holds for any pairs when the two events are independent
83	17600122083	83	RUPAYAN NATH	Optimum values of Probability with Impossible and Certain Events
84	17600122084	84	SPANDAN BANDYOPADHYAY	Basic Terminology to Study the Mathematics of Probability
85	17600122085	85	ARNAB GHORUI	Set Theory on Probability
86	17600122086	86	NILOY GHORUI	Some Types of Events in probability
87	17600122087	87	SUBHAM NATH	Some basic Theorems on Probability
88	17600122088	88	SOHONA MONDAL	Definition of Probability
89	17600122089	89	UTKARSH ABHISHEK	Concept of Conditional Probability and Independency of Events
90	17600122090	90	ARNAB PAUL	Application of Baye's Theorem
91	17600122091	91	PRITAM ROY	Baye's Theorem, an Important Role in Probability Theory
92	17600122092	92	DEBARPAN MUSTAFI	Addition and Multiplication Rule in Probability of Two Events
93	17600122093	93	MD AKIF SK	Independency also holds for any pairs when the two events are independent
94				
95				
96				
97				
98				
99				
100				
101				
102				



R. Patra
09/03/23

Prof. Saugata Choudhury
9/3/23
Officer-in-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpaty
Hooghly, Pin- 712103

3-0
22-21
odd

HOOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation (CA3), September, 2022

DEPARTMENT : ECE

Subject: Mathematics-III (Probability & Statistics)
Year: 2nd
Time: 1 Hr

Code: BS-M301
Sem: 3rd
Full Marks: 25

Group-A (Answer any five)

1 × 5 = 5

1. Choose the correct answer:

- a) Among the following distributions which may represent a Binomial Distribution:
(I) (9, 1.5) (II) (9.5, 0.5) (III) (9.5, 1.5) (IV) (9, 0.5)
- b) Among the following distributions which has same mean and variance:
(I) Binomial (II) Poisson (III) Normal (IV) None of these
- c) The mean and variance for the Standard Normal Distribution is
(I) (1, 0) (II) (0, 1) (III) (0, 0) (IV) (1, 1)
- d) If X has binomial distribution with parameter 4 and $\frac{1}{3}$, then $P(X = 1) =$
(I) $\frac{4}{3}$ (II) $\frac{16}{27}$ (III) $\frac{32}{81}$ (IV) $\frac{9}{16}$
- e) For a random variable X, $E[(X - 2)^2] = 6$, $E[(X - 1)^2] = 10$.
Then $\sigma_x =$
(I) $\sqrt{3}$ (II) $\sqrt{2}$ (III) 0 (IV) $\frac{\sqrt{15}}{2}$
- f) For a Poisson distribution $P(1) = P(2)$, then the standard deviation is as
(I) 0 (II) 2 (III) $\sqrt{2}$ (IV) 4
- g) If $3z - x = 5$ where z is a standard normal variate, then
(I) x is a normal variate with mean 5, s.d. 3 (II) x is a normal variate with mean 3, s.d. 5
(III) x is a normal variate with mean -5, s.d. 3 (IV) can not be said

CO-1.
Analyze

CO-1.
Understand

CO-4
Apply

CO-1
Evaluate

CO-4
Evaluate

CO-1.
Evaluate

CO-1
Analyze

Group-B (Answer any four from this group)

5 × 4 = 20

- 2. Find the mean and variance for the Binomial distribution.
- 3. The length of bolts produced by a machine is normally distributed with mean 4 and standard deviation 0.5. A bolt is defective if its length does not lie in the interval (3.8, 4.3). Find the percentage of defective bolts produced by the machine.

CO-4
Apply

CO-1
Apply

[Given, $\frac{1}{\sqrt{2\pi}} \int_{-x}^{0.6} e^{-t^2/2} dt = 0.7257$; $\frac{1}{\sqrt{2\pi}} \int_{-x}^{0.4} e^{-t^2/2} dt = 0.6554$]



4. If the mean of a binomial distribution is 3 and the variance is $\frac{3}{2}$, find the probability of obtaining atmost 3 success.

CO-1
Apply

5. A car - hire firm has two cars which it hires out day by day. The number of demands for a car on each day is distributed as a Poisson distribution with average number of demand per day 1.5.

Calculate the proportion of days on which neither car is used and the proportion of days on which some demand is refused. [given $e^{-1.5} = 0.2231$].

CO-1
Analyze

6. In a normal distribution , 31% of the items are under 45 and 8% are above 64. Find the mean and standard deviation . [Given $P(0 < Z < 1.405) = 0.42$, $P(-1.496 < Z < 0) = 0.19$].

CO-1
Analyze

7. In a certain factory turning razor blades, there is a small chance , $\frac{1}{500}$ for any blade to be defective. The blades are in packets of 10. Use Poisson distribution to calculate the approximate number of packets containing

- (i) no defective
- (ii) one defective
- (iii) two defective

CO-1
Evaluate

blades respectively in one consignment of 10,000 packets. [Given $e^{-0.02} = 0.9802$].

R.P. Patil
24/12/2022

Prof. Shivraj
24/12/22
Hogghly Engineering & Technology College
Vivekananda Road, Pipulpat
Hogghly, Pin- 712103

Hooghly Engineering & Technology College

DEPARTMENT: ELECTRONICS & COMMUNICATION ENGINEERING

SECOND YEAR (BATCH : 2021 - 2025) 3rd Sem. ECE Mathematics-III (BS-M301)

SL NO	ROLL NO	CLASS ROLL	NAME	Report Writing topics for CA-2 from Probability Theory
1	17600321001	1	ANUBHAB PALIT	Random Variables & Events described by Random Variables.
2	17600321002	2	Ishita Dutta	Distribution Function & the Important Theorem based on it.
3	17600321003	3	ARPAN BISWAS	Mean, Variance & Standard Deviation.
4	17600321004	4	Subhrajyoti Mandal	Binomial Distribution.
5	17600321005	5	SAMPURNA PAL	Poisson Distribution.
6	17600321006	6	SHOVA VARMA	Normal and Standard Normal Distribution.
7	17600321008	7	Anushka Roy	Exponential Distribution.
8	17600321009	8	Ayan Pal	Gamma Distribution.
9	17600321010	9	Amit Kumar Bakshi	Discrete & Continuous Distributions.
10	17600321011	10	TUHINA ADHIKARY	Random Variables & Events described by Random Variables.
11	17600321012	11	TUHIN TARAFDAR	Distribution Function & the Important Theorem based on it.
12	17600321013	12	Adrija Gupta	Mean, Variance & Standard Deviation.
13	17600321015	13	Shreya Mishra	Binomial Distribution.
14	17600321016	14	Akanksha Singh	Poisson Distribution.
15	17600321017	15	Shibam Mishra	Normal and Standard Normal Distribution.
16	17600321018	16	Shyamal Kumar Saboo	
17	17600321020	17	Abhrajit Saha	Exponential Distribution.
18	17600321021	18	DEBJANI ROY	Gamma Distribution.
19	17600321041	19	Sayan Adak	Discrete & Continuous Distributions.
20	17600321042	20	Suashil Pal	Random Variables & Events described by Random Variables.
21	17600321043	21	Eshita Dey	Distribution Function & the Important Theorem based on it.
22	17600321044	22	Shabheen Parwoon	Mean, Variance & Standard Deviation.
23	17600321045	23	ANTARA GHOSH	Binomial Distribution.
24	17600321046	24	Argha Kar	Poisson Distribution.
25	17600321047	25	Md Sajjad Atmri	Normal and Standard Normal Distribution.
26	17600321048	26	Antarip Manna	Exponential Distribution.



Hooghly Engineering & Technology College

DEPARTMENT: ELECTRONICS & COMMUNICATION ENGINEERING

SECOND YEAR (BATCH : 2021 - 2025) 3rd Sem. ECE Mathematics-III (BS-M301)

SL. NO	ROLL NO	CLASS ROLL	NAME	Report Writing topics for CA-2 from Probability Theory
27	17600321049	27	PRANAY SEN CHOUDHURY	Gamma Distribution.
28	17600321050	28	RANJIT PATHAK	Discrete & Continuous Distributions.
29	17600321052	29	Solanki Sadhu	Random Variables & Events described by Random Variables.
30	17600321053	30	Sohun Sahana	Distribution Function & the Important Theorem based on it.
31	17600321054	31	SOUMYO SARKAR	Mean, Variance & Standard Deviation.
32	17600321055	32	BIPEEN KUMAR ROY	Binomial Distribution.
33	Lateral	33	Singlap Das	Poisson Distribution.
34	Lateral	34	DEBJIT DEY	Normal and Standard Normal Distribution.
35	Lateral	35	Darshana Santra	Exponential Distribution.
36	Lateral	36	Shubham Das	Gamma Distribution.
37	Lateral	37	Chandrima Modak	Discrete & Continuous Distributions.
38	Lateral	38	Shrutii Saa	Random Variables & Events described by Random Variables.
39	Lateral	39	ADITI DAS	Distribution Function & the Important Theorem based on it.
40	Lateral	40	MOHINI HANRA	Mean, Variance & Standard Deviation.
41	Lateral	41	Moumita Paul	Binomial Distribution.
42	Lateral	42	Ankita Sarker	Poisson Distribution.
43	Lateral	43	Sudeshna Saha	Normal and Standard Normal Distribution.
44	Lateral	44	Sk sahin	Exponential Distribution.
45	Lateral	45	DEBARUN MUKHERJEE	Gamma Distribution.
46	Lateral	46	Anuj kr Singh	Discrete & Continuous Distributions.
47	Lateral	47	Arpan Mondal	Random Variables & Events described by Random Variables.
48	Lateral	48	SUDIPTA MONDAL	Distribution Function & the Important Theorem based on it.
49	Lateral	49	Amit Mondal	Mean, Variance & Standard Deviation.
50	Lateral	50	Subham Ghosh	Binomial Distribution.
51	Lateral	51	Dipti Bag	Poisson Distribution.
52	Lateral	52	Aditya Ghosh	Normal and Standard Normal Distribution.
53	Lateral	53	Sayani Saha	Exponential Distribution.
54	Lateral	54	Sunanda Biswas	Gamma Distribution.
55	Lateral	55	Kalyani Bhandari	Discrete & Continuous Distributions.
56	Lateral	56	Abhishek dey	Random Variables & Events described by Random Variables.
57	Lateral	57	Sk. Moziz Hossain	Distribution Function & the Important Theorem based on it.
58	Lateral	58	Ripa Ghosh	Mean, Variance & Standard Deviation.
59	Lateral	59	Namrata Som	Binomial Distribution.
60	Lateral	60	Saunak Banduri	Poisson Distribution.
61	Lateral	61	Palash Chal	Normal and Standard Normal Distribution.
62	Lateral	62	Arghya Paul	Exponential Distribution.
63	Lateral	63	Dona Ghosh	Gamma Distribution.



22-23
odd.

(3)

Hooghly Engineering & Technology College

DEPARTMENT: ELECTRONICS & COMMUNICATION ENGINEERING

SECOND YEAR (BATCH : 2021 - 2025) 3rd Sem. ECE Mathematics-III (BS-M301)

64	Lateral	64	Shuva Day	Discrete & Continuous Distributions.
65	Lateral	65	Sayan Bhawal	Random Variables & Events described by Random Variables.
66	Lateral	66	Amab Ghosh	Distribution Function & the Important Theorem based on it.
67	Lateral	67	Sounak Ghosh	Mean, Variance & Standard Deviation.
68	Lateral	68	Amit Samanta	Binomial Distribution.



R-pal
20/12/2022

Prof. *Susmita Ghosh*
20/12/22
Officer-in-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipupati
Hooghly, Pin- 712103

Hooghly Engineering & Technology College

DEPARTMENT: ELECTRONICS & COMMUNICATION ENGINEERING

SECOND YEAR (BATCH : 2021 - 2025) 3rd Sem. ECE Mathematics-III (BS-M301)

SL NO	ROLL NO	CLASS ROLL	NAME	MS Power Point presentation topics for CA-1 from Probability Theory
1	17600321001	1	ANUBHAB PALIT	Basic Terminology to Study the Mathematics of Probability
2	17600321002	2	Ishita Dutta	Set Theory on Probability
3	17600321003	3	ARPAN BISWAS	Some Types of Events in probability
4	17600321004	4	Subhrajyoti Mandal	Some basic Theorems on Probability
5	17600321005	5	SAMPURNA PAL	Definition of Probability
6	17600321006	6	SHOVA VARMA	Concept of Conditional Probability and Independency of Events
7	17600321008	7	Anushka Roy	Application of Baye's Theorem
8	17600321009	8	Ayan Pal	Baye's Theorem, an Important Role in Probability Theory
9	17600321010	9	Amit Kumar Balshi	Addition and Multiplication Rule in Probability of Two Events
10	17600321011	10	TUHINA ADHIKARY	Independency also holds for any pairs when the two events are independent
11	17600321012	11	TUHIN TARAFDAR	Optimum values of Probability with Impossible and Certain Events
12	17600321013	12	Adrija Gupta	Basic Terminology to Study the Mathematics of Probability
13	17600321015	13	Shreya Mishra	Set Theory on Probability
14	17600321016	14	Akanksha Singh	Some Types of Events in probability
15	17600321017	15	Shibam Mishra	Some basic Theorems on Probability
16	17600321018	16	Shyamal Kumar Sabow	Concept of Conditional Probability and Independency of Events
17	17600321020	17	Abhrajit Saha	Application of Baye's Theorem
18	17600321021	18	DEBIANI ROY	Baye's Theorem, an Important Role in Probability Theory
19	17600321041	19	Sayan Adak	Addition and Multiplication Rule in Probability of Two Events
20	17600321042	20	Sushil Pal	Independency also holds for any pairs when the two events are independent
21	17600321043	21	Eshita Dey	Optimum values of Probability with Impossible and Certain Events
22	17600321044	22	Shahen Parween	Basic Terminology to Study the Mathematics of Probability
23	17600321045	23	ANTARA GHOSH	Set Theory on Probability
24	17600321046	24	Argha Kar	Some Types of Events in probability
25	17600321047	25	Md Sajjad Attari	Some basic Theorems on Probability
26	17600321048	26	Antarip Manna	



Hooghly Engineering & Technology College

DEPARTMENT: ELECTRONICS & COMMUNICATION ENGINEERING

SECOND YEAR (BATCH : 2021 - 2025) 3rd Sem. ECE Mathematics-III (BS-M301)

SL. NO	ROLL NO	CLASS ROLL	NAME	MS Power Point presentation topics for CA-1 from Probability Theory
27	17600321049	27	PRANAY SEN CHOUHDHURY	Definition of Probability
28	17600321050	28	RANJIT PATIARAK	Concept of Conditional Probability and Independency of Events
29	17600321052	29	Sotanki Sushu	Application of Baye's Theorem
30	17600321053	30	Sohan Saha	Baye's Theorem, an Important Role in Probability Theory
31	17600321054	31	SOUMYO SARKAR	Addition and Multiplication Rule in Probability of Two Events
32	17600321055	32	IMPEEN KUMAR ROY	Independency also holds for any pairs when the two events are independent
33	Lateral	33	Singlap Das	Optimum values of Probability with Impossible and Certain Events
34	Lateral	34	DEMIT DEY	Basic Terminology to Study the Mathematics of Probability
35	Lateral	35	Dandana Santra	Set Theory on Probability
36	Lateral	36	Shubham Das	Some Types of Events in probability
37	Lateral	37	Chandrina Modak	Some basic Theorems on Probability
38	Lateral	38	Shruti Suu	Definition of Probability
39	Lateral	39	ADITI DAS	Concept of Conditional Probability and Independency of Events
40	Lateral	40	MOHINI HANRA	Application of Baye's Theorem
41	Lateral	41	Moumita Paul	Baye's Theorem, an Important Role in Probability Theory
42	Lateral	42	Ankita Sarkar	Addition and Multiplication Rule in Probability of Two Events
43	Lateral	43	Sudeshna Saha	Independency also holds for any pairs when the two events are independent
44	Lateral	44	Sk sahin	Optimum values of Probability with Impossible and Certain Events
45	Lateral	45	DEBARUN MUKHERJEE	Basic Terminology to Study the Mathematics of Probability
46	Lateral	46	Anuj kr Singh	Set Theory on Probability
47	Lateral	47	Arpan Mandal	Some Types of Events in probability
48	Lateral	48	SUDIPTA MONDAL	Some basic Theorems on Probability
49	Lateral	49	Amit Mondal	Definition of Probability
50	Lateral	50	Subham Ghosh	Concept of Conditional Probability and Independency of Events
51	Lateral	51	Dipti Bag	Application of Baye's Theorem
52	Lateral	52	Aditya Ghosh	Baye's Theorem, an Important Role in Probability Theory
53	Lateral	53	Sayani Saha	Addition and Multiplication Rule in Probability of Two Events
54	Lateral	54	Sunanda Biswas	Independency also holds for any pairs when the two events are independent
55	Lateral	55	Kalyani Bhandari	Optimum values of Probability with Impossible and Certain Events
56	Lateral	56	Abhishek dey	Basic Terminology to Study the Mathematics of Probability
57	Lateral	57	Sk. Mofiz Hossain	Set Theory on Probability
58	Lateral	58	Ripa Ghosh	Some Types of Events in probability
59	Lateral	59	Namrata Som	Some basic Theorems on Probability
60	Lateral	60	Saurak Banduri	Definition of Probability
61	Lateral	61	Palash Chal	Concept of Conditional Probability and Independency of Events
62	Lateral	62	Arghya Paul	Application of Baye's Theorem
63	Lateral	63	Dona Ghosh	Baye's Theorem, an Important Role in Probability Theory



22-23
order

Hooghly Engineering & Technology College

64	Lateral	64	Shuva Day	Addition and Multiplication Rule in Probability of Two Events
65	Lateral	65	Sayan Bhawal	Independency also holds for any pairs when the two events are independent
66	Lateral	66	Arnab Ghosh	Optimum values of Probability with Impossible and Certain Events
67				



R. Patra
04/08/2022

Prof. Swagata Choudhury
4/8/22
Officer-in-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulbati
Hooghly, Pin- 712103

HOOUGHLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Assessment (CA4), May, 2022

DEPARTMENT : CSE

Subject: Mathematics – II A
Year: 1st
Time: 1 Hr

Code: BS-M201
Sem: 2nd
Full Marks: 25

Group-A (Answer any five)

1 × 5 = 5

1. Choose the correct answer:

a) The following distribution is a pmf of a random variable:

x_i	-1	0	1	2
f_i	0.3	0.4	0.2	0.1

CO-1
Apply

- (I) true (II) false (III) either true or false (IV) none of these

b) For the discrete distribution

X	1	2	3	4	5
f_i	$\frac{1}{15}$	$\frac{2}{15}$	$\frac{3}{15}$	$\frac{4}{15}$	$\frac{5}{15}$

CO-1
Evaluate

$P(X < a) = \frac{1}{5}$. Then $a =$

- (I) 1 (II) 2 (III) 3 (IV) 4

c) Value of c for which the function

$$f(x) = \begin{cases} cx, & x = 0, 1, 2, 3, 4, 5, 6 \\ 0, & \text{otherwise} \end{cases}$$

CO-1
Analyze

becomes a pmf, is

- (I) $\frac{1}{21}$ (II) $\frac{1}{15}$ (III) $\frac{2}{21}$ (IV) $\frac{4}{15}$

d) If the random variable X takes the values 1, 2, 3 and 4 such that

$$2P(X = 1) = 3P(X = 2) = P(X = 3) = 5P(X = 4), \text{ then } P(X = 4) =$$

CO-1
Analyze

- (I) $\frac{15}{61}$ (II) $\frac{10}{61}$ (III) $\frac{30}{61}$ (IV) $\frac{6}{61}$

e) For a random variable X, $E[(X - 2)^2] = 6$, $E[(X - 1)^2] = 10$.

Then $\sigma_x =$

CO-4
Evaluate

- (I) $\sqrt{3}$ (II) $\sqrt{2}$ (III) 0 (IV) $\frac{\sqrt{15}}{2}$

f) For a Poisson distribution $P(1) = P(2)$, then the standard deviation is as

CO-1
Apply

- (I) 0 (II) 2 (III) $\sqrt{2}$ (IV) 4



g) If $3z - x = 5$ where z is a standard normal variate, then

(I) x is a normal variate with mean 5, s.d. 3

(II) x is a normal variate with mean 3, s.d. 5

(III) x is a normal variate with mean -5, s.d. 3

(IV) can not be said

CO-1
Understand
 $5 \times 4 = 20$

Group-B (Answer any four)

2. A random variable X has the following probability mass function:

X	:	0	1	2	3	4	5	6	7
$P(X=k)=f(x)$	:	0	k	$2k$	$2k$	$3k$	k^2	$2k^2$	$7k^2 + k$

CO-1
Evaluate
(2 + 3)

(i) Determine the constant k

(ii) Determine the $E(X)$.

3. Find the mean and variance for the Poisson distribution.

CO-4
Evaluate
(2 + 3)

4. The length of bolts produced by a machine is normally distributed with mean 4 and standard deviation 0.5. A bolt is defective if its length does not lie in the interval (3.8, 4.3). Find the percentage of defective bolts produced by the machine.

[Given, $\frac{1}{\sqrt{2\pi}} \int_{-\infty}^{0.6} e^{-t^2/2} dt = 0.7257$; $\frac{1}{\sqrt{2\pi}} \int_{-\infty}^{0.4} e^{-t^2/2} dt = 0.6554$]

CO-3
Analyze

5. In a normal distribution, 31% of the items are under 45 and 8% are above 64. Find the mean and standard deviation. [Given $P(0 < Z < 1.405) = 0.42$, $P(-1.496 < Z < 0) = 0.19$]

CO-3
Analyze

6. Suppose that during rainy season, on a tropical island, the length of shower has an exponential distribution with average length of shower $\frac{1}{2}$ minute. What is the probability that a shower will last more than three minutes? If a shower has already lasted for 2 minutes; what is the probability that it will last for at least one more minute?

CO-1
Remember
(2 + 3)

7. If a random variable has the Gamma distribution with parameter $\alpha = 2$ and $\lambda = \frac{1}{3}$, find the mean and the standard deviation of this distribution. Hence find the probability that the random variable will take a value less than 5.

CO-1
Remember
(1 + 1 + 3)

R. Patra
31/05/22

Shan's
Prof. Dr. 31/5/22
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpat
Hooghly, Pin- 712103



2nd Sem. (2022-2023) (Even)

Batch: 2022-2026

Mathematics-II A (BS-M201)

CSE-A

HOOGLY ENGINEERING &

TECHNOLOGY COLLEGE

Vivekananda Road,
Alipore, Hooghly

Hooghly
at Hooghly
Subje

(online)
(online)
(online)
(online)

Teacher's Name :- Dr. Rajesh

No.	Name of Student	21-02-23	22-02-23	23-02-23	25-02-23	28-02-23	01-03-23	02-03-23	04-03-23	09-03-23	11-03-23	14-03-23	15-03-23	16-03-23	25-03-23	28-03-23	29-03-23	30-03-23	01-04-23	04-04-23	05-04-23	06-04-23	10-04-23	11-04-23	12-04-23	13-04-23	18-04-23 (online)	19-04-23 (online)	23-04-23 (online)	24-04-23 (online)	25-04-23	27-04-23	29-04-23	01-05-23	05-05-23	13/05/23	Remarks			
1.	Shaswata Biswas	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p			
2.	Sreejeeta Ghosh	.	p	p	p	p	.	p	p	p	p	p	p	p	.	p																								
3.	Debraj Mondal	p	p	.	p	p	p	p	p	p	p	.	p	p	p																									
4.	Siryan Roy	.	p	p	.	p	p	p	p	p	.	p	p	p	p																									
5.	Doita Seth	p	.	p	p	.	p	p	p	p	p	.	p	p	p	p																								
6.	Ankita Debnath	p	p	.	p	p	p	p	p	p	.	p	p	p	p																									
7.	Satyam Das	.	p	p	.	p	p	.	p	p	.	p	p	.	p	p																								
8.	Sumanda Nandi	p	p	.	p	p	p	.	p	p	p	p	p	p	p																									
9.	Sourav Sarkar	p	p	p	p	p	p	p	p	p	p	p	p	p	p																									
10.	Devjyoti Bamejee	p	.	p	p	p	.	p	p	p	p	p	p	p	p																									
11.	Sayan Baishya	p	p	p	.	p	p	p	p	p	p	p	p	p	p																									
12.	Debjyoti Nath	.	p	p	p	.	p	p	.	p	p	.	p	p	p																									
13.	Soumi Maji	p	p	p	p	.	p	p	p	p	p	p	p	p	p																									
14.	Soumajeet Sarkar	p	p	p	p	p	p	p	p	p	p	p	p	p	p																									
15.	Anik Biswas	p	p	.	p	p	.	p	p	p	p	.	p	p	p																									
16.	Sourav Saha	.	p	p	p	p	p	p	p	p	p	p	p	p	p																									
17.	Oindrila Sarkar	p	p	p	p	p	.	p	p	p	p	p	p	p	p																									
18.	Disha Mukherjee	p	p	.	p	p	p	p	.	p	p	p	p	p	p																									



2nd Sem. (2022-2023) (Even)

Batch : 2022-2026

Mathematics-IIA (BS-M201)

CSE-A

HOOGLY ENGINEERING &

TECHNOLOGY COLLEGE

Vivekananda Road,
Atendra Nagar, Hooghly

Hooghly
at the
Subject

(online)
(online)
(online)
(online)

Teacher's Name :- Dr. Rajesh

No.	Name of Student	21-02-23	22-02-23	23-02-23	24-02-23	25-02-23	26-02-23	01-03-23	02-03-23	04-03-23	09-03-23	11-03-23	14-03-23	15-03-23	16-03-23	25-03-23	28-03-23	29-03-23	30-03-23	01-04-23	04-04-23	05-04-23	06-04-23	16-04-23	4-04-23	12-04-23	13-04-23	18-04-23	19-04-23	23-04-23	24-04-23	25-04-23	27-04-23	29-04-23	10-05-23	10-05-23	11-05-23	13-05-23	Remarks			
19.	Abhra Baran Kozl	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
20.	Rupam Kundu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
21.	Rishav Bhar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
22.	Soham Kundu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
23.	Arghya Chowdhury	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
24.	Tarun Masanta	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
25.	Akash Verma	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
26.	Anand Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
27.	Sayan Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
28.	Nabajit Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
29.	Anirban Samtra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
30.	SoumadEEP Chatterjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
31.	Aditya Kumar Singh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
32.	Sugrik Tamfodee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
33.	Dipankar Manna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
34.	Bishal Bhuiya	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
35.	Jeet Kangsabamik	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
36.	Arshish Kumar Sherma	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		



2nd Sem. (2022-2023) (Even)

Batch: 2022-2026

Mathematics - IIA (BS-M201)

CSE-A HOOGHLY ENGINEERING &

TECHNOLOGY COLLEGE

Teacher's Name :- Dr. Rajen

21/04/23
22/04/23
23/04/23
25/04/23
28/04/23
01/05/23
02-03-23
04-03-23
09-03-23
11-03-23
14-03-23
15-03-23
16-03-23
25-03-23
28-03-23
Vivekananda Road,
Hooghly, Pin-712103

(online)
(online)
(online)
(online)

Hooghly
at Hooghly
Subject
29-03-23
30-03-23
01-04-23
04-04-23
05-04-23
06-04-23
10-04-23
11-04-23
12-04-23
13-04-23
18-04-23
19-04-23
23-04-23
24-04-23
25-04-23
27-04-23
29-04-23
30-04-23
01-05-23
11-05-23
13-05-23

No.	Name of Student	21/04/23	22/04/23	23/04/23	25/04/23	28/04/23	01/05/23	02-03-23	04-03-23	09-03-23	11-03-23	14-03-23	15-03-23	16-03-23	25-03-23	28-03-23	29-03-23	30-03-23	01-04-23	04-04-23	05-04-23	06-04-23	10-04-23	11-04-23	12-04-23	13-04-23	18-04-23	19-04-23	23-04-23	24-04-23	25-04-23	27-04-23	29-04-23	30-04-23	01-05-23	11-05-23	13-05-23	Remarks		
55.	Biprojeet Dey	p	.	p	p	.	p	p	p	p	.	.	p	p	p	.	.	p	p	p	p	.	p	p	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	
56.	Prasanta Mondal	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	.	.	p	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
57.	Prince Kumar Prasad	.	p	p	p	p	p	p	p	p	.	.	.	p	p	p	.	.	p	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
58.	Samrat Ghosh	p	p	p	p	.	p	p	p	.	p	p	p	p	p	p	.	.	p	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
59.	Ayush Choudhury	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	.	.	p	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p		
60.	Tramboknath Chatterjee	p	p	p	p	.	p	p	p	.	p	.	p	.	p	.	.	.	p	p	p	p	.	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p		

R. Patra
13/05/2023

Prof. Swagata Choudhury
Officer-in-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati
Hooghly, Pin-712103



2nd Sem (2022-2023) (Even)

Batch: 2022-2026

Mathematics-IIA (BS-M201)

CSE-B.

HOOGLY ENGINEERING &

TECHNOLOGY COLLEGE

Vivekananda Road,
Hendrapada, Hooghly

Hooghly
at the
Subject

Teacher's Name :-

Dr. Rajesh

(online)
(online)
(online)
(online)
(online)
(online)
(online)

No.	Name of Student	22/05/23	23/05/23	01/06/23	02/06/23	03/06/23	03/06/23	09/06/23	10/06/23	10/06/23	15/06/23	16/06/23	24/06/23	24/06/23	29/06/23	30/06/23	31/06/23	31/06/23	05/07/23	06/07/23	12/07/23	12/07/23	13/07/23	14/07/23	17/07/23	18/07/23	19/07/23	27/07/23	28/07/23	30/07/23	07/08/23	09/08/23	10/08/23	11/08/23	12/08/23	12/08/23	13/08/23	Remarks			
61.	Nayan Das	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p		
62.	Soham De	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
63.	Ankit Pramanick	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
64.	Sourmili Ghosh	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
65.	Aditya Sharma	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
66.	sk. Shonju Ali	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
67.	Sourvik Majhi	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p		
68.	Shourvik Dutta Banik	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p		
69.	Manika Dutta	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
70.	Arifur Rahman	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
71.	Akash Poddar	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
72.	Pranto Dutta	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
73.	Shirsa Roy	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
74.	Rajesh Kumar Danyal	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
75.	Prabuddha Roy	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
76.	Sayan Ghosh	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
77.	Amindya Roy	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	
78.	Ayan Bose	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	



2nd Sem (2022-2023) (Even)

Batch : 2022-2026

Mathematics-IIA (BS-M201)

CSE-B

HOOGLY ENGINEERING &

TECHNOLOGY COLLEGE

Hooghly
at the
Sub...

Teacher's Name :-

Dr. Rajat

Vivekananda Road,
Mandira Chowk, Hooghly

(online)
(online)
(online)
(online)
(online)
(online)

No.	Name of Student	22/02/23	23/02/23	01/03/23	02/03/23	03/03/23	03/05/23	09/08/23	10/03/23	10/03/23	15/03/23	16/03/23	24/03/23	24/03/23	29/03/23	30/03/23	31/03/23	31/03/23	05/04/23	06/04/23	12/04/23	12/04/23	15/04/23	16/04/23	17/04/23	18/04/23	19/04/23	21/04/23	28/04/23	30/04/23	07/05/23	09/05/23	10/05/23	11/05/23	12/05/23	12/05/23	13/05/23	Remarks			
79.	Achintya Mamdi	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
80.	Trisham Nayek	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
81.	Ayushman Pal	.	P	P	P	P	.	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
82.	Anka Pratim Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
83.	Rupayan Nath	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
84.	Spandan Bandyopadhyay	P	.	P	P	P	P	.	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
85.	Aronab Ghosh	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
86.	Niley Ghosh	P	.	P	P	P	P	P	.	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
87.	Subham Nath	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
88.	Sohana Mondal	P	.	P	P	P	P	P	.	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
89.	Utkarsh Abhishek	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
90.	Aronab Paul	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
91.	Britam Roy	P	.	P	P	P	P	P	.	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
92.	Debarpan Mustafi	.	P	P	.	P	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
93.	Md. Akif Sk.	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

R. P. Patra
13/05/2023

Prof. Swagata Choudhury
Officer-in-Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati
Hooghly, Pin- 712103



2nd Sem. (2018-2019) (Even)

Batch: 2018-2022

Mathematics - IIA (BS-M201)

CSE

HOOGLHY ENGINEERING &

TECHNOLOGY COLLEGE

Vivekananda Road,

Hooghly

Attendance for the month

at the

Subject

Teacher's Name :-

No.	Name of Student	Attendance for the month														Attendance for the month														Remarks								
		02-01-19	03-01-19	04-01-19	05-01-19	10-01-19	15-01-19	16-01-19	17-01-19	19-01-19	21-01-19	29-01-19	30-01-19	31-01-19	02-02-19	05-02-19	06-02-19	07-02-19	12-02-19	13-02-19	14-02-19	16-02-19	19-02-19	20-02-19	21-02-19	26-02-19	27-02-19	28-02-19	02-03-19		05-03-19	06-03-19	07-03-19	12-03-19	16-03-19	19-03-19	26-03-19	
1.	Vivek Kr. Gupta	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2.	Tirthankar Baisya	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
3.	Tinu Pal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4.	Tanushree Bhat	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5.	Sweta Lily Tudu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6.	Subhramanyu Mahapatra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7.	Subhaya Sengupta	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8.	Subhajit Mukherjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
9.	Souvik Paul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
10.	Souvik Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11.	Sourav Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12.	Soumyodip Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13.	Somnath Neogi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14.	Somnath Chakraborty	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
15.	Somnath Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16.	Shubhankar Dubey	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
17.	Shivani Raut	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18.	Shilpi Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P



2nd Sem (2018-2019) (Even)

Batch: 2018-2022

Mathematics-IIA (BS-M201)

CSE

HOOGLY ENGINEERING &

TECHNOLOGY COLLEGE

Vivekananda Road,

Hooghly

Attendance for the month

at the

Subject

Teacher's Name :-

No.	Name of Student	02-01-19	03-01-19	04-01-19	05-01-19	10-01-19	15-01-19	16-01-19	17-01-19	19-01-19	21-01-19	29-01-19	30-01-19	31-01-19	02-02-19	05-02-19	06-02-19	07-02-19	12-02-19	13-02-19	14-02-19	16-02-19	19-02-19	20-02-19	21-02-19	26-02-19	27-02-19	28-02-19	02-03-19	05-03-19	06-03-19	07-03-19	12-03-19	16-03-19	19-03-19	26-03-19	Remarks		
37.	Monish Kr. Baisagi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
38.	Mohibul Akhtar Mollah	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
39.	Mehuli Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
40.	Md. Arif	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
41.	Mainak Goswami	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
42.	M. Shyam Sunder Rao	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
43.	Kundan Mukherjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
44.	Koushik Chandra Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
45.	Koulik Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
46.	Khushi Kumari	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
47.	Kaustav Bag	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
48.	Jayanta Dhali	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
49.	Jasmeet Kaur	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
50.	Elisha Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
51.	Dhamanjoy Giri	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
52.	Debarghya Mukherjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
53.	Arshin Kr. Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
54.	Ankadip Basu Mallick	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	





**HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
(DEPARTMENT OF BASIC SCIENCE AND HUMANITIES)**

Name of the Faculty: Dr. Rajesh Patra
 Designation: HOD & Assistant Professor
 Session: 2022-2023 (July-December, 2022)

Class Hr	10:00-10:50	10:50-11:40	11:40-12:30	12:30-01:20	01:20-02:10	02:10-03:00	03:00-03:50	03:50-04:40
TUE	Mathematics-III (BS-M301) ECE III	Mathematics-III (BS-M301) ME III			B			
WED			Mathematics-III (BS-M301) EE III	Mathematics-III (BS-M301) ME III	R			
THU	Mathematics-III (BS-M301) EE III	Mathematics-III (BS-M301) ECE III			E			
FRI	Mathematics-III (BS-M301) EE III	Mathematics-III (BS-M301) ME III			A			
SAT			Mathematics-III (BS-M301) ECE III		K	Mathematics-III (BS-M301) ME III		

Theory: 10 Practical: 0 Total Load: 10

R. Patra
07/07/2022

Signature of the Faculty

R. Patra
07/07/2022

Signature of the HOD
 Department of Basic Science & Humanities
 H. E. T. C., Hooghly.



**HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
(DEPARTMENT OF BASIC SCIENCE AND HUMANITIES)**

Name of the Faculty: Dr. Rajesh Patra
 Designation: HOD & Assistant Professor
 Session: 2022-2023 (January-June, 2023)

Class Hr Day	09:45-10:35	10:35-11:25	11:25-12:15	12:15-01:05	01:05-01:55	01:55-02:45	02:45-03:35	03:35-04:25
TUE	Mathematics-IIA (BS-M201) CSE II-A	Numerical Methods (OEC-IT601A) CSE VI-X		Numerical Methods (OEC-IT601A) CSE VI-Y	B			
WED		Mathematics-IIA (BS-M201) CSE II-A	Mathematics-IIA (BS-M201) CSE II-B		R			
THU	Numerical Methods (OEC-IT601A) CSE VI-X	Mathematics-IIA (BS-M201) CSE II-B	Mathematics-IIA (BS-M201) CSE II-A		E			
FRI	Mathematics-IIA (BS-M201) CSE II-B	Numerical Methods (OEC-IT601A) CSE VI-Y	Mathematics-IIA (BS-M201) CSE II-B		A			
SAT	Numerical Methods (OEC-IT601A) CSE VI-X	Mathematics-IIA (BS-M201) CSE II-A	Numerical Methods (OEC-IT601A) CSE VI-Y		K			

Theory: 14 Practical: 0 Total Load: 14

R. Patra
 18/02/2023
 Signature of the Faculty

R. Patra
 18/02/2023
 Signature of the HOD
 H. O. D.
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.



**HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
(DEPARTMENT OF BASIC SCIENCE AND HUMANITIES)**

Name of the Faculty: Dr. Rajesh Patra
 Designation: Assistant Professor
 Session: 2021-2022 (July-December, 2021)

Class Hr Day	10:15-11:15	11:30-12:30	12:45-01:45	02:00-03:00	03:00-04:00	04:15-05:15
TUE	Mathematics-III (BS-M301) ME III		Mathematics-III (BS-M301) ECE III	B		
WED	Mathematics-III (BS-M301) EE III	Mathematics-III (BS-M301) EE III		R	Mathematics-III (BS-M301) ECE III	
THU	Mathematics-III (BS-M301) EE III			E		
FRJ			Mathematics-III (BS-M301) ME III	A		
SAT		Mathematics-III (BS-M301) ME III		K	Mathematics-III (BS-M301) ECE III (2:30-3:30)	

Theory: 09 Practical: 0 Total Load: 09

R. Patra 04/09/2021
 Signature of the Faculty

Mukherjee 04/09/2021
 Signature of the HOD,
 Basic Science & Humanities Department
 H. E. T. G., Hooghly.



**HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
(DEPARTMENT OF BASIC SCIENCE AND HUMANITIES)**

Name of the Faculty: Dr. Rajesh Patra
 Designation: HOD & Assistant Professor
 Session: 2021-2022 (January-June, 2022)

Class Hr Day	10:00-11:00	11:00-12:00	12:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	04:00-5:00
TUE	Numerical Methods (OEC-JT601A) CSE VI		Mathematics-IIA (BS-M201) CSE II-A	B			
WED	Mathematics-IIA (BS-M201) CSE II-A			R	Mathematics-IIA (BS-M201) CSE II-B		
THU	Mathematics-IIA (BS-M201) CSE II-A	Numerical Methods (OEC-JT601A) CSE VI		E			
FRI	Numerical Methods (OEC-JT601A) CSE VI		Mathematics-IIA (BS-M201) CSE II-B	A			
SAT				K	Mathematics-IIA (BS-M201) CSE II-B		

Theory: 09 Practical: 0 Total Load: 09

R. Patra 15/03/2022

Signature of the Faculty

Mukherjee 15/03/2022

Signature of the HOD
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.



**HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
(DEPARTMENT OF BASIC SCIENCE AND HUMANITIES)**

Name of the Faculty: Rajesh Patra
 Designation: Assistant Professor
 Session: 2020-2021 (July-December, 2020)

Class Hr	10:30-11:30	12:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	04:30-5:30
MON	Mathematics-III (BS-M301) ECE III	Mathematics-III (BS-M301) EE III				
TUE	Mathematics-III (BS-M301) ME III	Mathematics-III (BS-M301) ECE III				
WED	Mathematics-III (BS-M301) EE III					Mathematics-III (BS-M301) ECE III
THU	Mathematics-III (BS-M301) EE III	Mathematics-III (CE(BS)-302) CE III				
FRI	Mathematics-III (BS-M301) ME III					
SAT	Mathematics-III (BSC-301) CSE III					

Theory: 10 Practical: 0 Total Load: 10

R. Patra 17/08/2020

Signature of the Faculty

Mukherjee 17/08/2020

Signature of the HOD

Basic Science & Humanities Department
 H. E. T. G., Hoochly.



**HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
(DEPARTMENT OF BASIC SCIENCE AND HUMANITIES)**

Name of the Faculty: Dr. Rajesh Patra
 Designation: Assistant Professor
 Session: 2020-2021 (January-June, 2021)

Class Hr Day	10:30-11:30	12:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	04:30-5:30
MON	Numerical Methods (OEC-IT601A) CSE VI				Numerical Methods (BS-M401) ECE IV	
TUE						
WED	Numerical Methods (OEC-IT601A) CSE VI		Mathematics-IIA (BS-M201) CSE II			
THU	Mathematics-IIA (BS-M201) CSE II				Numerical Methods (OEC-IT601A) CSE VI	
FRI		Numerical Methods (BS-M401) ECE IV			Mathematics-IIA (BS-M201) CSE II	
SAT					Mathematics-IIA (BS-M201) CSE II	

Theory: 09 Practical: 0 Total Load: 09

R. Patra 13/04/2021

Signature of the Faculty

Mukherjee 13/04/2021

Signature of the HOD
 Basic Science & Humanities Department
 H. E. T. C., Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE AND HUMANITIES
PERSONAL ROUTINE FOR JULY'19 - DEC'19(Odd Sem 2019-2020)
NAME OF THE FACULTY: RAJESH PATRA



DAY	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30
TUESDAY	Mathematics-III (BS-M301) EE III	Mathematics-III (BS-M301) ECE III		Mathematics-III (BS-M301) ME III					
WEDNESDAY		Mathematics-III (BS-M301) ECE III	Mathematics-III (BS-M301) EE III			Mathematics-III (BS-M301) ECE III			
THURSDAY	Mathematics-III (CE/BS)-302 CSE III	Mathematics-III (BS-M301) EE III		Mathematics-III (BS-M301) ME III					
FRIDAY		Mathematics-III (BS-M301) ECE III	Mathematics-III (BS-M301) ME III						
SATURDAY	Mathematics-III (BS-M301) EE III		Mathematics-III (BSC-301) CE III	Mathematics-III (BS-M301) ME III					

Theory: 14 Practical: 0 Total Load: 14

R. Patra
05/07/2019

Signature of Faculty

A. Mukherjee
05/07/2019

Signature of HOD

H. D. D.

Basic Science & Humanities Department
H. E. T. C., Hooghly.



**HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
(DEPARTMENT OF BASIC SCIENCE AND HUMANITIES)**

Name of the Faculty: Rajesh Patra
 Designation: Assistant Professor
 Session: 2019-2020 (January-June, 2020)

Class Hr Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-01:20	01:20-02:10	02:10-03:00	03:00-03:50	03:50-04:40	04:40-5:30
TUE		Mathematics-IIA (BS-M201) CSE II							
WED						Numerical Methods (BS-M401) ECE IV			
THU			Mathematics-IIA (BS-M201) CSE II			Soft Skill ECE-VI	Numerical Methods (BS-M401) ECE IV		Soft Skill CE-VI
FRI		Mathematics-IIA (BS-M201) CSE II		Soft Skill CSE-VI					
SAT	Mathematics-IIA (BS-M201) CSE II					GATE/ Remedial Math (All VI Sem.)	Soft Skill EE-VI	Soft Skill ME-VI	GATE/ Remedial Math (All IV Sem.)

Theory: 07 Practical: 0 Others: 07 Total Load: 14

R. Patra 17/01/2020

Signature of the Faculty

Mukherjee 17.09.2020

Signature of the HOD

H. O. D.
 Basic Science & Humanities Department
 H. E. T. C., Hoochly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE AND HUMANITIES
PERSONAL ROUTINE FOR JULY'18 – DEC'18(Odd Sem 2018-2019)
NAME OF THE FACULTY: RAJESH PATRA



DAY	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30
TUESDAY	Numerical methods (M(CS)301) ECE III	Numerical methods (M(CS)301) ECE III							
WEDNESDAY			Mathematics (M302) EE III			Mathematics (M302) ECE III			
THURSDAY		Mathematics (M302) ECE III	Mathematics (M302) EE III			Numerical methods (M(CS)301) ECE III			
FRIDAY		Mathematics (M302) ECE III	Numerical methods (M(CS)301) ECE III			Mathematics (M302) EE III			
SATURDAY			Numerical methods (M(CS)301) EE III						

Theory: 12 Practical: 0 Total Load: 12

R. Patra
25/07/2018

Signature of Faculty

P. Albrecht
25.7.18

Signature of HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF BASIC SCIENCE AND HUMANITIES
PERSONAL ROUTINE FOR JANUARY - JUNE, 2019 (EVEN)
NAME OF THE FACULTY: RAJESH PATRA



DAY	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30
TUESDAY	Mathematics (M402) ME IV	Mathematics-IIA (BS-M201) CSE II		Mathematics (BS-M201) CSE II					
WEDNESDAY	Mathematics (M402) CE IV	Numerical Methods (M(CS)401) ME IV			Mathematics (M401) CSE IV	Numerical Methods (M(CS)401) CSE IV			
THURSDAY	Mathematics (M401) CSE IV	Mathematics-IIA (BS-M201) CSE II							
FRIDAY	Numerical Methods (M(CS)401) CE IV			Numerical Methods (M(CS)401) ME IV			Mathematics (M401) CSE IV		
SATURDAY	Mathematics-IIA (BS-M201) CSE II	Numerical Methods (M(CS)401) CE IV				Numerical Methods (M(CS)401) CSE IV			

Theory: 15 Practical: 0 Total Load: 15

R. Patra
02/10/2019

Signature of Faculty

A. Debold
2.1.19
Signature of HOD

H. O. D.
Basic Science & Humanities Department
H. E. T. C., Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): July 2022 – December 2023			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of Academic Programme	October 14, 2022, Orientation Programme	July 4, 2022
2	Induction Programme for newly admitted students	October 15 to November 3, 2022	N.A.
3	Admission activities (for ensuing new students) to be completed by	November 30, 2022	N.A.
4	Registration activities (for ensuing newly admitted students for the session 2022-23) will be completed by	As per admission dates. Would be notified separately	N.A.
5	Enrolment of students (for 3 rd , 5 th & 7 th semester)	As per university directive	July 7, 2022 to July 15, 2022
6	Enrolment of students (for 1 st & 3 rd semester-Lateral)	Tentatively in the month of December, 2022	N.A.
7	Continuous Assessment 1(CA1) (In the form of Power Point Presentation) (for 3 rd , 5 th & 7 th semester)	As per university directive	August 1, 2022 to August 4, 2022
8	Continuous Assessment 2(CA2) (In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	As per university directive	September 1, 2022 to September 4, 2022
9	A Guest Lecture organised by Mechanical Dept.	3 rd week of September, 2022	
10	Drawing competition on the occasion of World AIDS Day by the NSS unit	1 st week of December, 2022	
11	A sensitization workshop on "Implementation of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013" by the Internal Complaints Committee(ICC)	1 st week of December, 2022	
12	Continuous Assessment 3(CA3)(In the form of Class Test)	As per university directive	October 17, 2022 to October 20, 2022
13	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	As per university directive	November 9, 2022 to November 12, 2022
14	Pre-Examination activities (Form fill-up etc.)	November 16, 2022 to November 24, 2022	November 16, 2022 to November 24, 2022
15	Practical, Sessional and Viva-Voce examinations	November 25, 2022 to November 30, 2022	November 25, 2022 to November 30, 2022
16	Marks submission for Practical, Sessional and Viva-Voce exams	December 1, 2022 to December 5, 2022	December 1, 2022 to December 5, 2022
17	Theory Examinations	December 2, 2022 to December 24, 2022	December 2, 2022 to December 24, 2022
18	Inter Semester Break	December 25, 2022 to January 1, 2023	December 25, 2022 to January 1, 2023
19	Publication of Result	Results will be announced in the Univ. website	

During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.



Sd/-: 4/02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.

Announcement regarding Special Trainings will be available in the College website/web portal in due course

Announcement regarding other activities of University/ College will be available in the University website/College website in due course

Sd/- H/T 02.07.22





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Odd Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
July 2022					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
Teaching Days: 20							
August 2022	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
Teaching Days: 20							
September 2022				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
Teaching Days: 21							
October 2022	31					1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
Teaching Days: 12							
November 2022		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				
Teaching Days: 19							
December 2022				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	
Teaching Days: 17							



Sd/- L/L, 09.07.22



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE


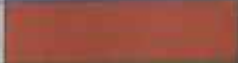

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	



S.D. 44 02.07.22

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2023 – June 2023		
Events		For 2 nd , 4 th , 6 th & 8 th Semester
1	Commencement of Academic Programme	January 2, 2023
2	Enrolment of students	January 4, 2023 to January 12, 2023
3	Annual Cultural Fest, UTKARSHA 2023	2 nd week of January, 2023
4	Annual Sports Meet	January 14, 2023
5	Continuous Assessment 1(CA1)(In the form of Power Point Presentation)	February 1, 2023 to February 4, 2023
6	A seminar on "Embedded Systems and its Applications" by Electronics & Communications Engineering Dept.	4 th week of February, 2023
7	A Poster Design Competition on the occasion of International Women's Day by the Women's Cell	March 8, 2023
8	Continuous Assessment 2(CA2)(In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	March 1, 2023 to March 4, 2023
9	Technical Fest TechHetc	3 rd week of March, 2023
10	A 3-Day workshop on "Advanced Surveying Using DGPS and total Station" by Civil Engineering Dept.	Last week of March, 2023
11	Continuous Assessment 3(CA3)(In the form of Class Test)	April 1, 2023 to April 4, 2023
12	A National Conference on "Emerging Technologies in Computer Science and Electronics and Communications" jointly by Computer Science Engineering & Electronics and Communication Depts.	1 st week of April 2023
13	A Blood Donation Camp by NSS unit in collaboration with the Students Health Home, North-Hooghly Regional Centre	3 rd week of April, 2023
14	Examination of the Spoken Tutorial Program	Last week of April, 2023
15	A National Conference on "Recent Trends in Electrical and Mechanical Engineering" jointly by Electrical Engineering & Mechanical Engineering Depts.	Last week of April, 2023
16	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	May 1, 2023 to May 4, 2023
17	Pre-Examination activities (Form fill-up etc.)	May 8, 2023 to May 16, 2023
18	Practical, Sessional and Viva-Voce examinations	May 22, 2023 to May 27, 2023
19	Marks submission for Practical, Sessional and Viva-Voce exams	May 28, 2023 to May 30, 2023
20	Theory Examinations	June 1, 2023 to June 20, 2023
21	Inter Semester Break	Would be notified later
22	Publication of Result	Results will be announced in the Univ. website
23	Last date of reporting on Mentoring (Phase I)	March 31, 2023



Sd/- 44 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

24	Last date of reporting on Mentoring (Phase II)	May 31, 2023
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in July, 2023. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		



S.H.L. 44, 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Even Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
January 2023	30	31					1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
Teaching Days: 18							
February 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28					
Teaching Days: 17							
March 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
Teaching Days: 21							
M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
April 2023						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
Teaching Days: 15							
May 2023	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
Teaching Days: 20							
June 2023				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
Teaching Days: 21							



Sd/- 44, 02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE


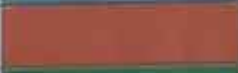

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	

S.P.L. L.H. 02.07.22

Dr. Smitadhi Ganguly

Principal in-Charge



Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): August 2021 – January 2022			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of University Registration process online for newly admitted students	August 25, 2021	N.A.
2	Teachers' Day Celebration (Virtual mode)	September 5, 2021	
3	TECHete 2k21 (Annual Technical Festival) (Virtual mode)	2 nd week of September, 2021	
4	Admission activities (for ensuing new students) to be completed by	September 15, 2021	N.A.
5	Commencement of Academic Programme	September 15, 2021	August 31, 2021
6	Orientation program & Fresher's welcome	September 22, 2021	N.A.
7	53rd NSS Day Celebration through Webinar	September 24, 2021	
8	Enrolment of students (for odd semesters)	October 1, 2021 to October 7, 2021	September 1, 2021 to September 10, 2021
9	Gandhiji's Birth Day Celebration(Virtual mode)	October 2, 2021	
10	Last date of continuous evaluation (Phase I)	N.A.	October 4, 2021
11	Induction Programme for newly admitted students	October 23, 2021	N.A.
12	Registration activities (for newly admitted students for the session 2021-22) will be completed by	October 25, 2021	N.A.
13	National Level Entrepreneurship Awareness Programme	Last week of October, 2021	
14	Swachh Bharat Activity in collaboration with MAKAUT NSS Unit (NSS)	Last week of October, 2021	
15	Last date of continuous evaluation (Phase II)	November 4, 2021	
16	SWACHHTA PAKHWADA – Azadi Ka Amrit Mahotsav celebration	December 1, 2021 to December 13, 2021	
17	Last date of continuous evaluation (Phase III)	December 4, 2021	
18	Last date of continuous evaluation (Phase IV)	January 5, 2022	
19	Pre-Examination activities (Form fill-up etc.)	January 6, 2022 to January 14, 2022	
20	Practical Examinations & Viva-Voce	January 15, 2022 to January 25, 2022	
21	Theory Examinations	January 17, 2022 to January 29, 2022	
22	Online Essay Competition (NSS)	Last week of January, 2022	
23	National Girl Child Day Celebration (NSS)	January 24, 2022	
24	73rd Republic Day Celebration (NSS)	January 26, 2022	
25	Alumni Meet	January 30, 2022	
26	Inter Semester Break	To be announced later	
27	Publication of Result	Results will be announced in the University website	
28	Last date of reporting on Mentoring (Phase I)	November 30, 2021	
29	Last date of reporting on Mentoring (Phase II)	January 31, 2022	
During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in March, 2021. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Signature and Date: 24.08.21



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. H. L. Ganguly 24.08.21

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpatl, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): February 2022 – June 2022		
Events		For Continuing Batches
1	Commencement of Academic Programme	February 1, 2022
2	Enrolment of students (for each semester)	February 1, 2022 to February 10, 2022
3	International Matribhasha Diwas Celebration (NSS)	February 21, 2022
4	Last date of continuous evaluation (Phase I)	March 4, 2022
5	International Women's day celebration	March 8, 2022
6	Webinar (Organized by NSS) in Google meet	2 nd week of March, 2022
7	Annual Cultural Festival, UTKARSHA 2022	Last week of March, 2022
8	Last date of continuous evaluation (Phase II)	April 4, 2022
9	Blood Donation Camp (NSS)	3 rd week of April, 2022
10	Last date of continuous evaluation (Phase III)	May 4, 2022
11	Last date of continuous evaluation (Phase IV)	June 4, 2022
12	Pre-Examination activities (Form fill-up etc.)	June 5, 2022 to June 18, 2022
13	Practical Examinations & Viva-Voce	June 20, 2022 to June 30, 2022
14	Theory Examinations	June 20, 2022 to June 30, 2022
15	The International Yoga Day Celebration (NSS)	June 21, 2022
16	Inter Semester Break (Summer)	Will be published later
17	Publication of Result (Final Semester)	Results will be announced in the University website in July, 2022
18	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2022
19	Last date of reporting on Mentoring (Phase I)	30th April, 2022
20	Last date of reporting on Mentoring (Phase II)	30th June, 2022
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. S. Ganguly 21.08.23
Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hoochly Engineering & Technology College
Vivekananda Road, Pipulpatl, Hooghly.



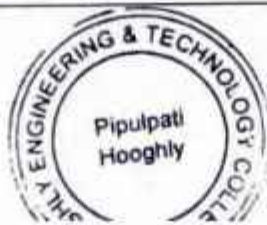
HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): November 2020 – March 2021			
Events		For Ensuing New Batch	For Continuing Batch
1	Admission activities (<i>for ensuing new students</i>) to be completed by	December, 2020	N.A.
2	Commencement of University Registration process online for newly admitted students	2 nd week of January, 2021	N.A.
3	Commencement of Academic Programme	3 rd week of January, 2021	1 st week of November, 2020
4	Induction Programme for newly admitted students	2 nd week of January, 2021 (Virtual Mode)	N.A.
5	Registration activities (<i>for ensuing newly admitted students for the session 2020-21</i>) will be completed by	3 rd week of January, 2021	N.A.
6	Republic Day Celebration	January 26, 2021 (Virtual Mode)	
7	Enrolment of students	Last week of January, 2021	Last week of November, 2020 (Except Lateral entries)
8	Alumni Meet	January 31, 2021 (Virtual Mode)	
9	Last date of Continuous Assessment (CA) I	Last week of January, 2021	
10	Last date of Continuous Assessment (CA) II	1 st week of February, 2021	
11	Practical Examinations & Viva-Voce (PCA I)	Last week of February, 2021	
12	Last date of Continuous Assessment (CA) III	Last week of February, 2021	
13	Last date of Continuous Assessment (CA) IV	2 nd week of March, 2021	
14	Practical Examinations & Viva-Voce (PCA II)	3 rd week of March, 2021	
15	Theory Examinations	Last week of March, 2021 (Online Mode)	
16	Inter Semester Break	Notice will be published later	
17	Publication of Result	Results will be announced in the Univ. website	
18	Last date of reporting on Mentoring	2 nd week of March, 2021	
During Inter-Semester-Break, Practical Training (<i>where applicable</i>) may be conducted.			
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Avijit Maity
03/11/2020



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020

Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103
Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): April 2021 – July 2021		
Events		For Continuing Batches
1	Commencement of Academic Programme	1 st week of April, 2021
2	Enrolment of students (for each semester)	April 20, 2021 to April 24, 2021
3	Last date of Continuous Assessment (CA) I	April 28, 2021 to May 3, 2021
4	Swachh Bharat Activity (NSS)	2 nd week of May, 2021 (Virtual Mode)
5	Last date of Continuous Assessment (CA) II	May 27, 2021 to May 31, 2021
6	Practical Examinations & Viva-Voce (PCA I)	May 27, 2021 to May 31, 2021
7	Last date of Continuous Assessment (CA) III	June 25, 2021 to June 30, 2021
8	Last date of Continuous Assessment (CA) IV	July 21, 2021 to July 24, 2021
9	Practical Examinations & Viva-Voce (PCA II)	July 21, 2021 to July 24, 2021
10	Theory Examinations	July, 2021
11	Semester Break	Notice will be published later
12	Publication of Result (Final Semester)	Results will be announced in the University website
13	Publication of Result (Other than Final Semester)	Results will be announced in the University website
14	Last date of reporting on Mentoring	Last week of June, 2021
During Inter-Semester-Break, Practical Training (<i>where applicable</i>) may be conducted.		
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020

Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2019 – December 2019			
Events		For Ensuing New Batch	For Continuing Batches
1	Commencement of University Registration process online for newly admitted students	July 22, 2019	N.A.
2	Admission activities (for ensuing new students) to be completed by	July 31, 2019	N.A.
3	Commencement of Academic Programme	August 1, 2019, Orientation Programme	July 15, 2019
4	Induction Programme for newly admitted students	August 1 to 21, 2019	N.A.
5	Registration activities (for newly admitted students for the session 2019-20) will be completed by	August 25, 2019	N.A.
6	Enrolment of students (for every semester)	August 14, 2019 to August 30, 2019	
7	Independence Day Celebration	August 15, 2019	
8	Last date of continuous evaluation (Phase I)	August 31, 2019	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2019	
10	Blood Donation Camp (NSS)	3 rd week of September, 2019	
11	Last date of continuous evaluation (Phase II)	September 30, 2019	
12	Last date of reporting on Mentoring (Phase I)	September 30, 2019	
13	Celebration of Gandhi Birthday (Workshop on Solar Lantern)	October 2, 2019	
14	One day Workshop/Seminar (Organized by CSE Dept)	4 th week of October, 2019	
15	Last date of continuous evaluation (Phase III)	October 31, 2019	
16	Entrepreneurship Awareness Programme	1 st week of November, 2019	
17	Last date of continuous evaluation (Phase IV)	November 30, 2019	
18	Practical Examinations & Viva-Voce	November 22 to 30, 2019	
19	Programme on AIDS Awareness (NSS)	December 1, 2019	
20	Theory Examinations	December 4 to 21, 2019	
21	Inter-Semester Break	December 22, 2019 to January 12, 2020	
22	Publication of Result	Results will be announced in the Univ. website in February 2020	
23	Last date of reporting on Mentoring (Phase II)	December 30, 2019	
During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya
Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Even Semester (2 nd , 4 th , 6 th & 8 th Semesters): January 2020 – June 2020		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 13, 2020
2	Annual Sports Meet	3 rd week of January, 2020
3	One day Workshop/Seminar (Organized by ECE Dept)	3 rd week of January, 2020
4	Enrolment of students (for every semester)	January 20, 2020 to January 31, 2020
5	Republic Day Celebration/ Alumni Meet	26 January, 2020 (Last Sunday of January)
6	Last date of continuous evaluation (Phase I)	January 31, 2020
7	Annual Cultural Festival	1 st week of February, 2020
8	Cricket Tournament	2 nd week of February, 2020
9	Badminton Tournament (For Girls)	3 rd week of February, 2020
10	Last date of continuous evaluation (Phase II)	February 28, 2020
11	TECHetc 2k20 (Annual Technical festival)	2 nd week of March, 2020
12	Swaccha Bharat Activity (NSS)	3 rd week of March, 2020
13	Football Tournament	3 rd week of March, 2020
14	Last date of continuous evaluation (Phase III)	March 31, 2020
15	Last date of reporting on Mentoring (Phase I)	March 31, 2020
16	One day Workshop/Seminar (Organized by EE Dept)	2 nd week of April, 2020
17	Last date of continuous evaluation (Phase IV)	April 30, 2020
18	Workshop/Seminar (In Collaboration With HETCAA)	1 st week of May, 2020
19	Practical Examinations & Viva-Voce	May 11 to May 16, 2020
20	Theory Examinations	May 22 to June 9, 2020
21	Inter-Semester Break (Summer)	June 10 to July 14, 2020
22	Publication of Result (Final Semester)	Results will be announced in the University website in July 2020
23	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2020
24	Last date of reporting on Mentoring (Phase II)	June 30, 2020
During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya

Principal

Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

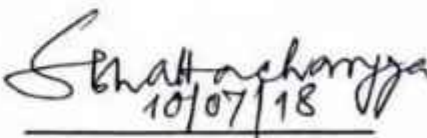
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2018 – December 2018			
Events		For Ensuring New Batch	For Continuing Batch
1	University-Registration process for ensuing newly admitted students process will be started on	June 11, 2018	N.A.
2	Admission activities (<i>for ensuing new students</i>) will be completed by	July 31, 2018	N.A.
3	Commencement of Academic Programme	August 1, 2018 Orientation Programme	July 13, 2018
4	Induction Programme for newly admitted students	August 1 to 21, 2018	N.A.
5	Registration activities (<i>for ensuing newly admitted students for the session 2018-19</i>) will be completed by	September 10, 2018	N.A.
7	Independence Day Celebration	August 15, 2018	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2018	
10	First Test Slot	September 14 to 20, 2018	
11	Annual Football Tournament	2 nd & 3 rd week of October, 2018	
12	Entrepreneurship Awareness Programme	1 st week of November, 2018	
13	Second Test Slot	November 14 to 20, 2018	
14	Practical Examinations & Viva-Voce	November 22 to 30, 2018	
15	Theory Examinations	December 4 to 21, 2018	
16	Inter Semester Break	December 24, 2018 to January 12, 2019	
17	Publication of Result	Results will be announced in the University website in February 2019.	
18	Last date of reporting on Mentoring (Phase I)	30 th September 2019	
19	Last date of reporting on Mentoring (Phase II)	30 th December 2019	
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.			
Separate Supplementary Examination for final year student will be held on September, 2018. Details will be available in the University website in due course.			
Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.			

* Dates of the events are subject to change in accordance with the situation.


10/07/18

Dr. S. Bhattacharyya

Principal, HETC



Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2019 – June 2019		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 14, 2019
2	Enrolment of students (for each semester)	January 20, 2020 to January 31, 2020
3	Annual Cultural Festival	4 th week of January, 2019
4	Annual Sports Meet	4 th week of January, 2019
5	Republic Day Celebration	January 26, 2019
6	Annual Alumni Meet	Last Sunday of January, 2019 (January 27, 2019)
7	Cricket Tournament	2 nd , 3 rd & 4 th Week of February, 2019
8	Badminton Tournament (For Girls)	1 st week of February, 2019
9	Panel Discussion by Magazine Committee	3 rd week of February, 2019
10	First Test Slot	2 nd week of March, 2019
11	TECHetc 2k19 (Annual Technical festival)	3 rd week of March, 2019
12	One Day Seminar by Student Chapter of IE(I)	4 th week of March, 2019
13	Seminar by INTERNSALA	1 st week of April, 2019
14	Second Test Slot	4 th week of April, 2019
15	First Improvement Test Slot	1 st week of May, 2019
16	Second Improvement Test Slot	2 nd week of May, 2019
17	Practical Examinations & Viva-Voce	May 15 to May 23, 2019
18	Theory Examinations	May 28 to June 17, 2019
19	Inter Semester Break (Summer)	June 18 to July 14, 2019
20	Publication of Result (Final Semester)	Results will be announced in the University website in July 2019
21	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2019

During Inter-Semester-Break (Summer), Practical Training (*where applicable*) may be conducted.

Separate Supplementary Examination for final year student will be held on September, 2018.

Details will be available in the University website in due course.

Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharya
18/07/18

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal

Hooghly Engineering & Technology College

CIVIL ENGINEERING DEPARTMENT

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

DEPARTMENTAL MISSION, VISION


Mission:

The mission of the department is as follows:

- To impart student-centric innovative education in research-conducive environment.
- To transform the students into world class civil engineers.
- To ensure that the graduates are employable, good entrepreneurs and competent scholars.
- To enable the students to be creative designers bringing excellence in the areas of construction technologies.
- To empower the students for global infrastructural development, maintaining sustainable environment and improving quality of life.

Vision:

The vision of the department is to create competent civil engineers who will contribute creatively in both public and private sectors, serve community, pursue higher studies and take up the challenges of cutting edge technologies.


Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.





Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

SEMESTER -III (2ND YR)

CE(BS)301	Biology (Biology for Engineers)	2L + 1T =	3 Credits
Module 1	<p>Introduction Bring out the fundamental differences between science and engineering by drawing a comparison between eye and camera, Bird flying and aircraft. Mention the most exciting aspect of biology as an independent scientific discipline. Why we need to study biology? Discuss how biological observations of 18th Century that lead to major discoveries. Examples from Brownian motion and the origin of thermodynamics by referring to the original observation of Robert Brown and Julius Mayer. These examples will highlight the fundamental importance of observations in any scientific inquiry.</p> <p>Purpose: To convey that Biology is as important a scientific discipline as Mathematics, Physics and Chemistry</p>	2L	3L
Module 2	<p>Classification Hierarchy of life forms at phenomenological level. A common thread weaves this hierarchy Classification. Discuss classification based on (a) cellularity- Unicellular or multicellular (b) ultrastructure- prokaryotes or eucaryotes, (c) energy and Carbon utilization -Autotrophs, heterotrophs, lithotrophs (d) Ammonia excretion - amonotelic, uricotelic, ureotelic (e) Habitat/aquatic or terrestrial (f) Molecular taxonomy- three major kingdoms of life. A given organism can come under different category based on classification. Model organisms for the study of biology come from different groups. E.coli, S.cerevisiae, D. Melanogaster, C. elegance, A. Thaliana, M. musculus</p> <p>Purpose: To convey that classification per se is not what biology is all about. The underlying criterion, such as morphological, biochemical or ecological be highlighted</p>	3L	
Module 3	<p>Genetics Mendel's laws, Concept of segregation and independent assortment. Concept of allele. Gene mapping. Gene interaction. Epistasis. Meiosis and Mitosis be taught as a part of genetics. Emphasis to be give not to the mechanics of cell division nor the phases but how genetic material passes from parent to offspring. Concepts of recessiveness and dominance. Concept of mapping of phenotype to genes. Discuss about the single gene disorders in humans. Discuss the concept of complementation using human genetics.</p> <p>Purpose: To convey that "Genetics is to biology what Newton's laws are to Physical Sciences"</p>	4L	
Module 4	<p>Biomolecules Molecules of life. In this context discuss monomeric units and polymeric structures. Discuss about sugars, starch and cellulose. Amino acids and proteins. Nucleotides and DNA/RNA. Two carbon units and lipids.</p> <p>Purpose: To convey that all forms of life has the same building blocks and yet the manifestations are as diverse as one can imagine</p>	4L	
Module 5	<p>Enzymes Enzymology. How to monitor enzyme catalyzed reactions. How does an enzyme catalyze reactions. Enzyme classification. Mechanism of enzyme action. Discuss at least two examples. Enzyme kinetics and kinetic parameters. Why should we know these parameters to understand biology? RNA catalysis.</p> <p>Purpose: To convey that without catalysis life would not have existed on earth</p>	4L	
Module 6	<p>Information Transfer Molecular bases of information transfer. DNA as a genetic material. Hierarchy of DNA structure from single stranded to double helix to nucleosomes. Concept of genetic code. Universality and degeneracy of genetic code. Define gene in terms of complementation and recombination.</p> <p>Purpose: The molecular basis of coding and decoding genetic information is universal</p>	4L	
Module 7	<p>Macromolecular analysis Proteins- structure and function. Hierarchy in protein structure. Primary secondary, tertiary and quaternary structure. Proteins as enzymes, transporters, receptors and structural elements.</p> <p>Purpose: How to analyses biological processes at the reductionistic level</p>	5L	
Module 8	<p>Metabolism Thermodynamics as applied to biological systems. Exothermic and endothermic versus endergonic and exergonic reactions. Concept of Keq and its relation to standard free energy. Spontaneity. ATP as an energy currency. This should include the breakdown of glucose to CO₂ + H₂O (Glycolysis and Krebs cycle) and synthesis of glucose from CO₂ and H₂O (Photosynthesis). Energy yielding and energy consuming reactions. Concept of Energy charge</p> <p>Purpose: The fundamental principles of energy transactions are the same in physical and biological world.</p>	4L	
Module 9	<p>Microbiology Concept of single celled organisms. Concept of species and strains. Identification and classification of microorganisms. Microscopy. Ecological aspects of single celled organisms. Sterilization and media compositions. Growth kinetics.</p>	3L	
Reference	1) Biology: A global approach: Campbell, N. A.; Reece, J. B.; Urry, Lisa; Cain, M. L. Wasserman, S. A.		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

<p>1) Minorsky, P. V.; Jackson, R. B. Pearson Education Ltd 2) Outlines of Biochemistry, Conn, E.E; Stampf, P.K; Bruening, G; Doi, R.H., John Wiley and Sons 3) Principles of Biochemistry (V Edition), By Nelson, D. L., and Cox, M. M.W.H. Freeman and Company 4) Molecular Genetics (Second edition), Stent, G. S.; and Calender, R.W.H. Freeman and company. Distributed by Satish Kumar Jain for CBS Publisher 5) Microbiology, Prescott, L.M J.P. Harley and C.A. Klein 1995. 2nd edition Wm. C. Brown Publishers 6) Biology of Engineers, McGraw Hill (ISBN: 978-11-21479-931)</p>	
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

CE(ES)301	Engineering Mechanics	3L + 1T =	4 Credits
Module 1	Introduction to Engineering Mechanics Force Systems. Basic concepts, Particle equilibrium in 2-D & 3-D; Rigid Body equilibrium; System of Forces, Coplanar Concurrent Forces, Components in Space – Resultant - Moment of Forces and its Application; Couples and Resultant of Force System; Equilibrium of System of Forces. Free body diagrams, Equations of Equilibrium of Coplanar Systems and Spatial Systems; Static Indeterminacy	6L	
Module 2	Friction Types of friction, Limiting friction, Laws of Friction, Static and Dynamic Friction, Motion of Bodies, wedge friction, screw jack & differential screw jack;	3L	
Module 3	Basic Structural Analysis Equilibrium in three dimensions; Method of Sections; Method of Joints; How to determine if a member is in tension or compression; Simple Trusses; Zero force members; Beams & types of beams; Frames & Machines;	4L	
Module 4	Centroid and Centre of Gravity Centroid of simple figures from first principle; centroid of composite sections; Centre of Gravity and its implications, Area moment of inertia-Definition, Moment of inertia of plane sections from first principles, Theorems of moment of inertia, Moment of inertia of standard sections and composite sections; Mass moment inertia of circular plate; Cylinder, Cone, Sphere, Hook.	5L	
Module 5	Virtual Work and Energy Method- Virtual displacements, principle of virtual work for particle and ideal system of rigid bodies, degrees of freedom, Active force diagram, systems with friction, mechanical efficiency, Conservative forces and potential energy (elastic and gravitational); energy equation for equilibrium. Applications of energy method for equilibrium. Stability of equilibrium.	4L	
Module 6	Review of particle dynamics- Rectilinear motion; Plane curvilinear motion (rectangular path, and polar coordinates); 3-D curvilinear motion; Relative and constrained motion; Newton's 2 nd law (rectangular, path, and polar coordinates); Work-kinetic energy- power, potential energy; Impulse-momentum (linear, angular); Impact (Direct and oblique).	4L	
Module 7	Introduction to Kinetics of Rigid Bodies Basic terms, general principles in dynamics, Types of motion, Instantaneous centre of rotation in plane motion and simple problems; D'Alembert's principle and its applications in plane motion and connected bodies; Work-energy principle and its application in plane motion of connected bodies; Kinetics of rigid body rotation.	5L	
Module 8	Mechanical Vibrations Basic terminology, free and forced vibrations, resonance and its effects; Degree of freedom, Derivation for frequency and amplitude of free vibrations without damping and single degree of freedom system, simple problems, types of pendulum, use of simple, compound and torsion pendulum.	5L	
Tutorials	From the above modules covering, To find the various forces and angles including resultants in various parts of wall crane, roof truss, pipes, etc.; To verify the line of polygon on various forces; To find coefficient of friction between various materials on inclined plane, Free body diagrams various systems including block-pulley; To verify the principle of moment in the disc apparatus; Helical block; To draw a load efficiency curve for a screw jack	6L	
Reference	1. D.S. Bedi (2018), Engineering Mechanics, Khanna Publishing House, 2019 2. Irving H. Shames (2006), Engineering Mechanics, 4th Edition, Prentice Hall 3. F. P. Beer and E. R. Johnston (2011), Vector Mechanics for Engineers, Vol 1- Statics, Vol II - Dynamics, 9th Ed. Tata McGraw Hill 4. R.C. Hibbler (2006), Engineering Mechanics: Principles of Statics and Dynamics, Pearson Press 5. Andy Rana and Rudra Pratap (2011), Introduction to Statics and Dynamics, Oxford University Press 6. Shames and Rao (2006), Engineering Mechanics, Pearson Education, 7. Hibler and Gupta (2010), Engineering Mechanics (Statics, Dynamics) by Pearson Education 8. Reddy Vijaykumar K, and K. Suresh Kumar (2010), Singu's Engineering Mechanics 9. Bansal R.K. (2010), A Text Book of Engineering Mechanics, Laxmi Publications 10. Khurmi R.S. (2010), Engineering Mechanics, S. Chind & Co. 11. Tayal A.K. (2010), Engineering Mechanics, Umesh Publications		

88

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

CE(ES)302	Energy Science & Engineering	1L + 1T =	2 Credits
Module 1	<p>Introduction to Energy Science Scientific principles and historical interpretation to place energy use in the context of pressing societal, environmental and climate issues; Introduction to energy systems and resources; Introduction to Energy, sustainability & the environment.</p> <p>Tutorials: Compile a World map showing Energy Reserves by source, Total Energy consumption, Per capita energy consumption and Carbon Footprint</p>		3L
Module 2	<p>Energy Sources Overview of energy systems, sources, transformations, efficiency, and storage; Fossil fuels (coal, oil, oil-bearing shale and sands, coal gasification) - past, present & future; Remedies & alternatives for fossil fuels - biomass, wind, solar, nuclear, wave, tidal and hydrogen; Sustainability and environmental trade-offs of different energy systems; possibilities for energy storage or regeneration (Ex. Pumped storage hydro power projects, superconductor-based energy storages, high efficiency batteries)</p> <p>Tutorials: Compile a Word Map showing Alternative Energy source usage; Compile a Process diagram for a Pumped Storage project; Collect details of a typical North Sea oil platform; Compile a map of India showing existing potential and utilized potential for hydro power; List the pros and cons for Thermal, hydro, nuclear and solar power projects.</p>		4L
Module 3	<p>Energy & Environment Energy efficiency and conservation; introduction to clean energy technologies and its importance in sustainable development; Carbon footprint, energy consumption and sustainability; introduction to the economics of energy; How the economic system determines production and consumption; linkages between economic and environmental outcomes; How future energy use can be influenced by economic, environmental, trade, and research policy.</p> <p>Tutorials: Study the functioning of an Electro Static Precipitator in a thermal power plant; study the uses of coarse and fine Fly Ash from thermal power plants; Compile the safety provisions and construction of a reactor containment building</p>		5L
Module 4	<p>Civil Engineering Projects connected with the Energy Sources Coal mining technologies, Oil exploration offshore platforms, Underground and under-sea oil pipelines, solar chimney project, wave energy caissons, coastal installations for tidal power, wind mill towers, hydropower stations above-ground and underground along with associated dams, tunnels, penstocks, etc. Nuclear reactor containment buildings and associated buildings, design and construction constraints and testing procedures for reactor containment buildings; Spent Nuclear fuel storage and disposal systems</p> <p>Tutorials: Compile a process diagram for a typical underground hydropower project; Collect details of a model solar chimney project; collect details of a wave energy project at Vishnupur; Collect details of the Kalpasar (Tidal energy) project.</p>		10L
Module 5	<p>Engineering for Energy conservation Concept of Green Building and Green Architecture; Green building concepts (Green building encompasses everything from the choice of building materials to where a building is located, how it is designed and operated); LEED ratings; Identification of energy related enterprises that represent the breadth of the industry and prioritizing these as candidates; Embodied energy analysis and use as a tool for measuring sustainability; Energy Audit of Facilities and optimization of energy consumption.</p> <p>Tutorials: Draw a typical geometrical orientation of a house in your area to avoid sun's radiation in the bed room in the evening; Identify typical examples of Indian buildings having various LEED ratings; List various building materials with their embodied energy content. Do an Energy Audit of your Departmental Building in the college</p>		8L
Reference	<ol style="list-style-type: none"> O.P. Gupta, Energy Technology, Khanna Book Publishing, (2019) Boyle, Godfrey (2004), Renewable Energy (2nd edition), Oxford University Press Boyle, Godfrey, Bob Everett, and Janet Ramage (Eds.) (2004), Energy Systems and Sustainability: Power for a Sustainable Future, Oxford University Press Chakrabarti, Energy Engineering & Management, PHI Schaeffer, John (2007), Real Goods Solar Living Sourcebook: The Complete Guide to Renewable Energy Technologies and Sustainable Living, Gaum Jean-Philippe, Zaccour, Georges (Eds.), (2005), Energy and Environment Set: Mathematics of Decision Making, Loulou, Richard, Waaub, XVIII. Ristinen, Robert A. Kraushaar, Jack J. AKraushaar, Jack P. Ristinen, Robert A. (2006) Energy and the Environment, 2nd Edition, John Wiley UNDP (2000), Energy and the Challenge of Sustainability, World Energy assessment E.H Thorndike (1976), Energy & Environment, A Primer for Scientists and Engineers, 		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

Addison-Wesley Publishing Company	
10. Related papers published in international journals	

CE(BS)302	Mathematics-III (Transform & Discrete Mathematics)	2L + 0T	2 Credits
(Prerequisite: 2c, 5b-d, 6b)			
Module 1	Transform Calculus-1 Polynomials – Orthogonal Polynomials – Lagrange's, Chebyshev Polynomials; Trigonometric Polynomials, Laplace Transform, Properties of Laplace Transform, Laplace transform of periodic functions, Finding inverse Laplace transform by different methods, convolution theorem. Evaluation of integrals by Laplace transform, solving ODEs and PDEs by Laplace Transform method.		6 L
Module 2	Transform Calculus-2 Fourier transforms, Z-transform and Wavelet transforms, properties, methods, inverses and their applications.		6 L
Module 3	Sets, relations and functions Basic operations on sets, Cartesian products, disjoint union (sum), and power sets. Different types of relations, their compositions and inverses. Different types of functions, their compositions and inverses.		4 L
Module 4	Propositional Logic Syntax and semantics, proof systems, satisfiability, validity, soundness, completeness, deduction theorem, etc. Decision problems of propositional logic. Introduction to first order logic and first order theory.		4 L
Module 5	Partially ordered sets Complete partial ordering, chain, lattice, complete, distributive, modular and complemented lattices, Boolean and pseudo Boolean lattices.		4 L
Module 6	Algebraic Structures Algebraic structures with one binary operation – semigroup, monoid and group. Cosets, Lagrange's theorem, normal subgroup, homomorphic subgroup. Congruence relation and quotient structures. Error correcting code. Algebraic structures with two binary operations- ring, integral domain, and field. Boolean algebra and boolean ring (Definitions and simple examples only).		4 L
Module 7	Introduction to Counting Basic counting techniques – inclusion and exclusion, pigeon-hole principle, permutation, combination, summations. Introduction to recurrence relation and generating functions.		3 L
Module 8	Introduction to Graphs Graphs and their basic properties – degree, path, cycle, subgraph, isomorphism, Eulerian and Hamiltonian walk, trees.		3 L
Reference	1. C. L. Liu, Elements of Discrete Mathematics, 2nd Ed., Tata McGraw-Hill, 2000. 2. R. C. Perner, Discrete Mathematics: Proof Techniques and Mathematical Structures, World Scientific, 1999. 3. R.L. Graham, D. E. Knuth, and O. Patashnik, Concrete Mathematics, 2nd Ed., Addison-Wesley, 1994. 4. K. H. Rosen, Discrete Mathematics and its Applications, 6th Ed., Tata McGraw-Hill, 2007. 5. J. L. Hein, Discrete Structures, Logic, and Computability, 3rd Ed., Jones and Bartlett, 2010. 6. N. Deo, Graph Theory, Prentice Hall of India, 1974. 7. S. Lipschutz and M. L. Lipson, Schaum's Outline of Theory and Problems of Discrete Mathematics, 2nd Ed., Tata McGraw-Hill, 1999. 8. J. P. Tremblay and R. P. Manohar, Discrete Mathematics with Applications to Computer Science, Tata McGraw-Hill, 1997. 9. Erwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006. 10. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2010. 11. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 35th Edition, 2000. 12. S.B. Singh, Discrete Structures, Khanna Publishing House, 2019. 13. Veeravijay T., Engineering Mathematics, Tata McGraw-Hill, New Delhi, 2008. 14. Chandrika Prasad, Advanced Engineering Mathematics, KPB.		

89

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

CE(HS)301	Humanities-I (Effective Technical Communication)	3L + 0T	3 Credits
Module 1	Information Design and Development- Different kinds of technical documents, Information development life cycle, Organization structures, factors affecting information and document design, Strategies for organization, Information design and writing for print and for online media.		4L
Module 2	Technical Writing, Grammar and Editing- Technical writing process, forms of discourse, Writing drafts and revising, Collaborative writing, creating indexes, technical writing style and language, Basics of grammar, study of advanced grammar, editing strategies to achieve appropriate technical style, Introduction to advanced technical communication, Usability, Human factors, Managing technical communication projects, time estimation, Single sourcing, Localization.		8L
Module 3	Self Development and Assessment- Self assessment, Awareness, Perception and Attitudes, Values and belief, Personal goal setting, career planning, Self-esteem, Managing Time, Personal memory, Rapid reading, Taking notes, Complex problem solving, Creativity		8L
Module 4	Communication and Technical Writing- Public speaking, Group discussion, Oral presentation, Interviews, Graphic presentation, Presentation aids, Personality Development, Writing reports, project proposals, brochures, newsletters, technical articles, manuals, official notes, business letters, memos, progress reports, minutes of meetings, event report.		8L
Module 5	Ethics- Business ethics, Etiquettes in social and office settings, Email etiquettes, Telephone Etiquettes, Engineering ethics, Managing time, Role and responsibility of engineer, Workculture in jobs, Personal memory, Rapid reading, Taking notes, Complex problem solving, Creativity.		8L
Reference	1. David F. Beer and David McMurrey, Guide to writing as an Engineer, John Wiley, New York, 2004 2. Diane Hacker, Pocket Style Manual, Bedford Publication, New York, 2003. (ISBN 0312406643) 3. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House 4. Shiv Khera, You Can Win, Macmillan Books, New York, 2003 5. Ramani Sharma, Technical Communications, Oxford Publication, London, 2004. 6. Dale Jungk, Applied Writing for Technicians, McGraw Hill, New York, 2004. (ISBN 07828357-4) 7. Sharma, R. and Mohan, K. Business Correspondence and Report Writing, TMH New Delhi 2002. 8. Xebec, Presentation Book, TMH New Delhi, 2000. (ISBN 0402213)		

88

Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

CE(HS)302	Introduction to Civil Engineering	1L + 1T=	2 Credits
Module 1	Basic Understanding: What is Civil Engineering, Infrastructure? Basics of Engineering and Civil Engineering; Broad disciplines of Civil Engineering; Importance of Civil Engineering; Possible scopes for a career Tutorials Develop a matrix of various disciplines and possibilities for engineers in each		1 L
Module 2	History of Civil engineering: Early constructions and developments over time; Ancient monuments & Modern marvels; Development of various materials of construction and methods of construction; Works of Eminent civil engineers Tutorials Identify 10 ancient monuments and ten modern marvels and list the uniqueness of each		1 L
Module 3	Overview of National Planning for Construction and Infrastructure Development: Position of construction industry vis-à-vis other industries; five-year plan outlays for construction; current budgets for infrastructure works Tutorials Develop a Strategic Plan for Civil Engineering works for next ten years based on past investments and identify one typical on-going mega project in each area		1 L
Module 4	Fundamentals of Architecture & Town Planning: Aesthetics in Civil Engineering; Examples of great architecture; fundamentals of architectural design & town planning; Building Systems (HVAC, Acoustics, Lighting, etc.); LEED ratings; Development of Smart cities Tutorials Identify ten best civil engineering projects with high aesthetic appeal with one possible factor for each; List down the possible systems required for a typical Smart City		1 L
Module 5	Fundamentals of Building Materials: Stones, bricks, mortars, Plaster, Reinforced & Prestressed Concrete, Construction Chemicals, Structural Steel, High Tensile Steel, Carbon Composites, Plastics in Construction; 3D printing; Recycling of Construction & Demolition wastes Tutorials Identify three top new materials and their potential in construction; Visit a Concrete Lab and make a report		2 L
Module 6	Basics of Construction Management & Contracts Management: Temporary Structures in Construction; Construction Methods for various types of Structures; Major Construction equipment; Automation & Robotics in Construction; Modern Project management Systems; Advent of Lean Construction; Importance of Contracts Management Tutorials Identify 5 typical construction methods and list their advantages/positive features		2 L
Module 7	Environmental Engineering & Sustainability: Water treatment systems; Effluent treatment systems; Solid waste management; Sustainability in Construction Tutorials Sustainability principles; Sustainable built environment; water treatment systems; and good practices of wastewater management; examples of Solid and hazardous waste management; Air pollution and control		2 L
Module 8	Geotechnical Engineering: Basics of soil mechanics, rock mechanics and geology; various types of foundations; basics of rock mechanics & tunnelling Tutorials List top five tunnel projects in India and their features; collect and study geotechnical investigation report of any one Metro Rail (underground) project; Visit a construction site and make a site visit report		2 L
Module 9	Hydraulics, Hydrology & Water Resources Engineering: Fundamentals of fluid flow; basics of water supply systems; Underground Structures; Underground Structures Multi-purpose reservoir projects Tutorials Identify three river interlinking projects and their features; visit a Hydraulics Lab and make a report		1 L
Module 10	Ocean Engineering: Basics of Wave and Current Systems; Sediment transport systems; Ports & Harbours and other marine structures Tutorials Identify 5 typical ports in India and list the structures available in them; Visit a related/similar facility, if possible in nearby place and make a report		1 L
Module 11	Power Plant Structures: Chimneys, Natural & Induced Drafting Cooling towers, coal handling		1 L

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	<p>systems, ash handling systems; nuclear containment structures; hydro power projects</p> <p>Tutorials Collect the typical layout for a large thermal powerplant and a large hydro power plant and identify all the structures and systems falling in them</p>	
Module 12	<p>Structural Engineering: Types of buildings; tall structures; various types of bridges; Water retaining structures; Other structural systems; Experimental Stress Analysis; Wind tunnel studies;</p> <p>Tutorials Identify 5 unique features for typical buildings, bridges, tall structures and large span structures; Visit Structures Testing Lab facility and make a report</p>	3 L
Module 13	<p>Surveying & Geomatics: Traditional surveying techniques; Total Stations; Development of Digital Terrain Models; GPS, LIDAR;</p> <p>Tutorials Collect visual representations prepared by a Total Station and LIDAR and compare; Study typical Google street map and Google Earth Map and study how each can facilitate the other</p>	1 L
Module 14	<p>Traffic & Transportation Engineering: Investments in transport infrastructure development in India for different modes of transport; Developments and challenges in integrated transport development in India: road, rail, port and harbour and airport sector; PPP in transport sector; Intelligent Transport Systems; Urban Public and Freight Transportation; Road Safety under heterogeneous traffic; Sustainable and resilient pavement materials, design, construction and management; Case studies and examples.</p> <p>Tutorials Investments in transport infrastructure; Developments and challenges; Intelligent Transport Systems; Smart Cities; Urban Transport; Road Safety; Sustainable and resilient highway design principles; Plan a sustainable transport system for a city; Identify key features/components in the planning and design of a green field highway/airport/port/railway and the cost-economics.</p>	1 L
Module 15	<p>Repairs & Rehabilitation of Structures: Basics of corrosion phenomena and other structural distress mechanisms; some simple systems of rehabilitation of structures; Non-Destructive testing systems; Use of carbon fibre wrapping and carbon composites in repairs.</p> <p>Tutorials Collect the history of a major rehabilitation project and list the interesting features</p>	1 L
Module 16	<p>Computational Methods, IT, IoT in Civil Engineering: Typical software used in Civil Engineering- Finite Element Method, Computational Fluid Dynamics, Computational Geotechnical Methods; highway design (MN); Building Information Modelling; Highlighting typical available software systems (SAP, STAAD, ABAQUS, MATLAB, ETAB, NASTRAN, NISA, MIKE 21, MODFLOW, REVIT, TEKLA, AUTOCAD, ...; GEOSTUDIO, EDUSHAKE, MSP, PRIMAVERA, ArcGIS, VisSIM, ...)</p> <p>Tutorials Visit an AutoCad lab and prepare a report; Identify ten interesting software systems used in Civil Engg and their key features</p>	2 L
Module 17	<p>Industrial lectures: Case studies of large civil engineering projects by industry professionals, covering comprehensive planning to commissioning.</p> <p>Tutorials For each case study list the interesting features</p>	2 L
Module 18	<p>Basics of Professionalism: Professional Ethics, Entrepreneurial possibilities in Civil Engineering, Possibilities for creative & innovative working, Technical writing Skills enhancement; Facilities Management; Quality & HSE Systems in Construction</p>	3 L
Tutorials	<p>List 5 cases of violation of professional ethics and list preventive measures; Identify 5 interesting projects and their positive features; Write 400 word reports on one ancient monument and a modern marvel of civil engineering</p>	5L
Reference	<ol style="list-style-type: none"> 1. Patil, B.S. (1974), Legal Aspects of Building and Engineering Contract 2. The National Building Code, BIS, (2017) 3. RERA Act, (2017) 4. Meena Rao (2006), Fundamental concepts in Law of Contract, 3rd Edn, Professional Office 5. Chandramani, Neelima (2000), The Law of Contract: An Outline, 2nd Edn, Avinash Publications Mumbai 6. Avtar Singh (2002), Law of Contract, Eastern Book Co. 7. Dutt (1994), Indian Contract Act, Eastern Law House 8. Anson W.R. (1979), Law of Contract, Oxford University Press 9. Kovara G.K. (2005), The Arbitration & Conciliation of Law in India with case law on UNCITRAL Model Law on Arbitration, Indian Council of Arbitration 10. Avtar Singh (2005), Law of Arbitration and Conciliation, Eastern Book Co. 11. Wadhwa (2004), Intellectual Property Rights, Universal Law Publishing Co. 12. P. S. Narayan (2000), Intellectual Property Rights, Gupta Law Agency 	

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	13. T. Ramappa (2010). Intellectual Property Rights Law in India. Asia Law House. 14. Bare text (2005), Right to Information Act 15. O.P. Malhotra, Law of Industrial Disputes, N.M. Tripathi Publishers 16. K.M. Desai (1946), The Industrial Employment (Standing Orders) Act 17. Rustamji R.F., Introduction to the Law of Industrial Disputes, Asia Publishing House 18. Yee, Charles & Skirmore, Martin (2003) Professional Ethics in the Construction Industry, Engineering Construction and Architectural management, Vol.10, Iss. 2, pp-117-127. MCH UP Ltd 19. American Society of Civil Engineers (2011) ASCE Code of Ethics – Principles Study and Application 20. Ethics in Engineering – M.W.Martin & R. Schinzinger, McGraw-Hill 21. Engineering Ethics, National Institute for Engineering Ethics, USA 22. www.ieewda.org 23. Engineering ethics: concepts and cases – C. E. Harris, M.S. Prichard, M.J.Rabins 24. Resisting Bureaucratic Corruption: Alacrity Housing Chennai (Teaching Case Study) – S. Ramakrishna Velamuri – CEIBS 25. CONSTRUCTION CONTRACTS, http://www.normanstark.com/contract.htm 26. Internet and Business Handbook, Chap 4, CONTRACTS LAW, http://www.laderapress.com/laderapress/contracts/law1.html 27. Contract & Agreements - http://www.lco.ac.ir/law/English/agreements/General/Contract%20Law/C.htm 28. Contracts, http://206.127.69.152/jgrich/cj/211/ch7.ppt 29. Business & Personal Law, Chapter 7 “How Contracts Arise”, http://yocapohigh.com/schrostenen/lawweb/lawch7.ppt 30. Types of Contracts, http://cmsu2.cmsu.edu/public/classes/rshv/meaners.com.ppt 31. IV. TYPES OF CONTRACTS AND IMPORTANT PROVISIONS, http://www.worldbank.org/html/opr/consult/guidats/types.html 32. Contract Types/Pricing Arrangements Guideline-1.4.G (11/04/02), http://www.sandia.gov/policy/14g.pdf	
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

LABORATORY/ SESSIONAL

CE(ES)391	Basic Electronics	1L + 2P	2 Credits
Theory			
Module 1	Diodes and Applications covering, Semiconductor Diode - Ideal versus Practical, Resistance Levels, Diode Equivalent Circuits, Load Line Analysis; Diode as a Switch, Diode as a Rectifier, Half Wave and Full Wave Rectifiers with and without Filters; Breakdown Mechanisms, Zener Diode – Operation and Applications, Opto-Electronic Devices – LEDs, Photo Diode and Applications, Silicon Controlled Rectifier (SCR) – Operation, Construction, Characteristics, Ratings, Applications.		4L
Module 2	Transistor Characteristics covering, Bipolar Junction Transistor (BJT) – Construction, Operation, Amplifying Action, Common Base, Common Emitter and Common Collector Configurations, Operating Point, Voltage Divider Bias Configuration; Field Effect Transistor (FET) – Construction, Characteristics of Junction FET, Depletion and Enhancement type Metal Oxide Semiconductor (MOS) FETs, Introduction to CMOS circuits.		4L
Module 3	Transistor Amplifiers and Oscillators covering, Classification, Small Signal Amplifiers – Basic Features, Common Emitter Amplifier, Coupling and Bypass Capacitors, Distortion, AC Equivalent Circuit; Feedback Amplifiers – Principle, Advantages of Negative Feedback, Topologies, Current Series and Voltage Series Feedback Amplifiers; Oscillators – Classification, RC Phase Shift, Wien Bridge, High Frequency LC and Non-Sinusoidal type Oscillators.		4L
Module 4	Operational Amplifiers and Applications covering, Introduction to Op-Amp, Differential Amplifier Configurations, CMRR, PSRR, Slew Rate, Block Diagram, Pin Configuration of 741 Op-Amp, Characteristics of Ideal OpAmp, Concept of Virtual Ground.		4L
Practical			
Module 1	Laboratory Sessions covering, Identification, Specifications, Testing of R, L, C Components (Colour Codes), Potentiometers, Switches (SPDT, DPDT and DIP), Bread Boards and Printed Circuit Boards (PCBs); Identification, Specifications, Testing of Active Devices – Diodes, BJTs, JFETs, MOSFETs, Power Transistors, SCRs and LEDs.		
Module 2	Study and Operation of Digital Multi Meter, Function Signal Generator, Regulated Power Supply (RPS), Cathode Ray Oscilloscope; Amplitude, Phase and Frequency of Sinusoidal Signals using Lissajous Patterns on CRO; (CRO).		
Module 3	Experimental Verification of PN Junction Diode Characteristics in A) Forward Bias B) Reverse Bias, Zener Diode Characteristics and Zener Diode as Voltage Regulator, Input and Output Characteristics of BJT in Common Emitter (CE) Configuration, Drain and Transfer Characteristics of JFET in Common Source (CS) Configuration.		
Module 4	Study of Half Wave and Full Wave Rectification, Regulation with Filters, Gain and Bandwidth of BJT Common Emitter (CE) Amplifier, Gain and Bandwidth of JFET Common		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	Source(CS) Amplifier, Gain and Bandwidth of BJT Current Series and Voltage Series Feedback Amplifiers, Oscillation Frequency of BJT based RC Phase Shift, Hartley and Colpitts Oscillators.	
Module 5	Op-Amp Applications – Adder, Subtractor, Voltage Follower and Comparator; Op-Amp Applications – Differentiator and Integrator, Square Wave and Triangular Wave Generation, Applications of 555 Timer – Astable and Monostable Multivibrators.	
Module 6	Truth Tables and Functionality of Logic Gates – NOT, OR, AND, NOR, NAND, XOR and XNOR, Integrated Circuits (ICs); Truth Tables and Functionality of Flip-Flops – SR, JK and D Flip-Flop ICs; Serial-In-Serial-Out and Serial-In-Parallel-Out Shift operations using 4-bit/8-bit Shift Register ICs; Functionality of Up-Down / Decade Counter ICs.	
Reference	1. David A. Bell (2003), Laboratory Manual for Electronic Devices and Circuits, Prentice Hall, India 2. Santiram Kal (2002), Basic Electronics- Devices, Circuits and IT Fundamentals, Prentice Hall, India 3. Thomas L. Floyd and R. P. Jain (2009), Digital Fundamentals by Pearson Education, 4. Paul B. Zbar, A.P. Malvino and M.A. Miller (2009), Basic Electronics – A Text-Lab Manual, TMH 5. R.T. Paynter (2009), Introductory Electronic Devices & Circuits, Conventional Flow Version, Pearson	

CE(ES)392	Computer-aided Civil Engineering Drawing	1L + 2P	2 Credits
Module 1	INTRODUCTION Introduction to concept of drawings, Interpretation of typical drawings, Planning drawings to show information concisely and comprehensively, optimal layout of drawings and Scales; Introduction to computer aided drawing, co-ordinate systems, reference planes, Commands, Initial settings, Drawing aids, Drawing basic entities, Modify commands, Layers, Text and Dimensioning, Blocks, Drawing presentation norms and standards.		2 L
Module 2	SYMBOLS AND SIGN CONVENTIONS Materials, Architectural, Structural, Electrical and Plumbing symbols, Rebar drawings and structural steel fabrication and connections drawings symbols, welding symbols; dimensioning standards		2 L
Module 3	MASONRY BONDS English Bond and Flemish Bond – Corner wall and Cross walls -One brick wall and one and half brick wall		1 L
Module 4	BUILDING DRAWING Terms, Elements of planning building drawing; Methods of making line drawing and detailed drawing; Site plan, floor plan, elevation and section drawing of small residential buildings; Foundation plan; Roof drainage plans; Depicting joinery, standard fittings & fixtures, finishes; Use of Notes to improve clarity.		5 L
Module 5	PICTORIAL VIEW Principles of isometrics and perspective drawing; Perspective view of building; Fundamentals of Building Information Modelling (BIM)		2 L
Drawings			
1	Buildings with load bearing walls including details of doors and windows.		6P
2	Taking standard drawings of a typical two storeyed building including all MEP, joinery, rebars, finishing and other details and writing out a description of the facility in about 500-700 words.		4P
3	RCC framed structures		6P
4	Reinforcement drawings for typical slabs, beams, columns and spread footings		6P
5	Industrial buildings - North light roof structures – Trusses		4P
6	Perspective view of one and two storey buildings		4P
Reference	1. Subhash C. Sharma & Gurcharan Singh (2005), "Civil Engineering Drawing", Standard Publishers 2. Pradeep Jain & A.P. Gautam, Engineering Graphics & Design, Khanna Publishing House (2019) 3. Ajeet Singh (2002), "Working with AUTOCAD 2000 with updates on AUTOCAD 2007", Tata- Mc Graw-Hill Company Limited, New Delhi 4. Sham Tickoo Swarna D (2009), "AUTOCAD for Engineers and Designers", Pearson Education, 5. Venugopal (2007), "Engineering Drawing and Graphics + AUTOCAD", New Age International Pvt. Ltd., 6. Shah, Engineering Drawings and Computers, Pearson 7. Balagopal and Prabhu (1987), "Building Drawing and Detailing", Spades publishing KDR building, Calicut. 8. (Corresponding set of CAD Software Theory and User Manuals.		



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	9. Malik R.S., Meo, G.S. (2009) Civil Engineering Drawing, Computech Publication Ltd New Asim.	
	10. Sikka, V. B. (2013), A Course in Civil Engineering Drawing, S.K.Kataria & Sons.	

CE(ES)393	Life Science	1L + 2P	2 Credits
Module 1A	Plant Physiology Transpiration; Mineral nutrition		3L
Module 1B	Ecology Ecosystems- Components, types, flow of matter and energy in an ecosystem; Community ecology- Characteristics, frequency, life forms, and biological spectrum; Ecosystem structure- Biotic and a-biotic factors, food chain, food web, ecological pyramids;		3L
Module 2A	Population Dynamics Population ecology- Population characteristics, ecotypes; Population genetics- Concept of gene pool and genetic diversity in populations, polymorphism and heterogeneity;		3L
Module 2B	Environmental Management Principles, Perspectives, concerns and management strategies, Policies and legal aspects- Environment Protection Acts and modification, International Treaties, Environmental Impact Assessment- Case studies (International Airport, thermal power plant);		3L
Module 3A	Molecular Genetics Structures of DNA and RNA; Concept of Gene, Generegulation, e.g., Operon concept		3L
Module 3B	Biotechnology Basic concepts; Totipotency and Cell manipulation; Plant & Animal tissue culture- Methods and uses in agriculture, medicine and health; Recombinant DNATechnology- Techniques and applications		3L
Module 4	Biostatistics Introduction to Biostatistics- Terms used, types of data; Measures of Central Tendencies- Mean, Median, Mode, Normal and Skewed distributions; Analysis of Data- Hypothesis testing and ANNOVA (single factor)		4L
Module 5	Laboratory & Fieldwork Sessions Comparison of stomatal index in different plants; Study of mineral crystals in plants; Determination of diversity indices in plant communities; To construct ecological pyramids of population sizes in an ecosystem; Determination of Importance Value Index of a species in a plant community; Seminar (with PPTs) on EIA of a Mega-Project (e.g., Airport, Thermal/Nuclear Power Plant/ Oil spill scenario); Preparation and extraction of genomic DNA and determination of yield by UV absorbance; Isolation of Plasmid DNA and its separation by Gel Electrophoresis; Data analysis using Bio-statistical tools;		15P
References	1. Biology: A global approach; Campbell, N. A., Reece, J. B.; Urry, Lisa; Cain, M. L., Wasserman, S. A.; Minorsky, P. V.; Jackson, R. B. Pearson Education Ltd 2. Outlines of Biochemistry, Com, E.E; Stamp, P.K; Bruening, G; Doi, R.H. John Wiley and Sons 3. Principles of Biochemistry (V Edition), By Nelson, D. L.; and Cox, M. M.W.H. Freeman and Company 4. Molecular Genetics (Second edition), Stent, G. S.; and Calender, R. W.H. Freeman and company. Distributed by Satish Kumar Jain for CBS Publisher 5. Microbiology, Prescott, L.M, J.P. Harley and C.A. Klein. 1995. 2nd edition. Wm, C. Brown Publishers 6. Life Sciences, Vol. I & II, Pathfinder Publications		


Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpaati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

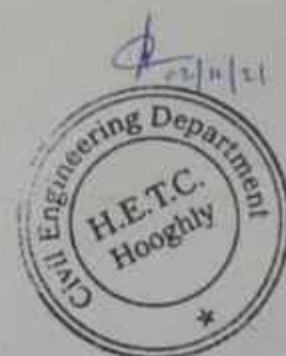
Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

Semester IV [Second year]

CE(ES)-401	Introduction to Fluid Mechanics	2L + 0T	2 Credits	
Course Outcome	On successful completion of this course, student should be able to: <ol style="list-style-type: none"> define basic terms, values and laws in the areas of fluids properties, statics, kinematics and dynamics of fluids, and hydraulic design of pipe systems; describe methods of implementing fluid mechanics laws and phenomena while analyzing the operational parameters of hydraulic problems; practically apply tables and diagrams, and equations that define the associated laws; calculate and optimize operational parameters of hydraulic problems; explain the correlation between different operational parameters; select engineering approach to problem solving based on the acquired physics and mathematical knowledge. 			
Prerequisite	Introduction to Civil Engineering, Physics.			
Module 1	Properties of fluids: Fluid – definition, distinction between solid and fluid - Units and dimensions - Properties of fluids - density, specific weight, specific volume, specific gravity, viscosity, compressibility, vapour pressure, capillarity and surface tension.		3L	
Module 2	Fluid statics: Pressure at a point, basic equation for pressure field, pressure variation in a fluid at rest- incompressible fluid, compressible fluid, absolute pressure, gauge pressure, pressure measurements by manometers – general, inclined, inverted, micro-manometer, pressure and forces on submerged planes and curved surfaces, centre of pressure, buoyancy and floatation, Stability of submerged and floating bodies, metacentric height.		4L	
Module 3:	Fluid Kinematics: The velocity field, Eulerian and Lagrangian flow descriptions, concepts of - one-, two- and three-dimensional flows, steady and unsteady flows, streamlines, streaklines, pathlines; The acceleration field; Control volume and system representation, Continuity Equation, Momentum Equation, Moment-of-momentum equation, applications to pipe bends.		6L	
Module 4:	Fluid Dynamics: Application of Newton's Law along a streamline, Bernoulli Equation, Kinetic energy head, potential energy head and pressure energy head, total energy head, Pitot tube, Examples of use of Bernoulli Equation, measurement of flows - venturimeter, energy line and hydraulic grade line.		7L	
Module 5:	Dimensional Analysis: Buckingham Pi Theorem, determination of Pi terms, correlation of experimental data, examples.		3L	
Module 6	Flow through Pipes: Laminar flow, Reynolds number, critical velocity, turbulent flow, shear stress at pipe wall, velocity distribution, loss of head for laminar flow, Darcy-Weisbach Formula, friction factor, contraction and expansion head losses, Concept of boundary layer and its growth.		7L	
Module 7	Pipeline Systems: Pipes in series, pipes in parallel, equivalent pipes, branching pipes, pipe networks.		7L	
Module 8	Hydraulic Machines: Basics of hydraulic machines; specific speed of pumps and turbines.		3L	
Reference	Sl.	Book Name	Author	Publishing House
	1	A Textbook of Fluid Mechanics	R. K. Bansal	Laxmi Publications (P) Ltd., New Delhi.
	2	Hydraulics & Fluid Mechanics Including Hydraulics Machines	P. N. Modi and S. M. Seth	Standard Book House, New Delhi, 2017.
	3	Introduction to Fluid Mechanics and Fluid Machines	S. K. Som, G. Biswas and S. Chakraborty	Tata McGraw Hill Education Private Limited, New Delhi, 2012.
	4	Fluid Mechanics	F. M. White	Tata McGraw Hill Education India Private Limited, 2017.
	5	Fluid Mechanics and Hydraulic Machines	K. Subramanya	McGraw Hill Education (India)

88

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpaal, Hooghly.



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

CE(ES)402	Introduction to Solid Mechanics	2L + 0T	2 Credits	
Course Outcome	After going through this course, the students will be able to: <ol style="list-style-type: none"> To identify the equilibrium conditions and elastic properties of axially loaded bars through stress-strain and force-displacement curves. To identify the principal plane and principal stresses through Mohr circle. To calculate the hoop and meridional stresses in thin cylinders and spherical shells. To identify different degrees of freedoms for support conditions like hinge, roller and fixed constraints. To calculate the bending moment, shear force and deflection of beams for uniformly distributed, concentrated, linearly varying and external concentrated moment. To calculate the member forces in a plane truss using Method of Joint and Method of Section. To identify torsional moment and twist on a circular shaft and calculate the shear stress. To know the concepts of strain energy due to axial load, bending and shear. To calculate the buckling load of columns using Euler's theory for different support constraints. 			
Prerequisite	Engineering Mechanics (CE(ES)301), Basic Calculus			
Module 1	Review of Basic Concepts of Stress and Strain: Normal stress, Shear stress, Bearing stress, Normal strain, Shearing strain; Hooke's law; Poisson's ratio; Stress-strain diagram of ductile and brittle materials; Elastic limit; Ultimate stress; Yielding; Modulus of elasticity; Factor of safety. Beam Statics: Support reactions, concepts of redundancy, axial force, shear force and bending moment diagrams for concentrated, uniformly distributed, linearly varying load, concentrated moments in simply supported beams, cantilever and overhanging beams		6L	
Module 2	Symmetric Beam Bending: Basic kinematic assumption, moment of inertia, elastic flexure formulae and its application, Bending and shear stress for regular sections, shear centre		3L	
Module 3:	Deflection of statically determinate beams: Fundamental concepts: Elastic curve, moment Curvature relationship, governing differential equation, boundary conditions; Direct integration solution		4L	
Module 4:	Analysis of determinate plane trusses: Concepts of redundancy, Analysis by method of joints, method of sections		4L	
Module 5:	Two Dimensional Stress Problems: Principal stresses, maximum shear stresses, Mohr's circle of stresses, construction of Mohr's circle		3L	
Module 6	Introduction to thin cylindrical & spherical shells: Hoop stress and meridional - stress and volumetric changes		3L	
Module 7	Torsion: Pure torsion, torsion of circular solid shaft and hollow shafts, torsional equation, torsional rigidity, closed coil helical springs		4L	
Module 8	Columns: Fundamentals, criteria for stability in equilibrium, column buckling theory, Euler's load for columns with different end conditions, limitations of Euler's theory - problems, eccentric load and secant formulae.		3L	
Reference	Sl.	Book Name	Author	Publishing House
	1	Elements of Strength of Material	S. P. Timoshenko and D. H. Young	EWP Pvt. Ltd
	2	Mechanics of Material	R. C. Hibbeler	Pearson
	3	Mechanics of Material	Beer, Jhonston, DeWolf, Mazurek	McGrawHill Education
	4	Strength of Materials	R. Subramanian	OXFORD University Press
	5	Strength of Materials	S S Bhavikatti	Vikas Publishing House Ltd
	6	Strength of Materials	R.K. Bansal	Laxmi Publication
	7	Fundamentals of Strength of Material	Nag & Chandra	WIE

✍

Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

CE(PC)401	Soil Mechanics – I	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Classify soil as per grain size distribution curve and understand the index properties of soil. 2. Apply the concept of total stress, effective stress and pore water pressure for solving geotechnical problems. 3. Assess the permeability of different types of soil and solve flow problems. 4. Estimate the seepage loss, factor of safety against piping failure using flow net related to any hydraulic structure. 5. Determine vertical stress on a horizontal plane within a soil mass subjected to different types of loading on the ground surface and also the maximum stressed zone or isobar below a loaded area. 6. Apply the concept of shear strength to analyze different geotechnical problems and determine the shear strength parameters from lab and field tests.		
Prerequisite	Engineering Mechanics		
Module 1	PHYSICAL PROPERTIES OF SOILS: Soil Formation Introduction, Origin of Soil, Formation and Types of soil, Formative classification, Typical Indian Soil, Some Special Types of Soils, Structure and Composition, Clay Mineralogy. Soil as a Three Phase System Basic Definitions, Weight - Volume Relationship, Measurement of Physical Properties of Soil: Insitu Density, Moisture Content, Specific Gravity, Relative density, Functional Relationships. Index Properties of Soil Introduction, Particle Size Distribution, Mechanical Analysis - Sieve Analysis, Sedimentation Analysis - Hydrometer and Pipette Methods, Consistency of Soil - Atterberg Limits, Different Indices, Discussion on Limits and Indices. Classification of Soil Classification by Structure, Particle Size Classification, Textural System, PRA System (AASHTO Classification), Unified Classification System, As per IS Code Recommendation, Field Identification of Soil, Classification by Casagrande's Plasticity Chart.	10L + 5T	
Module 2	Soil Hydraulics Modes of Occurrence of Water in Soil - Free Water, Held Water, Structural Water, Capillary Water, Gravitational Water, Adsorbed Water, Pore Water, Pore Water Pressure, Effective Pressure, Total Pressure, Effective Pressure under Different Conditions and in Different Cases of Flow through Soils, Critical Hydraulic Gradient, Quick Sand Condition.	3L + 1T	
Module 3:	Permeability Introduction, Darcy's Law, Coefficient of Permeability, Discharge Velocity, Seepage Velocity, Factors Affecting Permeability, Determination of Coefficient of Permeability - Constant Head and Falling Head Methods, Permeability of Stratified Soil Deposits, Field Determination of Permeability - Unconfined and Confined Aquifers.	3L + 1T	
Module 4:	Seepage Analysis Introduction, Seepage, Seepage Pressure, Two Dimensional Flow; Laplace's Equations, Continuity equation, Flow Nets, Flow through Earthen Dam, Estimation of Seepage, Construction, Properties and Use of Flow Nets, Piping and Heaving, Uplift due to Seepage, Design of Fillers.	3L + 1T	
Module 5:	STRESS DISTRIBUTION IN SOILS Introduction, Geostatic Stress, Boussinesq's Equation, Determination of Stress due to Point Load, Vertical Stress Distribution on a Horizontal Plane, Isobar and Pressure Bulb, Vertical Stress Distribution on a Vertical Plane, Vertical Stress under Uniformly Loaded Circular Area, Vertical Stress Beneath a Corner of a Rectangular Area, Equivalent Point Load Method, 2:1 Method, Newmark's Influence Chart, Vertical Stress Beneath Line and Strip Loads, Westergaard Analysis, Comparison of Boussinesq and Westergaard Theories, Contact Pressure.	4L + 3T	
Module 6	SHEARING STRENGTH OF SOILS Shear Strength of Soil Introduction, Basic Concept of Shear Resistance and Shear Strength of Soil, Mohr Circle of Stress, Sign Conventions, Mohr - Coulomb Theory, Relationship between Principal Stresses and Cohesion, Determination of Shear Parameters of Soil Stress Controlled and Strain Controlled Tests, Laboratory Determination of Soil Shear Parameters- Direct Shear Test, Triaxial Test, Classification of Shear Tests Based on Drainage Conditions, Unconfined Compression Test, Vane Shear Test as per Relevant IS Codes, Stress-Strain Relationship of Clays and Sands, Concept of Critical Void Ratio, Skempton's Pore Pressure Parameters, Sensitivity and Thixotropy of clay, Concept of Stress	5L + 3T	

02/11/21



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

Reference	path.			
	Sl.	Book Name	Author	Publishing House
	1	Textbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series)	V.N.S. Murthy	CBS Publishers
	2	Soil Mechanics and Foundations	Punmia, B.C. and Jain A. K.	Laxmi Publications (P) Ltd
	3	Basic and Applied Soil Mechanics	Gopal Ranjan & A.S.R. Rao	New Age International Pvt.Ltd. Publishers
	4	Principles of Geotechnical Engineering	B.M. Das	Thomson Brooks / Cole

CE(PC)402	Environmental Engineering – I	2L + 1T	3 Credits	
Course Outcome	After going through this course, the students will be able to: 1. Define the basic concepts and terminologies of water supply engineering and solid waste management 2. Describe different surface and groundwater sources; and composition and characteristics of municipal solid waste 3. Apply the methods of quantifying water requirement and MSW generation 4. Solve different mathematical problems regarding different components of water supply systems, distribution networks and MSW management systems 5. Compare between different water samples based on their physical, chemical and biological characteristics 6. Design different unit processes and operations involved in water treatment and MSW management			
Prerequisite	Class-XII level knowledge of Physics, Chemistry, Mathematics, Biology and Environmental Science; Undergraduate level knowledge of Engineering Mechanics, Fluid Mechanics and Hydraulics			
Module 1	Water Requirement Estimation Water Demand: Different types of water demand; Per capita demand; Variations in demand; Factors affecting water demand Future Demand Forecasting: Design period; Population forecasting methods	2L + 2T		
Module 2	Sources of Water Surface Water Sources; Ground Water Sources	4L + 2T		
Module 3:	Water Quality Water Quality Characteristics: Physical, Chemical, and Biological parameters Drinking Water Standards: BIS; WHO; USEPA Water Quality Indices: Basic concept and examples	4L + 2T		
Module 4:	Water Treatment Typical flow chart for surface and groundwater treatments. Unit Operation and Processes: Aeration, Plain Sedimentation, Sedimentation with Coagulation and Flocculation, Water Softening, Filtration, Disinfection	9L + 3T		
Module 5:	Water Conveyance and Distribution Hydraulic design of pressure pipes; Analysis of distribution network; Storage and distribution reservoirs; Capacity of reservoirs.	4L + 3T		
Module 6	Characteristics of Municipal Solid Waste (MSW) Composition and characteristics of MSW	1L + 1T		
Module 7	Handling of MSW Generation, collection and transportation of MSW	1L + 1T		
Module 8	Engineered Systems for MSW Management Methods of reuse/ recycle, energy recovery, treatment and disposal of MSW	3L + 1T		
Reference	Sl.	Book Name	Author	Publishing House
	1	Environmental Engineering, Volume-1 and Volume-2	Garg, S.K.	Khanna Publishers
	2	Environmental Engineering	Peavy, H.S, Rowe, D.R, Tchobanoglous, G	Tata McGraw Hill Indian Edition
	3	Introduction to Environmental	Masters, G.M., Ela,	Prentice Hall / Pearson.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	Engineering and Science	W.P.	
4	Manual on Water Supply and Treatment	CPHEEO	Govt. of India
5	Manual on Municipal Solid Waste Management	CPHEEO	Govt. of India

CE(PC)403	Surveying & Geomatics	2L + 1T	3 Credits	
Course Outcome	Upon completing the course, the students will be able to: 1. Define and state the scope of surveying and geomatics in civil engineering 2. Understand the basic principles of surveying and geomatics engineering 3. Apply the different methods of surveying and geomatics to measure the features of interest 4. Analyze the traditional and advanced methods of surveying 5. Evaluate the different techniques of surveying and geomatics in solving real world problems. 6. Design and construct solutions for real world problems related to surveying and geomatics.			
Prerequisite	Knowledge of Mathematics and Physics in Class-XII			
Module 1	Principles of Surveying: Introduction; Principles and classification of surveying; Concept of scales; Survey stations and lines – ranging and bearing; Chain surveying – Concept, Instruments, numerical problems on errors due to incorrect chain; Plane table surveying – Advantages, disadvantages, parts, methods; Elements of simple and compound curves.		4L + 2T	
Module 2	Levelling: Levelling – Principles, Precautions and Difficulties, Differential levelling, – Concepts and numerical problems; Contouring.		3L + 1T	
Module 3:	Triangulation and Trilateration: Theodolite survey – Instruments, measurements of horizontal and vertical angles; Triangulation – Network, signals, numerical examples; Baseline measurement – site selection, measuring equipments, numerical problems on baseline corrections; Trigonometric levelling – Axis signal correction.		4L + 2T	
Module 4:	Advanced Surveying: Principle of Electronic Distance Measurement (EDM); Types of EDM instruments; Distomats; Total Station – Parts, advantages, applications; field procedure and errors; Global Positioning System (GPS) – Concept, applications, segments, location determination, errors; Principle of Differential GPS, Terrestrial laser scanner.		3L + 2T	
Module 5:	Photogrammetric Surveying: Concept; Classification of photogrammetric surveying – terrestrial, aerial and satellite; scale of a vertical photograph; relief displacement and object height determination; Stereoscopic vision – depth perception, parallax angle, stereoscopes; Object height determination using parallax; Parallax bar; Flight planning – Concept and numerical problems; Photo mosaic; Orthophotography; Stereoscopic plotting instruments.		4L + 2T	
Module 6	Remote Sensing: Energy sources and radiation principles; Concept of Electromagnetic Spectrum; Energy interactions in the atmosphere and earth surface features; Data acquisition and interpretation; Platforms and sensors – Geostationary and sun-synchronous orbits, pushbroom and whiskbroom scanning system, characteristics of IRS, Landsat and Sentinel sensors; Visual image interpretation		3L + 3T	
Module 7	Digital Image Processing: Concept; Image rectification and restoration; Image enhancement; Image classification; Accuracy assessment and post classification smoothing.		4L + 2T	
Module 8	Applications of Geomatics in Civil Engineering 3D mapping; Earthquake and landslides; Runoff modelling; Groundwater targeting; Flood risk assessment; Urban planning; Highway and transportation		3L + 1T	
Reference	Sl.	Book Name	Author	Publishing House
	1	Surveying & Levelling	N. N. Basak	McGraw Hill Education (India) Private Limited
	2	Surveying – Vol. I, II & III	B. C. Punmia Ashok Kumar Jain Arun Kumar Jain	Laxmi Publications (P) Ltd.
	3	Surveying – Vol. I & II	S. K. Duggal	McGraw Hill Education (India) Private Limited
	4	Surveying & Levelling – Part I & II	T. P. Kanetkar S. V. Kulkarni	Pune Vidyarthi Griha Prakashan
5	Remote Sensing and Image	Thomas M. Lillesand	Wiley India Education	



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	Interpretation	Ralph W. Kiefer Jonathan W. Chipman	
6	Remote Sensing and GIS	Basudeb Bhatta	Oxford University Press
7	Applications of Geomatics in Civil Engineering	J. K. Ghosh I. de Silva (Eds.)	Springer

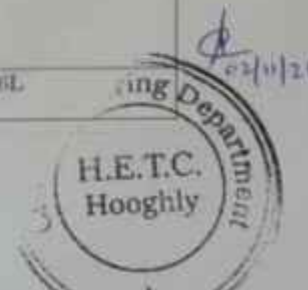
CE(PC)404	Concrete Technology	2L + 1T	3 Credits	
Course Outcome	On completion of the course, the students will be able to: 1. test all the required properties of concrete materials as per IS code. 2. compute the properties of concrete at fresh and hardened state. 3. design the concrete mix as per latest IS code methods. 4. ensure quality control while testing/ sampling. 5. Design the special type of concrete for specific application purposes. 6. Use the admixture as per requirement.			
Prerequisite:	Introduction to Civil Engineering CE(HS)302, Chemistry BS-CH101.			
Module 1	Cement: Manufacturing of cement, Oxides composition of cement and the calculation of compounds, Heat of hydration, Types of cement-OPC, RPC, Low heat cement, PPC, PSC, Sulphate resisting cement, High Alumina cement, Expansive cement, White cement, Test on cement- fineness, consistency, initial setting time & final setting time, soundness test, strength test, specific gravity of cement, storage of cement.		5L + 3T	
Module 2	Aggregates: Classification, Grading, alkali-aggregate reaction, deleterious substances in aggregates, physical properties, testing of aggregates- fineness modulus, bulking, specific gravity, sieve analysis, flakiness & elongation index Quality of Water for mixing and curing - use of sea water for mixing concrete.		3L + 1T	
Module 3:	Properties of fresh concrete: Workability, factors affecting workability, segregation and bleeding, tests on workability, slump test, compacting factor test, vee-bee test, flow table test.		3L + 1T	
Module 4:	Properties of Hardened concrete: Tensile & compressive strength, flexural strength, stress-strain characteristics, modulus of elasticity, poisson's ratio, Creep, shrinkage, permeability of concrete, micro cracking of concrete.		3L + 1T	
Module 5:	Strength of concrete: curing methods, water-cement ratio, gel-space ratio, maturity of concrete.		3L + 1T	
Module 6	Admixtures: types, uses, superplasticizers, plasticizers, Bonding admixtures.		2L + 1T	
Module 7	Mix Design - Objective, factors influencing mix proportion - Mix design by IS 10262:2019. (with & without admixture)		3L + 1T	
Module 8	Non-destructive test: Rebound hammer and Ultra-sonic pulse velocity testing methods. Quality control - Sampling and testing, Acceptance criteria.		3L + 1T	
Module 9	Special Concrete - Ferrocement - Fibre reinforced concrete - Polymer concrete - Sulphur Concrete - Self compacting concrete. Ready mix concrete, Batching plant.		4L + 1T	
Reference	Sl.	Book Name	Author	Publishing House
	1	Concrete Technology (Theory & Practice)	Shetty, M.S.	S. Chand and Co.
	2	Concrete Technology	Gambhir, M.L.	Tata McGraw Hill
	3	Concrete Technology	A. M Neville and J.J. Brooks	Pearson Education India Ltd.
	4	Properties of Concrete	A.M Neville	Pearson India

CE(HS)401	Civil Engineering - Societal and Global Impact	2L + 0T	2 Credits
Course Outcome	On completion of the course, the students will be able to: 1. The impact which Civil Engineering projects have on the Society at large and on the global arena and using resources efficiently and effectively. 2. The extent of Infrastructures, its requirements for energy and how they are met: past, present and future 3. The Sustainability of the Environment, including its Aesthetics. 4. The potentials of Civil Engineering for Employment creation and its Contribution to the GDP 5. The Built Environment and factors impacting the Quality of Life 6. The precautions to be taken to ensure that the above-mentioned impacts are not adverse but beneficial. 7. Applying professional and responsible judgement and take a leadership role.		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

Prerequisite				
Module 1	Introduction to Course and Overview: Understanding the past to look into the future. Preindustrial revolution days, Agricultural revolution, first and second industrial revolutions, IT revolution; Recent major Civil Engineering breakthroughs and innovations; Present day world and future projections; Ecosystems in Society and in Nature; the steady erosion in Sustainability; Global warming, its impact and possible causes; Evaluating future requirements for various resources; GIS and applications for monitoring systems; Human Development Index and Ecological Footprint of India Vs other countries and analysis.	3L		
Module 2	Understanding the importance of Civil Engineering in shaping and impacting the world; The ancient and modern Marvels and Wonders in the field of Civil Engineering; Future Vision for Civil Engineering	3L		
Module 3:	Infrastructure - Habitats, Megacities, Smart Cities, futuristic visions; Transportation (Roads, Railways & Metros, Airports, Seaports, River ways, Sea canals, Tunnels (below ground, under water), Futuristic systems (ex. Hyper Loop); Energy generation (Hydro, Solar (Photovoltaic, Solar Chimney), Wind, Wave, Tidal, Geothermal, Thermal energy); Water provisioning; Telecommunication needs (towers, above-ground and underground cabling); Awareness of various Codes & Standards governing Infrastructure development; Innovations and methodologies for ensuring Sustainability;	8L		
Module 4:	Environment -Traditional & futuristic methods; Solid waste management, Water purification, Wastewater treatment & Recycling, Hazardous waste treatment; Flood control (Dams, Canals, River interlinking), Multi-purpose water projects, Atmospheric pollution; Global warming phenomena and Pollution Mitigation measures, Stationarity and non-stationarity; Environmental Metrics & Monitoring; Other Sustainability measures; Innovations and methodologies for ensuring Sustainability;	7L		
Module 5:	Built environment -Facilities management, Climate control, Energy efficient built environments and LEED ratings, Recycling, Temperature/ Sound control in built environment, Security systems; Intelligent/ Smart Buildings; Aesthetics of built environment, Role of Urban Arts Commissions; Conservation, Repairs & Rehabilitation of Structures & Heritage structures; Innovations and methodologies for ensuring Sustainability;	5L		
Module 6	Civil Engineering Projects - Environmental Impact Analysis procedures, Waste (materials, manpower, equipment) avoidance/ Efficiency increase; Advanced construction techniques for better sustainability; Techniques for reduction of Green House Gas emissions in various aspects of Civil Engineering Projects; New Project Management paradigms & Systems (Ex. Lean Construction), contribution of Civil Engineering to GDP, Contribution to employment/projects, facilities management), Quality of products, Health & Safety aspects for stakeholders; Innovations and methodologies for ensuring Sustainability during Project development.	4L		
Reference	Sl.	Book Name	Author	Publishing House
	1	Global Challenges and the Role of Civil Engineering, Chapter 3 in: Fischinger M. (eds) Performance-Based Seismic Engineering: Vision for an Earthquake Resilient Society. Geotechnical, Geological and Earthquake Engineering, Vol. 32	Ziga Turk (2014)	Springer
	2	Engineering impacting Social, Economical and Working Environment	Brito, Clampa, Vasconcelos, Amaral, Barros (2013)	128th ASEE Annual Conference and Exposition

CE(MC)401	Management - I (Organizational Behaviour)	2L + 0T	2 Credits
Module 1	Introduction to Organizational Behaviour-Concept, Importance, Challenges and Opportunities Personality-Meaning of Personality, Personality Determinants and Traits, Psychoanalytic Theory, Argyris Immaturity to Maturity Continuum Impact on organization. Attitude-Concept, Components, Cognitive Dissonance Theory, Attitude Surveys.		3L
Module 2	Perception- Concept, Nature and Importance, Process of Perception, Factors influencing perception, Perceptual Selectivity, Shortcuts to Judge Others, Halo		6L



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	Effect, Stereotyping, Projection and Contrast Effects, Impact on Organization, Motivation-Definition, Theories of Motivation-Maslow's Hierarchy of Needs Theory, McGregor's Theory X&Y, Herzberg's Motivation-Hygiene Theory, Alderfer's ERG Theory, McClelland's Theory of Needs, Vroom's Expectancy Theory.																
Module 3:	Leadership-Concept, Leadership Styles, Theories-Behavioural Theory, Ohio Studies, Michigan Studies, Blake & Mouton Managerial Grid; Contingency Theory; Fielder Theory. Group Behaviour: Definition, Characteristics of Group, Types of Groups: Formal & Informal; Stages of Group Development, Group Decision making, Group Decision Making Vs Individual Decision Making.	5L															
Module 4:	Organizational Design-Various organizational structures and their pros and cons, Concepts of organizational climate and culture, Organizational Politics-Concept, Factors influencing degree of Politics Conflict management- Concept, Sources of conflict, Stages of conflict process, Conflict resolution techniques, Tools-Johari Window to analyse and reduce interpersonal conflict, Impact on organization.	5L															
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Organization Behaviour</td> <td>Stephen Robbins</td> </tr> <tr> <td>2</td> <td>Organization Behaviour</td> <td>Lothans</td> </tr> <tr> <td>3</td> <td>Organization Behaviour</td> <td>L.M. Prasad</td> </tr> <tr> <td>4</td> <td>Organization Behaviour : Text, Cases & Games</td> <td>K. Arwathappa</td> </tr> </tbody> </table>	Sl.	Book Name	Author	1	Organization Behaviour	Stephen Robbins	2	Organization Behaviour	Lothans	3	Organization Behaviour	L.M. Prasad	4	Organization Behaviour : Text, Cases & Games	K. Arwathappa	
Sl.	Book Name	Author															
1	Organization Behaviour	Stephen Robbins															
2	Organization Behaviour	Lothans															
3	Organization Behaviour	L.M. Prasad															
4	Organization Behaviour : Text, Cases & Games	K. Arwathappa															

CE(ES)491	Fluid Mechanics Laboratory	2P	1 Credits
Course Outcome	On completion of the course, the students will be able to: <ol style="list-style-type: none"> 1. Calibrate the notch and orifice meter. 2. Evaluate the performance of pump and turbine. 3. Determine the various hydraulic coefficients. 4. Determine the minor losses through pipes. 5. Measure the water surface profile due to formation of hydraulic jump. 6. Measure the water surface profile for flow over Broad crested weir. 		
Prerequisite	Introduction to Fluid Mechanics CE(ES)401		
Experiment 1	Calibration of Notches		
Experiment 2	Calibration of Orifice meter		
Experiment 3	Determination of Hydraulic Coefficient of an Orifice		
Experiment 4	Performance Test on Centrifugal Pump		
Experiment 5	Performance Test on Reciprocating Pump		
Experiment 6	Determination of Minor Losses in Pipes due to Sudden Enlargement and Sudden Contraction		
Experiment 7	Performance Test on Pelton Wheel Turbine		
Experiment 8	Measurement of water surface profile for flow over Broad crested weir		
Experiment 9	Measurement of water surface profile for a hydraulic jump		

CE(ES)492	Solid Mechanics Laboratory	2P	1 Credits
Course Outcome	After going through this course, the students will be able to: <ol style="list-style-type: none"> 1. Demonstrate the method and findings of tension and compression tests on ductile and brittle materials. 2. Explain the method of bending tests on mild steel beam and concrete beam. 3. Demonstrate the method and findings of Torsion test on mild steel circular bar and concrete beam. 4. Illustrate the concept of hardness and explain the procedure and findings of Brinell and Rockwell tests. 5. Demonstrate the concept and procedure of calculation of spring constant and elaborate its use in Civil Engineering. 6. Demonstrate the method and findings of Izod and Charpy impact tests. 7. Understand the concepts of fatigue test. 		
Prerequisite	Introduction to Solid Mechanics (CE/ES)402)		

82

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

Experiment 1	Tension test on Structural Materials: Mild Steel and Tor steel (HYSD bars)
Experiment 2	Compression Test on Structural Materials: Timber, bricks and concrete cubes
Experiment 3	Bending Test on Mild Steel
Experiment 4	Torsion Test on Mild Steel Circular Bar
Experiment 5	Hardness Tests on Ferrous and Non-Ferrous Metals: Brinell and Rockwell Tests
Experiment 6	Test on closely coiled helical spring
Experiment 7	Impact Test: Iod and Charpy
Experiment 8	Demonstration of Fatigue Test

CE(ES)493	Engineering Geology Laboratory	2P	1 Credits
Course Outcome	Upon completion of the course, the students will be able to: 1. Define and state the role of engineering geology in civil engineering 2. Understand origin of rocks and geologic structures 3. Apply different tools to identify rocks and minerals in hand specimen and under microscope 4. Analyze the geological structures through drawing the cross sections from the geological maps 5. Evaluate the results obtained from different geological experiments 6. Investigate the natural hazards/disasters that are caused by the geological reasons		
Prerequisite	Knowledge of basic physics and chemistry		
Experiment 1	Identification of minerals in hand specimen		
Experiment 2	Identification of igneous rocks in hand specimen		
Experiment 3	Identification of sedimentary rocks in hand specimen		
Experiment 4	Identification of metamorphic rocks in hand specimen		
Experiment 5	Study of crystals with the help of crystal models		
Experiment 6	Study of geologic structures with the help of models		
Experiment 7	Interpretation of geological maps: horizontal, vertical, uniclinal, folded and faulted structures		
Experiment 8	Microscopic study of rocks and minerals		

CE(PC)493	Surveying & Geomatics Laboratory	2P	1 Credits
Course Outcome	Upon completion of the course, the students will be able to: 1. State the interdependency and advancement of different surveying methods 2. Comprehend the working principles of different surveying and geomatics instruments and experiments 3. Execute the different methods of surveying and geomatics to measure the features of interest 4. Examine the results obtained from the surveying and geomatics experiments 5. Critically appraise the different techniques of surveying and geomatics in measuring and assessing the features of interest 6. Design and construct solutions for real world problems related to surveying and geomatics		
Prerequisite	Surveying & Geomatics [CE(PC)493]		
Experiment 1	Traverse survey by Prismatic Compass: Procedure, Computation and checks on closed traverse, Preparation of field book, Plotting the traverse, Sources of errors		
Experiment 2	Theodolite Survey: Closed traverse by transit theodolite, Preparation of field book		
Experiment 3	Differential Levelling using Dumpy level: Collimation and Rise and Fall methods, Field book preparation		
Experiment 4	Total Station Survey: Traversing and Levelling		
Experiment 5	Visual Image Interpretation		
Experiment 6	Satellite Image Pre-processing		
Experiment 7	Digital Image Classification and Accuracy Assessment		
Experiment 8	Stereoscopic fusion of aerial photographs using mirror stereoscope		

89



2/11/21

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

CE(PC)494	Concrete Technology Laboratory	2P	1 Credits
Course Outcome	On completion of the course, the students will be able to: 1. Demonstrate the method and findings of tension and compression tests on concrete. 2. Understand the concepts of different test on hardened concrete. 3. Calculate the specific gravity of concrete ingredients. 4. Find out the mix proportion of high grade of concrete. 5. Measure the workability of concrete mix. 6. Know about the quality of concrete. 7. Understand the different properties of cement.		
Prerequisite	Concrete Technology CE(PC)404		
Test on Fine aggregates	Bulking, Specific gravity, Bulk Density, Percentage voids, Fineness Modulus, Grading curve.		
Test on Course aggregates	Specific gravity, Bulk Density, Percentage voids, Fineness Modulus, Grading curve.		
Test on Cement	Normal consistency, fineness, Initial setting and final setting time of cement, Specific gravity, soundness and Compressive strength of Cement.		
Test on Fresh Concrete	Concrete mix design, Various workability tests – slump, compacting factor, vee-bee test.		
Test on Hardened Concrete	Split-tensile strength test, Flexure test, NDT Tests (Rebound hammer and Ultra-sonic pulse velocity), Poisson ratio.		

Semester V [Third year]

CE(PC)501	Design of RC Structures	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Understand material properties and design methodologies for reinforced concrete structures. 2. Assess different type of loads and prepare layout for reinforced concrete structures. 3. Identify and apply the applicable industrial design codes relevant to the design of reinforced concrete members. 4. Analyse and design various structural elements of reinforced concrete building like beam, slab, column, footing, and staircase. 5. Assessment of serviceability criteria for reinforced concrete beam and slab. 6. Prepare structural drawings and detailing and produce design calculations and drawing in appropriate professional format.		
Prerequisite	Introduction to Solid Mechanics (CE/ES)402, Concrete Technology (CE(PC)404)		
Module 1:	Introduction: Principles of design of reinforced concrete members - Working stress and Limit State method of design		1L
Module 2:	Working stress method of design: Basic concepts and IS code provisions (IS: 456/2000) for design against bending moment and shear forces - Balanced, under reinforced and overreinforced beam/ slab sections; design of singly and doubly reinforced sections		2L+2T
Module 3:	Limit state method of design: Basic concepts and IS code provisions (IS: 456/2000) for design against bending moment and shear forces; concepts of bond stress and development length; Use of 'design aids for reinforced concrete' (SP:16).		3L+2T
Module 4:	Beam Design by LSM: Analysis, design and detailing of singly reinforced rectangular, T, L and doubly reinforced beam sections by limit state method.		3L+2T
Module 5:	Slab Design by LSM : Design and detailing of one-way and two-way slab panels as per IS code provisions		2L+1T
Module 6:	Continuous slab and beam design by LSM: Design and detailing of continuous beams and slabs as per IS code provisions		2L+1T
Module 7:	Design of Staircases by LSM: Types; Design and detailing of reinforced concrete doglegged staircase		3L+1T
Module 8	Design of Columns by LSM: Design and detailing of reinforced concrete short columns of rectangular and circular crosssections under axial load. Design of short columns subjected to axial load with moments (uniaxial and biaxial bending) - using SP 16.		4L+1T
Module 9	Design of Foundation by LSM: Design and detailing of reinforced concrete isolated square and rectangular isolated and combined footing for columns as per IS code provisions by limit state method Design and detailing of Pile foundation as per IS code provisions.		6L+2T
IS Codes	1	IS: 456 - 2000	
	2	IS 875 - I (1987), II (1987), -III (2015), -IV(1987), V (1987)	
	3	SP: 16 Design Aid to IS 456	

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

Reference	Sl.	Book Name	Author	Publishing House
	1	Reinforced Concrete Design	Pillai and Menon	TMH
	2	Reinforced Concrete Design	Krishna Raju & Pranesh	New Age
	3	R.C.C. Design	B.C. Punmia	Laxmi Publication
	4	Reinforced concrete structures	N. Subramanian	OXFORD University Press
	5	Limit State Design of Reinforced Concrete	P. C. Varghese	PHI
	6	Reinforced concrete	S.N. Sinha	TMH

CE(PC)502	Engineering Hydrology	3L + 0T	3 Credits	
Course Outcome	On completion of the course, the students will be able to: 10. study the source, occurrence, movement and distribution of water which is a prime resource for development of a nation. 11. learn about the functioning of reservoirs and estimation of storage capacities. 12. learn about flood hazards, estimation of design floods for various structures and methods of estimating effects of passage of floods through rivers and reservoirs. 13. know the basic principles of measurement of flow in rivers.			
Prerequisite	Introduction to Civil Engineering CE(HS)302, CE(ES)401 Fluid Mechanics, Chemistry BS-CH101, Physics BS-PH101.			
Module 1	Hydrology: Hydrologic Cycle, Global Water Budget, India's Water Budget.		1L	
Module 2	Catchment: Definition & Descriptions, Various Types of Catchment, Factors Characterizing a Catchment, Delineation of Catchment Boundary.		2L	
Module 3:	Measurement of Precipitation: Precipitation, Description and Functioning of Various Types of Rain gauges, Rain gauge Network- Codal Provisions, Optimum Number of Rain gauge Stations.		2L	
Module 4:	Processing of Rainfall Data: Normal Rainfall, Estimation of Missing Rainfall Data, Test for Consistency of Record, Mass Curve of Rainfall, Hyetograph, Point Rainfall, Mean Precipitation over an Area- Arithmetic Mean, Thiessen Polygon and Isohyetal Method.		4L	
Module 5:	Losses from Precipitation: Evaporation - Evaporation Process, Factors affecting Evaporation, Measurement of Evaporation- Description and Functioning of Pan Evaporimeter, Pan Coefficient, Evapotranspiration: AET, PET, Measurement of ET, Estimation of ET-Blaney Criddle Formulae, Infiltration- Process, Factors Affecting Infiltration, Infiltration Rate and Infiltration Capacity, Measurement of Infiltration, Infiltration Equations, Infiltration Indices.		6L	
Module 6	Streamflow Measurement: Importance, Direct and Indirect Methods, Measurement of Stage- Various Gauges and Recorders, Measurement of Velocity-Current Meters, their Functioning and Calibration; Velocity Distribution, Floats; Streamflow Computation- Area-Velocity Method, Moving Boat Method, Dilution Technique, Electromagnetic Method, Ultrasonic Method; Indirect Methods- Flow Measuring Structures, Slope Area Method; Stage-Discharge Relation, Permanent Control, Stage for Zero Discharge, Shifting Control- Backwater Effect, Unsteady Flow Effect, Extension of the Rating Curve.		12L	
Module 7	Runoff: Description of the Process, Components of Runoff, Factors Affecting Runoff, Characteristics of Streams, Rainfall Runoff Relationships, Hydrographs: Types, Base Flow Separation, Effective Rainfall.		2L	
Module 8	Unit Hydrograph- Definition, Assumptions, Applications- Derivation of Unit Hydrograph, Distribution Graph, Unit Hydrograph of Different Durations- Method of Superposition and S-Curve.		4L	
Module 9	Floods: Concept of flood as a natural hazard; Estimation of flood discharge in a river - rational method, empirical formulae, unit hydrograph method, flood frequency studies - return period.		2L	
Module 10	Flood Routing: Concept of flood routing in channels and through a reservoir, basic routing equations; reservoir routing - Modified Pul's method; channel routing - Muskingum method.		5L	
Reference	Sl.	Book Name	Author	Publishing House
	1	Engineering Hydrology (4th Ed.	K. Subramanya	McGraw Hill Education (India) Private Limited, New Delhi, 2013.
	2	Engineering Hydrology	R. Srivastava and A. Jain	McGraw Hill Education (India) Private Limited, New Delhi, 2017.
	3	Applied Hydrology	V. T. Chow, D. Maidment, L. Mays	Tata McGraw Hill Education, Delhi, 2010.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	4	Hydrology	M. M. Das, M. Das Saikia	PHI Learning Private Limited, New Delhi, 2009.
--	---	-----------	-----------------------------	---------------------------------------------------

CE(PC)503	Structural Analysis – I	2L + 1T	3 Credits	
Course Outcome	After going through this course, the students will be able to: 1. Distinguish between stable and unstable and statically determinate and indeterminate structures. 2. Apply equations of equilibrium to structures and compute the reactions. 3. Calculate the internal forces in cable and arch type structures. 4. Evaluate and draw the influence lines for reactions, shears and bending moments in beams due to moving loads. 5. Use approximate methods for analysis of statically indeterminate structures. 6. Calculate the deflections of truss structures and beams.			
Prerequisite	Introduction to Solid Mechanics (CE(ES)402)			
Module 1	Basics of Structural Analysis: Concept of static and kinematic indeterminacy, Determination of degree of indeterminacy for different types of structures. Theorem of minimum potential energy, law of conservation energy, principle of virtual work, the first and second theorems of Castiglano, Betti's law, Clark Maxwell's theorem of reciprocal deflection		3L+1T	
Module 2	Analysis of Determinate Structures: Portal Frames, Three hinged arches, Cables		3L+2T	
Module 3	Deflection of Determinate Structures: Energy methods, Unit Load method for beams, Deflection of trusses and Simple Portal Frames.		3L+2T	
Module 4	Influence Line Diagram: Statically determinate beams and trusses under series of concentrated and uniformly distributed rolling loads, criteria for maximum and absolute maximum moments and shear.		6L+3T	
Module 5	Analysis of Statically Indeterminate Beams: Theorem of three moments, Energy methods, Force method (Method of consistent deformation) [For analysis of propped cantilever, fixed beams and continuous beams (maximum two degree of indeterminacy) for simple loading case], Analysis of two hinged arch.		8L+4T	
Module 6	Influence Line Diagram for Indeterminate Structures: Muller – Breslau principle.		3L+2T	
Reference	Sl.	Book Name	Author	Publishing House
	1	Structural Analysis (Vol I & Vol II)	S S Bhavikatti	Vikas Publishing House Pvt. Ltd
	2	Structural Analysis	Ramamurtham	
	3	Strength of Materials and Theory of Structures (Vol I & Vol II)	Punmia, Jain, Jain	Laxmi Publication
	4	Structural Analysis	R.C. Hibbeler	Prentice Hall
	5	Theory of Structures	Timoshenko and Young	McGrawHill
	6	Structural Analysis	Pandit and Gupta	TMH

CE(PC)504	Soil Mechanics – II	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Assess the compaction and consolidation characteristics of soil for solving geotechnical problems. 2. Calculate earth pressure on rigid retaining walls on the basis of classical earth pressure theories. 3. Analyze and design rigid retaining walls (cantilever types) from geotechnical engineering consideration. 4. Evaluate the bearing capacity of shallow foundation by applying established theory. 5. Estimate settlement in soils by different methods. 6. Compute safety of dams and embankments on the basis of various methods of slope stability analysis.		
Prerequisite	Soil Mechanics – I (CE(PC)401)		
Module 1	Consolidation of Soil Terzaghi's theory of one dimensional consolidation, Compressibility characteristics of soils, Compression index, Coefficient of compressibility and volume change, Coefficient of consolidation, Degree and rate of consolidation, Time factor, Settlement computation, Consolidometer and laboratory one dimensional consolidation test as per latest IS Code, Determination of consolidation parameters.		5L+3T

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

Module 2	Compaction of Soil Principles of compaction; Standard and modified proctor compaction test; Field compaction methods; Field compaction control; Factors affecting compaction; Effect of compaction on soil properties.	3L+1T		
Module 3	Earth Pressure Theories Plastic equilibrium of soil; Earth pressure at rest; Active and passive earth pressures; Rankine's and Coulomb's earth pressure theories; Different types of backfill; Wedge method of analysis; Analytical and graphical methods for determination of earth pressure against various earth retaining structures. Stability of retaining walls: Cantilever retaining wall.	7L+3T		
Module 4	Bearing capacity of shallow foundations Bearing capacity; Definition; Factors affecting bearing capacity; Modes of failures; Methods of determining bearing capacity of soils; Terzaghi's bearing capacity theory; Effect of depth of embedment; Eccentricity of load; Foundation shape on bearing capacity; Effect of H water table and eccentric loads; Isolated footings with combined action of loads and moments; Bearing capacity as per IS: 6403.	7L+4T		
Module 5	Settlement Allowable bearing pressure and settlement analysis (as per IS: 8009); Immediate and consolidation settlements; Rigidity and depth factor corrections; Settlement values as per IS: 1904 recommendations.	2L+1T		
Module 6	Stability of slopes Types of failure; Analysis of finite and infinite slopes; Swedish and friction circle method; Ordinary method of slices; Factor of safety; Taylor's stability number; Bishop's simplified method of stability analysis.	3L+2T		
Reference	Sl. No.	Book Name	Author	Publishing House
	1	Textbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series)	V.N.S. Murthy	CBS Publishers
	2	Soil Mechanics and Foundations	Punmia, B.C. and Jain A. K.	Laxmi Publications (P) Ltd
	3	Basic and Applied Soil Mechanics	Gopal Ranjan & A.S.R. Rao	New Age International Pvt.Ltd, Publishers
	4	Principles of Geotechnical Engineering	B.M. Das	Thomson Brooks / Cole

CE(PC)505	Environmental Engineering - II	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Define the basic concepts and terminologies of waste water engineering and hazardous waste management 2. Describe different home plumbing systems for water supply and wastewater disposal 3. Apply the methods of quantifying sanitary sewage and storm sewage 4. Solve different mathematical problems regarding different components of sewerage system 5. Compare between different wastewater samples based on their physical, chemical and biological characteristics 6. Design different unit processes and operations involved in wastewater treatment		
Prerequisite	Class-XII level knowledge of Physics, Chemistry, Mathematics, Biology and Environmental Science; Undergraduate level knowledge of Engineering Mechanics, Fluid Mechanics and Hydraulics; Environmental Engineering - I (CEPC402)		
Module 1	Sewage and Drainage Definition of Common Terms: Sewage or Sanitary Sewage, Drainage or Storm Sewage, Sullage, Black Water, Grey Water Sewerage Systems: Separate system, Combined System, Partially Separate System; applicability, advantages and disadvantages	1L+1T	
Module 2	Sewage and Drainage Quantity Quantity estimation for sanitary sewage; Quantity estimation for storm sewage	3L+1T	
Module 3	Conveyance of Sewage Sewers: Shapes; Design parameters; Operation and maintenance of sewers; Sewer appurtenances Hydraulic Design of Sewers: Partial flow diagrams and Nomograms	4L+2T	
Module 4	Wastewater Characteristics Physical, chemical and biological characteristics of municipal and domestic sewage; Effluent discharge standards	4L+2T	

EG



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

Module 5	Wastewater Treatment Primary, secondary and tertiary treatment of wastewater; aerobic and anaerobic treatment options Primary and Secondary Treatment of Domestic Wastewater; Typical Flow Chart of STP; Screen and Bar Racks; Grit Chamber; Primary and Secondary Sedimentation Tank; Activated Sludge Process; Trickling Filter	3L+4T		
Module 6	Sludge Handling and Disposal Sludge Thickening; Sludge Digestion; Sludge Drying Bed	3L+1T		
Module 7	Building Plumbing Introduction to various types of home plumbing systems for water supply and waste water disposal; high rise building plumbing; Pressure reducing valves; Break pressure tanks; Storage tanks; Building drainage for high rise buildings; various kinds of fixtures and fittings used	3L+1T		
Module 8	Hazardous waste Types and nature of hazardous waste as per the HW Schedules of regulating authorities	3L+1T		
Reference	Sl.	Book Name	Author	Publishing House
	1	Environmental Engineering, Volume-1 and Volume-2	Garg, S.K.	Khanna Publishers
	2	Environmental Engineering	Peavy, H.S. Rowe, D.R. Tchobanoglous, G	Tata McGraw Hill Indian Edition
	3	Introduction to Environmental Engineering and Science	Masters, G.M., Ela, W.P.	Prentice Hall / Pearson
	4	Manual on Sewerage and Sewage Treatment	CPHEEO	Govt. of India
	5	Manual on Municipal Solid Waste Management	CPHEEO	Govt. of India
	6	Hazardous and other waste (Management and Transboundary Movement) Rules, 2016	MoEF	Govt. of India

CE(PC)506	Transportation Engineering	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Understand the knowledge of planning, design and the fundamental properties of highway materials in highway engineering. 2. Apply the knowledge of geometric design and draw appropriate conclusion. 3. Interpret the concept of different methods in design, construction of the pavement. 4. Interpret traffic parameters by applying the knowledge in traffic planning and intersection design.		
Prerequisite	Class-XII level knowledge of Physics, Mathematics; Undergraduate level knowledge of Engineering Mechanics, Strength of Materials, Soil Mechanics		
Module 1	Introduction to Highway Engineering Scope of Highway Engineering; Jayakar Committee Report; Recommendations – CRF, IRC, CRR; Scope of Motor Vehicle Act; Recommendations of Nagpur Road conference; Road Classification as per third 20 years road development plan (1981-2001); Basic types of Road Patterns and its scope of application	2L+1T	
Module 2	Highway alignment Factors controlling Highway Alignment; Engineering Surveys for Highway Alignment	1L+1T	
Module 3	Geometric Design Cross-sectional elements of highway; Design Parameters (as per IRC) – Vehicle dimensions, Carriageway width, Design speed, Frictional coefficients (Lateral and Longitudinal) etc; Design Principles of Horizontal Alignment: Camber, Sight Distance (PIEV theory, SSD, OSD, ISD), Horizontal Curves – [Radius, Super elevation, Extra widening, Set back distance, Transition curve]; Design Principles of Vertical Alignment: Gradients; Grade Compensation; Vertical Curves – Summit Curve, Valley curve	5L+4T	
Module 4	Traffic Engineering Traffic studies: Fundamental parameters of Traffic Flow (speed, flow, density, capacity) and their basic relations; Basics of Spot Speed Studies; Speed and Delay study; O & D study; Intersections and Channelization: At Grade and Grade Separated intersections; Conflict points; Salient features of Rotary; Traffic Signs; Signal Design – Basic concepts of IRC design method, 2 phase signal design by Webster method	7L+3T	

88

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

Module 5	Pavement Design Pavement materials: Bitumen, Aggregate, Subgrade soil; Types of Pavement: Flexible and Rigid pavements and their typical cross-sections; Design parameters: Wheel Load, ESWL, Tyre Pressure, CBR, Resilient Modulus & Poisson's Ratio of various layers, Subgrade Modulus etc. Design of Flexible Pavement using IRC 37-2018 Design of Rigid Pavement: Wheel Stresses, Frictional Stresses and Warping Stresses; Expansion, Contraction and Construction Joints; Design of Rigid Pavement thickness, Dowel Bar and Tie Bar. Distresses in Pavements	6L+5T																								
Module 6	Sustainability Scope of adoption of sustainable construction techniques by using recyclable hazardous materials- fly ash, plastics, recyclable construction materials.	1L+1T																								
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Traffic Engineering and Transport Planning</td> <td>Kadiyali L.R</td> <td>Khanna Publishers</td> </tr> <tr> <td>2</td> <td>Highway Engineering</td> <td>Khanna, S.K. and C.E.G. Justo</td> <td>Nem Chand and Bros</td> </tr> <tr> <td>3</td> <td>Transportation Engineering - An Introduction</td> <td>Jotin Khisty C. and B. Kent Lall</td> <td>Prentice Hall of India Pvt. Ltd</td> </tr> <tr> <td>4</td> <td>Principles of Transportation and Highway Engineering</td> <td>Rao G.V.</td> <td>Tata McGraw-Hill Publishing Company Ltd</td> </tr> <tr> <td>5</td> <td>Specifications for Road and Bridge Works, Fourth Edition</td> <td>Indian Roads Congress</td> <td>Ministry of Road Transport and Highways</td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	Traffic Engineering and Transport Planning	Kadiyali L.R	Khanna Publishers	2	Highway Engineering	Khanna, S.K. and C.E.G. Justo	Nem Chand and Bros	3	Transportation Engineering - An Introduction	Jotin Khisty C. and B. Kent Lall	Prentice Hall of India Pvt. Ltd	4	Principles of Transportation and Highway Engineering	Rao G.V.	Tata McGraw-Hill Publishing Company Ltd	5	Specifications for Road and Bridge Works, Fourth Edition	Indian Roads Congress	Ministry of Road Transport and Highways	
Sl.	Book Name	Author	Publishing House																							
1	Traffic Engineering and Transport Planning	Kadiyali L.R	Khanna Publishers																							
2	Highway Engineering	Khanna, S.K. and C.E.G. Justo	Nem Chand and Bros																							
3	Transportation Engineering - An Introduction	Jotin Khisty C. and B. Kent Lall	Prentice Hall of India Pvt. Ltd																							
4	Principles of Transportation and Highway Engineering	Rao G.V.	Tata McGraw-Hill Publishing Company Ltd																							
5	Specifications for Road and Bridge Works, Fourth Edition	Indian Roads Congress	Ministry of Road Transport and Highways																							

CE(PC)591	RC Design Sessional	2P	1 Credits
Course Outcome	After going through this course, the students will be able to: <ol style="list-style-type: none"> Understand material properties and design methodologies for reinforced concrete structures. Assess different type of loads and prepare layout for reinforced concrete structures. Identify and apply the applicable industrial design codes relevant to the design of reinforced concrete members. Analyse and design various structural elements of reinforced concrete building like beam, slab, column, footing, and staircase. Assessment of serviceability criteria for reinforced concrete beam and slab. Prepare structural drawings and detailing and produce design calculations and drawing in appropriate professional format. 		
Prerequisite	Design of RC Structures (CE(PC)501)		
	Design of a small RCC framed building using Limit State method of design including preparation of necessary working drawing and report in accordance with CE(PC)501		

CE(PC)594	Soil Mechanics Laboratory	2P	1 Credits
Course Outcome	After going through this course, the students will be able to: <ol style="list-style-type: none"> Identify different types of soil by visual inspection. Determine natural moisture content and specific gravity of various types of soil. Estimate in-situ density by core cutter method and sand replacement method. Analyze grain size distribution and Atterberg limits for soil. Perform laboratory tests to determine permeability and compaction characteristics of soil. Determine shear strength parameters of soil by unconfined compression test and vane shear test. Determine shear strength parameters of soil by direct shear test. Perform triaxial test to determine shear strength parameters of soil. Determine California Bearing Ratio (CBR) of soil. Prepare technical laboratory report. 		
Prerequisite	Soil Mechanics - I (CE(PC)401) and Soil Mechanics - II (CE(PC)504)		
Experiment 1	Field identification of different types of soil as per Indian Standards [collection of field samples and identifications without laboratory testing].		
Experiment 2	Determination of natural moisture content.		
Experiment 3	Determination of specific gravity of cohesionless and cohesive soils.		
Experiment 4	Determination of in-situ density by core cutter method and sand replacement method.		
Experiment 5	Determination of grain size distribution by sieve and hydrometer analysis.		
Experiment 6	Determination of Atterberg limits (liquid limit, plastic limit and shrinkage limit).		
Experiment 7	Determination of co-efficient of permeability by constant and variable head permeability.		
Experiment 8	Determination of compaction characteristics of soil by standard proctor compaction test.		



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

Experiment 9	Determination of unconfined compressive strength of soil by unconfined compression test.
Experiment 10	Determination of shear strength parameters of soil by direct shear test.
Experiment 11	Determination of undrained shear strength of soil by vane shear test.
Experiment 12	Determination of shear strength parameters of soil by unconsolidated undrained triaxial test.
Experiment 13	Determination of California Bearing Ratio (CBR) of soil.
Experiment 14	Determination of relative density of soil.
Experiment 15	Standard Penetration Test.
Reference	<ol style="list-style-type: none"> 1. Soil Mechanics Laboratory Manual by Braja Mohan Das (Oxford university press). 2. SP 36 (Part - I and Part - II)

CE(PC)595	Environmental Engineering Laboratory	2P	1 Credits
Course Outcome	On completion of the course the students will be able to: <ol style="list-style-type: none"> 1. Experiment various physical characteristics for a given sample of water and wastewater 2. Determine various chemical characteristics for a given sample of water and wastewater 3. Examine the bacteriological characteristics for a given sample of water and wastewater 4. Examine the suitability of a few treatment options for a given sample of water and wastewater 5. Compare the determined quality parameters with standards to decide on the suitability of use for the tested water and disposal of treated wastewater 		
Prerequisite	Class-XII level knowledge of Physics, Chemistry, Mathematics, Biology and Environmental Science. Undergraduate level knowledge of Environmental Engineering, Biology for Engineers, Chemistry Laboratory, Physics Laboratory		
Experiment 1	Determination of turbidity for a given sample of water.		
Experiment 2	Determination of electrical conductivity for a given sample of water.		
Experiment 3	Determination of Total Solids, Suspended Solids, Dissolved Solids and Volatile Solids in a given sample of water.		
Experiment 4	Determination of pH for a given sample of water.		
Experiment 5	Determination of carbonate, bi-carbonate and hydroxide alkalinity for a given sample of water.		
Experiment 6	Determination of acidity for a given sample of water.		
Experiment 7	Determination of hardness for a given sample of water.		
Experiment 8	Determination of concentration of Iron in a given sample of water.		
Experiment 9	Determination of concentration of Chlorides in a given sample of water.		
Experiment 10	Determination of the Optimum Alum Dose for a given sample of water through Jar Test.		
Experiment 11	Determination of the Chlorine Demand and Break-Point Chlorination for a given sample of water.		
Experiment 12	Determination of amount of Dissolved Oxygen (DO) in a given sample of water.		
Experiment 13	Determination of the Biochemical Oxygen Demand (BOD) for a given sample of wastewater.		
Experiment 14	Determination of the Chemical Oxygen Demand (COD) for a given sample of wastewater.		
Experiment 15	Determination of Coliform Bacteria: presumptive test, Confirmative test and Determination of MPN.		
Reference	<ol style="list-style-type: none"> 1. Garg, S.R. <i>Environmental Engineering</i>, Volume-1 and Volume-2, Khanna Publishers 2. Peavy, H.S., Rowe, D.R., Tchobanoglous, G. <i>Environmental Engineering</i>, McGraw Hill International Edition / Tata McGraw Hill Indian Edition 3. Sawyer, C.N., McCarty, P.L., Parkin, G.F. <i>Chemistry for Environmental Engineering and Science</i>, McGraw Hill International Edition / Tata McGraw Hill Indian Edition 4. IS 3025 (Different Parts), "METHODS OF SAMPLING AND TEST (PHYSICAL AND CHEMICAL) FOR WATER AND WASTE WATER". 5. APHA Standard Methods for the Examination of Water and Wastewater. 6. IS 10500 - 2012, "DRINKING WATER SPECIFICATION (SECOND REVISION)". 		

CE(PC)596	Transportation Engineering Laboratory	2P	1 Credits
Prerequisite	Transportation Engineering (CE(PC)500)		
Introduction	Introduction on pavement construction materials		
Experiment 1	Shape test of aggregate		
Experiment 2	Crushing Strength Test of aggregate		
Experiment 3	Impact test of aggregate		
Experiment 4	Los Angeles Abrasion test of aggregate		
Experiment 5	Specific Gravity and Water Absorption test of aggregate		
Experiment 6	Specific Gravity test		
Experiment 7	Penetration test		
Experiment 8	Static or Kinematic viscosity		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

Experiment 9	Softening point test
Experiment 10	Flash and Fire Point test
Experiment 11	Ductility test
Experiment 12	CBR value of sub-grade (Soaked and unsoaked)
Experiment 13	Marshall Stability test
Demonstration	Demonstration on Stripping value and Loss on heating tests of bitumen, Benkelman Beam and Bump Integrator test.

CE(PC)597	Computer Applications in Civil Engineering	2P	1 Credits
Course Outcome	On successful completion of this course, student should be able to: 7. Use the computer as a problem-solving tool. 8. Identify and formulate Civil Engineering problems solvable by computers. 9. Perform linear algebra and matrix operations and their application to solve Civil Engineering problems. 10. Solve sets of linear equations and determine roots and nonlinear equations. 11. Construct, interpret and solve simple optimization problems. 12. Develop programs for Civil Engineering analysis and design problems. 13. Use various software used in industries for analysis and design.		
Prerequisite	ES-CS291 Programming for Problem Solving, CE(ES)392 Computer-aided Civil Engineering Drawing.		
Module 1	Introduction: Concept of problem-solving using computer, use of programming language and software for problem solving; Identification of various design and analysis problems in different fields of Civil Engineering to be solved using computers; Procedure, formulae and data related to the analysis and design of such problems.		
Module 2	Use of spreadsheets: Learning spreadsheets like MS Excel, matrix analysis, use of Goal Seek and Solver, Optimization Tools; Plotting, Applications to problems involving tabular data, CE estimation, surveying, and design problems.		
Module 3	Programming Languages: Learning at least one language: Fortran 2003/2008/2015, C++11/C++14, Python 3, VBA 7.0; Computing platforms like Matlab/Scilab/MathCAD, Solving analysis and design problems in areas like surveying, hydraulics, structural analysis, RCC design, soil mechanics and foundation, transportation, water resources, etc.		
Module 4	Use of Software: Familiarity with widely used Civil Engineering software like STAAD Pro, HEC-RAS, HEC-HMS, SWMM, Mx Roads, etc. Solving at least two such analysis/design problems.		

Semester VI [Third year]

CE(PC)601	Construction engineering & Management	2L + 0T	2 Credits
Course Outcome	On completion of the course, the students will have: 1. An idea of how structures are built and projects are developed on the field 2. An understanding of modern construction practices 3. A good idea of basic construction dynamics: various stakeholders, project objectives, processes, resources required and project economics 4. A basic ability to plan, control and monitor construction projects with respect to time and cost 5. An idea of how to optimise construction projects based on costs 6. An idea how construction projects are administered with respect to contract structures and issues. 7. An ability to put forward ideas and understandings to others with effective communication processes.		
Module 1	Planning: General consideration, Definition of aspect, prospect, roomness, grouping, circulation, Privacy.		2L
Module 2	Regulation and Bye laws Bye Laws in respect of side space, Back and front space, Covered areas, height of building etc., Lavatory blocks, ventilation, Requirements for stairs, lifts in public assembly building, offices		4L
Module 3:	Fire Protection Fire fighting arrangements in public assembly buildings, planning, offices.		2L



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	auditorium			
Module 4:	Planning & Scheduling of constructions Projects Planning by CPM Preparation of network, Determination of slacks or floats, Critical activities, Critical path, Project duration. Planning by PERT Expected mean time, probability of completion of project, Estimation of critical path, problems			6L
Module 5:	Construction Methods basics Types of foundations and construction methods; Basics of Formwork and Staging; Common building construction methods (conventional walls and slabs); conventional framed structure with blockwork walls; Modular construction methods for repetitive works; Precast concrete construction methods; Basics of Slip forming for tall structures; Basic construction methods for steel structures; Basics of construction methods for Bridges.			4L
Module 6	Construction plants & Equipment Plants & equipment for earth moving, road constructions, excavators, dozers, scrapers, spreaders, rollers, their uses. Plants & Equipment for concrete construction Batching plants, Ready Mix Concrete, concrete mixers, Vibrators etc., quality control.			3L
Module 7	Contracts Management basics Importance of contracts; Types of Contracts, parties to a contract; Common contract clauses (Notice to proceed, rights and duties of various parties, notices to be given, Contract Duration and Price, Performance parameters; Delays, penalties and liquidated damages; Force Majeure, Suspension and Termination, Changes & variations; Dispute Resolution methods.			4L
Module 8	Management Professional practice, Definition, Rights and responsibilities of owner, engineer, Contractors, types of contract			3L
Module 9	Departmental Procedures Administration, Technical and financial sanction, operation of PWD, Tenders and its notification, EMD and SD, Acceptance of tenders, Arbitration.			2L
Reference	Sl.	Book Name	Author	Publishing House
	1	Building Construction	Varghese, P.C.	Prentice Hall India.
	2	National Building Code	Bureau of Indian Standards	
	3	Construction Technology	Chudley, R.	ELBS Publishers
	4	Construction Planning, Methods and Equipment	Peurifoy, R.L.	McGraw Hill
	5	Construction Methods and Management.	Nunnally, S.W.	Prentice Hall
	6	Project Planning with PERT and CPM	Punmia, B.C., Khandelwal, K.K.	Laxmi Publications

CE(PC)602	Engineering Economics, Estimation & Costing	2L + 0T	2 Credits
Course Outcome	On completion of the course, the students will: <ol style="list-style-type: none"> 1. Have an idea of Economics in general, Economics of India particularly for public sector agencies and private sector businesses 2. Be able to perform and evaluate present worth, future worth and annual worth analyses on one of more economic alternatives. 3. Be able to carry out and evaluate benefit/cost, life cycle and breakeven analyses on one or more economic alternatives. 4. Be able to understand the technical specifications for various works to be performed for a project and how they impact the cost of a structure. 5. Be able to quantify the worth of a structure by evaluating quantities of constituents, derive their cost rates and build up the overall cost of the structure. 6. Be able to understand how competitive bidding works and how to submit a competitive bid proposal. 		
Module 1	Basic Principles and Methodology of Economics. Demand/Supply – elasticity – Government Policies and Application, Theory of the Firm and Market Structure, Basic Macroeconomic Concepts (including GDP/GNP/NI/Disposable Income) and Identities for both closed and open economies.		3L

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	Aggregate demand and Supply (IS/LM). Price Indices (WPI/CPI). Interest rates. Direct and Indirect Taxes																					
Module 2	Elements of Business/Managerial Economics and forms of organizations. Cost & Cost Control –Techniques, Types of Costs, Lifecycle costs, Budgets, Break even Analysis, Capital Budgeting, Application of Linear Programming, Investment Analysis – NPV, ROI, IRR, Payback Period, Depreciation, Time value of money (present and future worth of cash flows), Business Forecasting – Elementary techniques, Statements – Cash flow, Financial, Case Study Method.	3L																				
Module 3:	Estimation / Measurements for various items Introduction to the process of Estimation; Use of relevant Indian Standard Specifications for the same, taking out quantities from the given requirements of the work, comparison of different alternatives, Bar bending schedules, Mass haul Diagrams, Estimating Earthwork and Foundations, Estimating Concrete and Masonry, Finishes, Interiors, MEP works; BIM and quantity take-off; adding equipment costs; labour costs; rate analysis; Material survey; Thumb rules for computation of materials requirement for different materials for buildings, percentage breakup of the cost, cost sensitive index, market survey of basic materials, Use of Computers in quantity surveying	9L																				
Module 4:	Specifications Types, requirements and importance, detailed specifications for buildings, roads, minor bridges and industrial structures.	3L																				
Module 5:	Rate analysis Purpose, importance and necessity of the same, factors affecting, task work, daily output from different equipment/ productivity.	3L																				
Module 6	Tender- Preparation of tender documents, importance of inviting tenders, contract types, relative merits, prequalification, general and special conditions, termination of contracts, extra work and Changes, penalty and liquidated charges, Settlement of disputes, R.A. Bill & Final Bill, Payment of advance, insurance, claims, price variation, etc. Preparing Bids- Bid Price buildup, Material, Labour, Equipment costs, Risks, Direct & Indirect Overheads, Profit, Bid conditions, alternative specifications; Alternative Bids, Bid process management	3L																				
Module 7	Valuation Values and cost, gross income, outgoing, net income, scrap value, salvage value, market value, Book Value, sinking fund, capitalised value, Y.P., depreciation, obsolescence, deferred income, freehold and leasehold property, mortgage, rent fixation, valuation table	3L																				
Module 8	Introduction to Acts pertaining to-Minimum wages, Workman's compensation, Contracts, Arbitration, Easement rights.	2L																				
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Estimating, Costing Specifications & Valuation</td> <td>M Chakravarty</td> <td></td> </tr> <tr> <td>2</td> <td>Typical PWD Rate Analysis documents.</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Estimating and Costing in Civil Engineering (Theory & Practice)</td> <td>Dutta, B.N.</td> <td>UBS Publishers</td> </tr> <tr> <td>4</td> <td>Distributors, Estimating and Costing in Civil Engineering: Theory and Practice including Specification and Valuations</td> <td></td> <td>UBS Publishers</td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	Estimating, Costing Specifications & Valuation	M Chakravarty		2	Typical PWD Rate Analysis documents.			3	Estimating and Costing in Civil Engineering (Theory & Practice)	Dutta, B.N.	UBS Publishers	4	Distributors, Estimating and Costing in Civil Engineering: Theory and Practice including Specification and Valuations		UBS Publishers	
Sl.	Book Name	Author	Publishing House																			
1	Estimating, Costing Specifications & Valuation	M Chakravarty																				
2	Typical PWD Rate Analysis documents.																					
3	Estimating and Costing in Civil Engineering (Theory & Practice)	Dutta, B.N.	UBS Publishers																			
4	Distributors, Estimating and Costing in Civil Engineering: Theory and Practice including Specification and Valuations		UBS Publishers																			

CE(PC)603	Water Resources Engineering	2L + 0T	2 Credits
Course Outcome	On successful completion of this course, student should be able to: <ol style="list-style-type: none"> Understand the fundamentals of flow in open channels. Understand the concepts of irrigation. Estimate the quantity of water required by different crops in different seasons, and accordingly the irrigation water requirement. Design channels and other irrigation structures required for irrigation, drainage, soil conservation, flood control and other water-management projects. Learn about groundwater resources, aquifers and wells. 		
Prerequisite	Introduction to Civil Engineering, Introduction to Fluid Mechanics CE(ES)401		



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

Module 1	Open Channel Flow: Channel Characteristics and parameters, Energy-depth relationships, Specific Energy concept, Critical Flow, Hydraulic Jump, Uniform flow, Efficient sections, Slope profiles, Gradually Varied Flow, Water surface profiles.	8L		
Module 2	Irrigation: Definition, Necessity, Scope, Benefits of Irrigation; Types, techniques and sources of irrigation, Development of irrigation in India	3L		
Module 3	Soil-water-plant Relationship: Types of crops, cropping seasons, water requirement of crops, base period, kor period, Duty, Delta, Commanded area, Net Irrigation Requirement, Field Irrigation Requirement, Gross Irrigation Requirement, Intensity of irrigation, Consumptive use of water, estimation of evapotranspiration, Blaney-Criddle method, Modified Penman's method, Irrigation efficiency, Frequency of irrigation.	6L		
Module 4	Canal irrigation: Classification of irrigation canals, canals in alluvium; Design of unlined canals; Kennedy's method, Lacey's method; Lined canals: advantages, materials used, typical sections, design of lined canals, economics of canal lining; Canal sections - filling, cutting, partial cutting and partial filling.	6L		
Module 5	Land drainage: Water logging issues in irrigation, provision of drains, design and maintenance of open drains, closed drains, discharge and spacing of closed drains.	4L		
Module 6	Groundwater: Occurrence of groundwater- Aquifers, Various Types of Aquifers, Aquifer Parameters: Specific Yield, Specific Retention, Storage Coefficient, Transmissivity.	4L		
Reference	Sl.	Book Name	Author	Publishing House
	1	Irrigation and Water Power Engineering	B. C. Punmia, A. K. Jain and P. B. Lal	Laxmi Publications (P) Ltd., New Delhi, 2019.
	2	Irrigation, Water Resources and Water Power Engineering	P. N. Modi	Standard Book House, New Delhi, 2019.
	3	Irrigation Engineering and Hydraulic Structures	S. K. Sharma	S Chand Publishing, New Delhi, 2017,2012.
	4	Irrigation Engineering	N. N. Basak	Tata McGraw Hill Education India Private Limited, 2017.
	5	Irrigation and Water Resources Engineering	G. L. Asawa	New Age Publishers, New Delhi, 2005.

CE(PC)604	Design of Steel Structures	2L + 0T	2 Credits
Course Outcome	After going through this course, the students will be able to: <ol style="list-style-type: none"> 1. Identify the material properties of structural steel. Moreover, the students will identify different bolted and welded connections, analyse and design them for axial and eccentric loads. 2. Design different steel sections subjected to axial compression and tension following Indian codes of practices. 3. Comprehend the differences between laterally supported and unsupported flexure members. Designing of the flexure members using Indian codes of practice. 4. Analyse and design rolled and built up compression members along with base connection subjected to axial compression, bending and tension. 5. Calculate shear force and bending moment on rolled and built up girders, dimension the section and finally design it following Indian standard design guidelines. 6. Identify different components of gantry system, calculate lateral and vertical loads acting on the system, dimension the components and design them. 7. Design different components of an industrial building. 		
Prerequisite	Introduction to Solid Mechanics (CE/ES102)		
Module 1	Materials and Specification: Rolled steel sections, mechanical properties of steel and their specifications for structural use. Codes of practices. Design of Steel structures using tubular , rectangular and square section		1L
Module 2	Structural connections: Riveted, welded and bolted including High strength friction grip bolted joints. - types of riveted & bolted joints, assumptions, failure of joints, efficiency of joints, design of bolted, riveted & welded joints for axial load. Eccentric connection:- Riveted & bolted joints subjected to torsion & shear, tension & shear, design of riveted, bolted & welded connection.		6L
Module 3	Design of Tension members: Design of tension members, IS code provisions, Permissible stresses, Design rules, Examples.		3L
Module 4	Design of Compression members: Effective lengths about major & minor principal axes, IS code provisions, Permissible stresses, Design rules, Design of		6L

28

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	one component, two components and built up compression members under axial load. Examples: Built up columns under eccentric loading; Design of lacing and batten plates; Different types of Column Bases- Slab Base, Gusseted Base, Connection details			
Module 5	Design of Beams: Permissible stresses in bending, compression and tension. Design of rolled steel sections, plated beams, simple Beam end connections, beam -Column connections. IS code provisions	4L		
Module 6	Design of Plate girders: Design of webs & flanges. Concepts of curtailment of flanges - Riveted & welded web stiffeners, web flange splices - Riveted, welded & bolted.	4L		
Module 7	Design of Gantry Girder: Design gantry girder considering lateral buckling - IS code provisions.	4L		
IS Codes	1. IS 800 - 2007(Latest Revised code)			
	2. IS 875 - I (1987), II (1987), III (2015), IV(1987), V (1987)			
	3. S.P. 6(1) - 1964 Structural Steel Sections			
	4. IS 1161 - 2014			
Reference	Sl.	Author	Publishing House	
	1	Steel structures	N. Subramanian	OXFORD University Press
	2	Design Of Steel Structures	S.K.Duggal	TMH
	3	Design Of Steel Structures	Bhavikatti	I.K. Publishing House

CE(PE)601A	Stability of Slopes	2L + 0T	2 Credits	
Course Outcome	On successful completion of this course, student should be able to: 1. Understand the fundamental theories and knowledge in the stability analysis of soil slopes. 2. Measure the finite and infinite slope stability. 3. Develop the analytical and numerical skills in treating a complicated practical slope problem. 4. Evaluate the safety and design proper slope protection measures. 5. Analyse the strength parameters in slope stability.			
Prerequisite	Introduction to Civil Engineering (CE(HS)302), Soil Mechanics - I (CE(PC)401), Soil Mechanics - II (CE(PC)504).			
Module 1	Introduction: slope failure- causes, short- and long-term failure.		2L	
Module 2	Landslides: types, multiple and complex slides, rate of land movement, factor of safety, examples.		4L	
Module 3:	Slope stability analysis: basic concepts, finite and infinite slopes, analysis of infinite slopes-dry or moist cohesive slope, non-cohesive slope, cohesive slope with seepage.		8L	
Module 4:	Analysis of finite slopes: planar failure surface, circular failure surface, friction circle method, Taylor's stability chart, location of critical circle, total stress analysis.		8L	
Module 5:	Method of Slices: Fellenius method, Bishop's simplified method, effective stress stability chart.		4L	
Module 6	Non-circular failure surfaces, selection of strength parameter in slope stability, various slope protection measures.		2L	
Reference	Sl.	Book Name	Author	Publishing House
	1	Soil Mechanics and Foundation Engineering	P. Parushothama Raj	Pearson publication
	2	Principles of Foundation Engineering	Braja M. Das	Thomson Asia Pvt. Ltd, Singapore, 2005.
	3	Soil strength and slope stability	J.M. Duncan, S.G. Wright	John Wiley & Sons (Imprint: Hoboken, N.J.), 2005.
	4	Slope Analysis	R. Chowdhury	Elsevier Scientific Publishing
	5	The Stability of Slopes.	E.N. Bromhead	Blackie Academic & Professional

CE(PE)601B Foundation Engineering

2L + 0T 2 Credits

Course Outcome On successful completion of this course, student should be able to:



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	<ol style="list-style-type: none"> Determine the load carrying capacity of pile foundation. Compute the efficiency and settlement of pile group. Understand different soil exploration methods and interpret field and laboratory test data to obtain design parameters for geotechnical analysis. Correlate bearing capacity of shallow foundation from field test data. Analyse and design sheet pile structures on the basis of earth pressure theories. Understand and apply various types of ground improvement methods for solving complex geotechnical problems. 																																					
Prerequisite	Introduction to Civil Engineering (CEI18030), Soil Mechanics – I (CE(PE)601), Soil Mechanics – II (CE(PE)504)																																					
Module 1	Introduction Classification, selection: shallow and deep foundations.	2L																																				
Module 2	Deep foundations Pile foundation: Types of piles, material, suitability and uses, Method of installation of piles – classification of piles based on material, Installation Techniques – Selection and uses, Determination of types and lengths of piles, Load transfer mechanism, Determination of load carrying capacities of piles by static and dynamic formulae as per IS codes, Pile spacing and group action, Group efficiency, Negative skin friction, Pile load test, Settlement of pile group, Lateral load capacity of pile by IS: 2011 and Reese & Matlock methods, Uplift capacity of pile - introduction.	0L																																				
Module 3:	Site Investigation & Soil Exploration Planning of sub-surface exploration, Methods of boring, sampling, Different types of samples, Spacing, Depth and number of exploratory borings, Bore log, Preparation of sub-soil investigation report. In-situ tests Standard penetration test, Static cone penetration test, Dynamic cone penetration test, Field vane shear test, Plate load test. Indirect methods of soil exploration Geophysical method, seismic refraction and electrical resistivity methods.	0L																																				
Module 4:	Shallow Foundations Bearing Capacity from SPT, SCPT and Plate load Test data.	3L																																				
Module 5:	Sheet pile structures Type of sheet piling, Design of sheet pile, Cantilever sheet piling, Anchored sheet piling, Free earth and fixed earth support methods, Analysis with anchored bulk heads.	4L																																				
Module 6:	Introduction to Ground Improvement Techniques Introduction, Economic considerations, Consolidation by preloading and sand drains, Stone columns, Compaction by vibro-flotation, Grouting techniques and principles, Applications of geo-synthetics, Ground anchors and soil nailing.	0L																																				
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Textbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series)</td> <td>V.N.S. Murthy</td> <td>CBS Publishers</td> </tr> <tr> <td>2</td> <td>Soil Mechanics and Foundations</td> <td>Punmia, B.C. and Jain A. K.</td> <td>Laxmi Publications (P) Ltd</td> </tr> <tr> <td>3</td> <td>Basic and Applied Soil Mechanics</td> <td>Gopal Ranjan & A.S.R. Rao</td> <td>New Age International Pvt Ltd, Publishers</td> </tr> <tr> <td>4</td> <td>Principles of Geotechnical Engineering</td> <td>B.M. Das</td> <td>Thomson Brooks / Cole</td> </tr> <tr> <td>4</td> <td>Soil Mechanics and Foundation Engineering</td> <td>P. Parashothama Raj</td> <td>Pearson publication</td> </tr> <tr> <td>5</td> <td>Soil strength and slope stability</td> <td>J.M. Duncan, S.G. Wright</td> <td>John Wiley & Sons (Imprint, Hoboken, N.J.), 2009</td> </tr> <tr> <td>6</td> <td>Slope Analysis.</td> <td>R. Chowdhury</td> <td>Elsevier Scientific Publishing</td> </tr> <tr> <td>7</td> <td>The Stability of Slopes.</td> <td>E.N. Bromhead</td> <td>Blackie Academic & Professional</td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	Textbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series)	V.N.S. Murthy	CBS Publishers	2	Soil Mechanics and Foundations	Punmia, B.C. and Jain A. K.	Laxmi Publications (P) Ltd	3	Basic and Applied Soil Mechanics	Gopal Ranjan & A.S.R. Rao	New Age International Pvt Ltd, Publishers	4	Principles of Geotechnical Engineering	B.M. Das	Thomson Brooks / Cole	4	Soil Mechanics and Foundation Engineering	P. Parashothama Raj	Pearson publication	5	Soil strength and slope stability	J.M. Duncan, S.G. Wright	John Wiley & Sons (Imprint, Hoboken, N.J.), 2009	6	Slope Analysis.	R. Chowdhury	Elsevier Scientific Publishing	7	The Stability of Slopes.	E.N. Bromhead	Blackie Academic & Professional	
Sl.	Book Name	Author	Publishing House																																			
1	Textbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series)	V.N.S. Murthy	CBS Publishers																																			
2	Soil Mechanics and Foundations	Punmia, B.C. and Jain A. K.	Laxmi Publications (P) Ltd																																			
3	Basic and Applied Soil Mechanics	Gopal Ranjan & A.S.R. Rao	New Age International Pvt Ltd, Publishers																																			
4	Principles of Geotechnical Engineering	B.M. Das	Thomson Brooks / Cole																																			
4	Soil Mechanics and Foundation Engineering	P. Parashothama Raj	Pearson publication																																			
5	Soil strength and slope stability	J.M. Duncan, S.G. Wright	John Wiley & Sons (Imprint, Hoboken, N.J.), 2009																																			
6	Slope Analysis.	R. Chowdhury	Elsevier Scientific Publishing																																			
7	The Stability of Slopes.	E.N. Bromhead	Blackie Academic & Professional																																			

CE(PE)601C	Ground Improvement Technique	2L + 0T	2 Credits
Course Outcome	On successful completion of this course, student should be able to		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	<ol style="list-style-type: none"> gain competence in properly devising alternative solutions to difficult and earth construction evaluate their effectiveness before, during and after construction. understand different approaches to the ground modification. Understand the soil stabilisation for reinforced earth construction. 																								
Prerequisite	Introduction to Civil Engineering CE(HS)302, Soil Mechanics – II CE(PC)504, Soil Mechanics – I CE(PC)401.																								
Module 1	Introduction: ground modification by vibro-replacement, stone columns, preloading and prefabricated drains, Reinforced earth structures. 4L																								
Module 2	Insitu densification: Introduction, Compaction: methods and controls Densification of granular soil: Vibration at ground surface, Impact at ground surface, Vibration at depth (Vibroflotation), Impact at depth. 6L																								
Module 3:	Geo-textiles: Introduction to geotextiles and geomembranes, applications of geotextiles, design methods using geotextiles, geogrids, geonets, geomembranes, geotubes. 6L																								
Module 4:	Grouting: Over view: Suspension and Solution grout, Grouting equipment and methods, Grout design and layout, Grout monitoring schemes. 6L																								
Module 5:	Soil stability: Reinforced earth fundamentals, Soil nailing, Soil and Rock Anchors, Underpinning. 4L																								
Module 6	Densification of Cohesive Soils: Preloading and dewatering, Design of Sand drains and Stone columns, Electrical and thermal methods. 4L																								
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Construction and Geotechnical methods in foundation engineering</td> <td>R.M. Koener</td> <td>McGraw Hill</td> </tr> <tr> <td>2</td> <td>Reinforced Earth</td> <td>T S Ingold</td> <td>Thoam Telford</td> </tr> <tr> <td>3</td> <td>Designing with Geosynthetics</td> <td>R M Koerner</td> <td>Prentice Hall</td> </tr> <tr> <td>4</td> <td>Ground Improvement Techniques</td> <td>P. Purushothama Raj</td> <td>Laxmi Publications Pvt Limited, 2nd edition.</td> </tr> <tr> <td>5</td> <td>Principles and Practice of Ground Improvement</td> <td>Jie Han</td> <td>Wiley publishers, 1st edition.</td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	Construction and Geotechnical methods in foundation engineering	R.M. Koener	McGraw Hill	2	Reinforced Earth	T S Ingold	Thoam Telford	3	Designing with Geosynthetics	R M Koerner	Prentice Hall	4	Ground Improvement Techniques	P. Purushothama Raj	Laxmi Publications Pvt Limited, 2 nd edition.	5	Principles and Practice of Ground Improvement	Jie Han	Wiley publishers, 1 st edition.
Sl.	Book Name	Author	Publishing House																						
1	Construction and Geotechnical methods in foundation engineering	R.M. Koener	McGraw Hill																						
2	Reinforced Earth	T S Ingold	Thoam Telford																						
3	Designing with Geosynthetics	R M Koerner	Prentice Hall																						
4	Ground Improvement Techniques	P. Purushothama Raj	Laxmi Publications Pvt Limited, 2 nd edition.																						
5	Principles and Practice of Ground Improvement	Jie Han	Wiley publishers, 1 st edition.																						

CE(PE)602A	Building Construction Practice	2L + 0T	2 Credits
Module 1	Specifications, details and sequence of activities and construction co-ordination – Site Clearance – Marking – Earthwork – masonry – stone masonry – Bond in masonry – concrete hollow block masonry – flooring – damp proof courses – construction joints – movement and expansion joints – pre cast pavements – Building foundations – basements – temporary shed – centering and shuttering – slip forms – scaffoldings – de-shuttering forms – Fabrication and erection of steel trusses – frames – braced domes – laying brick – weather and water proof – roof finishes – acoustic and fire protection.		12L
Module 2	Sub Structure Construction Techniques of Box jacking – Pipe Jacking –under water construction of diaphragm walls and basement-Tunnelling techniques – Piling techniques – well and caisson – sinking cofferdam – cable anchoring and grouting-driving diaphragm walls, sheet piles – shoring for deep cutting – well points – Dewatering and stand by Plant equipment for underground open excavation.		10L
Module 3	Super Structure Construction Launching girders, bridge decks, off shore platforms – special forms for shells – techniques for heavy decks – in-situ pre-stressing in high rise structures, Material handling – erecting light weight components on tall structures – Support structure for heavy Equipment and conveyors –Erection of articulated structures, braced domes and space decks		8L

CE(PE)602B	Structural Analysis – II	2L + 0T	2 Credits
Course Outcome	After going through this course, the students will be able to: 1. Apply the Slope Deflection and Moment Distribution Method to analyze indeterminate		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	<p>structures.</p> <p>2. Develop and analyze the concept of suspension bridge and stiffness girders</p> <p>3. Apply and analyze the concepts of curved beam analysis in hooks, rings and Bow girders.</p> <p>4. Develop the concept bending in unsymmetrical beams.</p> <p>5. Develop the fundamental concepts of plastic analysis using kinematic method and apply them in frames and continuous beam analysis.</p> <p>6. Develop and analyze the portal frames using Portal and Cantilever method. Develop and analyze the indeterminate structures (continuous beams and frames) using flexibility and stiffness matrix method.</p>																																	
Prerequisite	Introduction to Solid Mechanics (CEES)402, Structural Analysis – I (CE(PC)503)																																	
Module 1	Analysis of statically indeterminate structures: Moment distribution method-solution of continuous beam, effect of settlement and rotation of support, frames with or without side sway. Slope deflection method, method and application in continuous beams and frames. Suspension Bridge and stiffening girders.	8L																																
Module 2	Curved Beam analysis: Hooks, rings and Bow girders. Unsymmetrical bending.	8L																																
Module 3	Plastic analysis of structures: beams and portal frames.	5L																																
Module 4	Approximate method of analysis of structures: Portal and Cantilever methods.	4L																																
Module 5	Matrix methods of structural analysis – Stiffness and flexibility approaches for analysis of beam.	5L																																
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Structural Analysis (Vol I & Vol II)</td> <td>S S Bhavikatti</td> <td>Vikas Publishing House Pvt Ltd</td> </tr> <tr> <td>2</td> <td>Structural Analysis</td> <td>Ramamurtham</td> <td></td> </tr> <tr> <td>3</td> <td>Strength of Materials and Theory of Structures (Vol I & Vol II)</td> <td>Punmia, Jain, Jain</td> <td>Laxmi Publication.</td> </tr> <tr> <td>4</td> <td>Structural Analysis</td> <td>R.C Hibbeler</td> <td>Prentice Hall</td> </tr> <tr> <td>5</td> <td>Theory of Structures</td> <td>Timoshenko and Young</td> <td>McGrawHill</td> </tr> <tr> <td>6</td> <td>Structural Analysis</td> <td>Pandit and Gupta</td> <td>TMH</td> </tr> <tr> <td>7</td> <td>Theory of Matrix Structural Analysis</td> <td>J.S. Przemieniecki</td> <td>DOVER PUBLICATIONS, INC.</td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	Structural Analysis (Vol I & Vol II)	S S Bhavikatti	Vikas Publishing House Pvt Ltd	2	Structural Analysis	Ramamurtham		3	Strength of Materials and Theory of Structures (Vol I & Vol II)	Punmia, Jain, Jain	Laxmi Publication.	4	Structural Analysis	R.C Hibbeler	Prentice Hall	5	Theory of Structures	Timoshenko and Young	McGrawHill	6	Structural Analysis	Pandit and Gupta	TMH	7	Theory of Matrix Structural Analysis	J.S. Przemieniecki	DOVER PUBLICATIONS, INC.	
Sl.	Book Name	Author	Publishing House																															
1	Structural Analysis (Vol I & Vol II)	S S Bhavikatti	Vikas Publishing House Pvt Ltd																															
2	Structural Analysis	Ramamurtham																																
3	Strength of Materials and Theory of Structures (Vol I & Vol II)	Punmia, Jain, Jain	Laxmi Publication.																															
4	Structural Analysis	R.C Hibbeler	Prentice Hall																															
5	Theory of Structures	Timoshenko and Young	McGrawHill																															
6	Structural Analysis	Pandit and Gupta	TMH																															
7	Theory of Matrix Structural Analysis	J.S. Przemieniecki	DOVER PUBLICATIONS, INC.																															

CE(PE)602C	Industrial Structure	2L + 0T	2 Credits
Course Outcome	<p>After going through this course, the students will be able to:</p> <ol style="list-style-type: none"> To perform the analysis and design of reinforced concrete members and their connections. To identify and apply the industrial design codes relevant to the design of Reinforced concrete members. To be familiar with the professional and contemporary design issues and fabrication of Reinforced concrete members. 		
Prerequisite	Introduction to Solid Mechanics (CE(ES)402), Structural Analysis – I (CE(PC)503), Design of RC Structures (CE(PC)501)		
Module 1	Overall Review of RC Design: Review of Limit State Design of Beams, Slabs & Columns according to IS 456-2000. Yield line theory, Biaxial Bending & Slender Column. Analysis and Design of beams curved in plan: Design principle, structural design of beams curved in plan of circular and rectangular types. Flat slabs: Introduction, components – IS code provisions Design method – Design for flexure and shear and Detailing.		8L
Module 2	Deep beams: Introduction, Flexural and shear stresses in deep beam and Design and Detailing. Water tank: Introduction, Types, Analysis and Design of water tanks e.g. Underground & Elevated water tank (Circular, Rectangle and Intz)		7L
Module 3	Raft Foundation: Introduction, Types and Design of raft foundation. Design of folded plate Design of shear wall as per IS 13920		7L
Module 4	Design of bunkers and silos: Introduction, Difference between bunkers and Silo (rectangular, square and circular bunker and silo design for storage of cement). Analysis and design of chimneys: Introduction and different type of linings, wind load calculation on chimney (Static and dynamic) Analysis and		8L

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	design of chimney linings, foundation types.		
IS Codes	1	IS: 456 – 2000 (latest revision)	
	2	IS 875 – I (1987), II (1987), -III (2015), -IV(1987), V (1987)	
	3	SP: 16 Design Aid to IS 456	
	4	IS 1893-Part-I: 2016, IS 1893-Part-II: 2014	
	5	IS 3370 – I (1967), II (2009), III (1967), IV (1967)	
Reference	Sl.	Book Name	Author
	1	R.C.C. Design	B.C. Punmia
	2	Reinforced concrete structures	N. Subramanian
	3	Advanced Reinforced Concrete Design	P. C. Varghese
	4	Advanced Reinforced Concrete Design	N. KrishnaRaju
			Publishing House
			Laxmi Publication
			OXFORD University Press
			PHI
			CBS Publishers

CE(OE)601A	Soft Skills and Interpersonal Communication - I	2L + 0T	2 Credits
Course Outcome	<ol style="list-style-type: none"> Analyse the dynamics of business communication and communicate accordingly. Write business letters and reports Learn to articulate opinions and views with clarity Appreciate the use of language to create beautiful expressions Analyse and appreciate literature. Communicate in an official and formal environment. 		
Module 1	Communication Skill Definition, nature & attributes of Communication Process of Communication Models or Theories of Communication Types of Communication Levels or Channels of Communication Barriers to Communication		3L
Module 2	Business Communication- Scope & Importance Writing Formal Business Letters Writing Reports Organizational Communication: Agenda & minutes of a meeting, notice, memo, circular Project Proposal Technical Report Writing Organizing e-mail messages E-mail etiquette Tips for e-mail effectiveness		8L
Module 3	Language through Literature Modes of literary & non-literary expression Introduction to Fiction. (An Astrologer's Day by R.K. Narayan and Monkey's Paw by W.W. Jacobs), Drama (The Two Executioners by Fernando Arrabal) or (Lithuania by Rupert Brooke) & Poetry (Night of the Scorpion by Nissim Ezekiel and Palanquin Bearers by Sarojini Naidu)		8L
Module 4	Grammar in usage (nouns, verbs, adjectives, adverbs, tense, prepositions, voice change) - to be dealt with the help of the given texts.		10L
Reference	Sl.	Book Name	Author
	1	Theories of Communication: A Short Introduction	Armand Matterlart and Michele Matterlart
	2	Professional Writing Skills	Chan, Janis Fisher, and Diane Lutovich
	3	Writing and Speaking at Work: A Practical Guide for Business Communication	Edward P. Bailey
	4	Intercultural Business Communication	Lillian Chaney and Jeanette Martin
			Publishing House
			Sage Publications Ltd
			San Anselmo, CA: Advanced Communication Design, 1997.
			Prentice-Hall
			Prentice Hall

CE(OE)601B	Introduction to Philosophical Thoughts	2L + 0T	2 Credits
Module 1	Introduction to Indian Philosophy: Brief discussion on Veda and Upanishads; Origin of Indian Philosophy		1L
Module 2	Charvaka Philosophy: Epistemology, Metaphysics		2L
Module 3	Samkhya Philosophy: Metaphysics; Theory of Causation. --Prakrti, Purusa, Evolution; Epistemology		3L
Module 4	Yoga Philosophy: Organization of the YogaSutras; Psychology of Yoga – Stages of Citta, Forms of Citta, Modifications of Citta, Kinds of Klesas; The Eight-Fold Yoga; God and Liberation		3L
Module 5	Nyaya Philosophy : Epistemology -- Perception (Pratyaksha), Inference		5L

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	(Anumāna), Comparison (Upamāna), Testimony (Sabda), Theory of Causation (Asatkāryavāda), Self and Liberation, The Concept of God	
Module 6	Mīmāṃsā Philosophy: Epistemology – Validity of Knowledge; Sources of Valid Knowledge (Pramāna) – Perception, Inference, Comparison, Verbal Testimony, Postulation (Arthapatti), Non Apprehension (Anupalabdhi); Theories of Error (Khyativāda) – Akhyativāda, Anirvacariya Khyativāda, Viparitakhyativāda; Metaphysics – Theory of Causation; Nature of Self, God and Liberation	4L
Module 7	Vaiśeṣika Philosophy: Metaphysics and the Categories – Substance (Dravya), Quality (Guna), Action (Karma), Generality (Sāmānya), Particularity (Vaiśeṣa), Inherence (Samavāya), Nonexistence (Abhāva); Epistemology: The Concept of God, Bondage and Liberation	3L
Module 8	Buddhist Philosophy: Epistemology – Dependent Origination; Four Noble Truths; Eight Fold Paths; Ethics: Karma and Rebirth; Liberation	4L
Module 9	Jaina Philosophy: Sāyādvāda, Anekāntavāda; Ethics: Karma and Liberation	3L

CE(PC)693	Water Resource Engineering Laboratory	2P	1 Credits
Course Outcome	On completion of the course, the students will be able to: 14. Delineate the watershed of any reservoir using DEM. 15. Determine the average rainfall over a catchment. 16. Use the raingauge properly for a specified purpose. 17. Measure the rate of infiltration of water through the soil. 18. Measure the sunshine hours in a particular day.		
Prerequisite	Engineering Hydrology CE(PC)502 & Water Resources Engineering CE(PC)603		
Experiment 1	Catchment area delineation (Manually and using DEM)		
Experiment 2	Calculation of average rainfall over a catchment area with arithmetic mean method, Thiessen polygon method and Isohyetal Method		
Experiment 3	Use of different type of Rain gauges.		
Experiment 4	Measurement of infiltration rate using double ring infiltrometer.		
Experiment 5	Measurement of evaporation using evaporimeter.		
Experiment 6	Measurement of bright sunshine hours using sunshine recorder.		

CE(PC)694	Steel Structure Design Sessional	2P	1 Credits
Course Outcome	After going through this course, the students will be able to: 1. Identify the material properties of structural steel. Moreover, the students will identify different bolted and welded connections, analyse and design them for axial and eccentric loads. 2. Design different steel sections subjected to axial compression and tension following Indian codes of practices. 3. Comprehend the differences between laterally supported and unsupported flexure members. Designing of the flexure members using Indian codes of practice. 4. Analyse and design rolled and built up compression members along with base connection subjected to axial compression, bending and tension. 5. Calculate shear force and bending moment on rolled and built up girders, dimension the section and finally design it following Indian standard design guidelines. 6. Identify different components of gantry system, calculate lateral and vertical loads acting on the system, dimension the components and design them. 7. Design different components of an industrial building.		
Prerequisite	Design of Steel Structures (CE(PC)604)		
	Design of a factory shed including preparation of necessary working drawings and report in accordance with CE(PC)604		

CE(PC)695	Quantity Survey Estimation and Valuation Sessional	1T+2P	2 Credits
Course Outcome	The subject aims to provide the student with: 1. An introduction to quantity surveying 2. The capability to know analysis and schedule of rates		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	<ol style="list-style-type: none"> 3. The ability to know specification of materials 4. An understanding about specification of works 5. The introduction to valuation
Prerequisite	Introduction to Civil Engineering [CE(HS)302], Construction Engineering & Management [CE(PC)601], Engineering Economics, Estimation & Costing [CE(PC)602]
	<ol style="list-style-type: none"> 1. Quantity Surveying: Types of estimates, approximate estimates, items of work, unit of measurement, unit rate of payment. 2. Quantity estimate of a single storied building 3. Bar bending schedule. 4. Details of measurement and calculation of quantities with cost, bill of quantities, abstract of quantities. 5. Estimate of quantities of road, Underground reservoir, Surface drain, Septic tank. 6. Analysis and schedule of rates: Earthwork, brick flat soling, DPC, PCC and RCC, brick work, plastering, flooring and finishing. 7. Specification of materials: Brick, cement, fine and coarse aggregates 8. Specification of works: Plain cement concrete, reinforced cement concrete, first class brickwork, cement plastering, pointing, white washing, colour washing, distemping, lime punning, painting and varnishing 9. Valuation: Values and cost, gross income, outgoing, net income, scrap value, salvage value, market value, Book Value, sinking fund, capitalised value, Y. P., depreciation, obsolescence, deferred income, freehold and leasehold property, mortgage, rent fixation, valuation table

Semester VII [Fourth year]

CE(OE)701A	Metro System and Engineering	2L + 0T	2 Credits
Module 1	Overview of Metro Systems, Need for Metros; Routing studies; Basic Planning and Financial		4L
Module 2	CIVIL ENGINEERING Overview and construction methods for: Elevated and underground Stations; Viaduct spans and bridges; Underground tunnels; Depots; Commercial and Service buildings. Initial Surveys & Investigations; Basics of Construction Planning & Management, Construction Quality & Safety Systems, Traffic integration, multimodal transfers and pedestrian facilities; Environmental and social safeguards; Track systems-permanent way; Facilities Management		12L
Module 3:	ELECTRONICS AND COMMUNICATION ENGINEERING Signaling systems; Automatic fare collection; Operation Control Centre (OCC and BCC); SCADA and other control systems; Platform Screen Doors.		5L
Module 4:	MECHANICAL & TV + AC Rolling stock, vehicle dynamics and structure; Tunnel Ventilation systems; Air conditioning for stations and buildings; Fire control systems; Lifts and Escalators.		5L
Module 5:	ELECTRICAL: OHE, Traction Power; Substations- TSS and ASS; Power SCADA; Standby and Back-up systems; Green buildings, Carbon credits and clear air mechanics		5L

CE(OE)701B	ICT for Development	2L + 0T	2 Credits
Module 1	Introduction to ICT, New media and ICT, Different types of ICT, Use of ICT for development; e-learning; Web commerce; Mobile telephony and Development; telecom industry in India, ICT Projects implemented in India and Northeast – Problems and Prospects		7L
Module 2	Digital Revolution and Digital Communication; Basics of New media theories – Information Society, Surveillance society; Digital Divide, Knowledge society; Network society, Works of Mochup, Bell, Negroponte and Castells		6L
Module 3:	Technology and Development; ICT for Development its societal implications; Evolution of ICT in Development Endeavour; ICT and Millennium Development Goals, Democratic and decentralized processes in development, Technology and culture: community and identity; participatory culture and ICT, community informatics		8L
Module 4:	Computer Mediated Communication and development; Different types of CMC; Important theoretical framework of CMC, cyber platform and communities, Social Networking Site; Convergent media, Multimedia platforms, Scope of convergent journalism for Development; Characteristics of convergent journalism; Different types of convergent journalism: precision journalism, annotative and open-source		10L

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	journalism; wiki journalism; open source journalism; citizen journalism; back-pack journalism, Convergent technologies and applications; Multimedia convergence and Interactivity	
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

CE(OE)701C		Cyber Law & Ethics	2L + 0T	2 Credits
Module 1	Introduction: Basics of Law, Understanding Cyber Space, Defining Cyber Laws, Scope and Jurisprudence, Concept of Jurisdiction, Cyber Jurisdiction, Overview of Indian Legal System, Introduction to IT Act 2000, Amendments in IT Act, Cyber Laws of EU – USA – Australia – Britain; other specific Cyber laws			6L
Module 2	Computer Ethics, Privacy and Legislation: Computer ethics, moral and legal issues, descriptive and normative claims, Professional Ethics, code of ethics and professional conduct, Privacy, Computers and privacy issue, Digital Evidence Controls, Evidence Handling Procedures, Basics of Indian Evidence ACT, Legal Policies, legislative background			7L
Module 3:	Intellectual Property Rights Issues: Copyrights, Jurisdiction Issues and Copyright Infringement, Multimedia and Copyright issues, WIPO, Intellectual Property Rights, Understanding Patents, Understanding Trademarks, Trademarks in Internet, Domain name registration, Software Piracy, Legal Issues in Cyber Contracts, Authorship, Document Forgery			7L
Module 4:	Indian IT Act and Standards: Indian IT ACT, Adjudication under Indian IT ACT, IT Service Management Concept, IT Audit standards, ISO/IEC 27000 Series, COBIT, HIPPA, SOX, System audit, Information security audit, ISMS, SoA (Statement of Applicability), BCP (Business Continuity Plan), DR (Disaster Recovery), RA (Risk Analysis/Assessment)			6L
Module 5:	International Laws governing Cyber Space: Introduction to International Cyber Law, UNCITRAL, Cyber Laws; Legal Issues and Challenges in India, Net neutrality, Role of INTERPOL			4L
Reference	Sl.	Book Name	Author	Publishing House
	1	Computer Ethics	Deborah G. Johnson	Pearsons Education
	2	Cyber Law Simplified	Vivek Sood	McGraw Hill Education
	3	Cyber frauds, cybercrimes & law in India	Pavan Duggal,	Sakshar Law Publications
	4	The Internet Law of India: Indian Law Series	Shubham Sinha	CreateSpace Independent Publishing Platform

CE(PE)701A		Computational Hydraulics	2L + 1T	3 Credits
Course Outcome	On successful completion of this course, student should be able to: 7. Identify the complexities involved in fluid flow problems. 8. Model the specific flow problem in terms of defining the governing equations, initial and boundary conditions and appropriate solution schemes to use. 9. Develop finite difference formulation of ordinary and partial differential equations of flow problems. 10. Develop finite volume formulation of ordinary and partial differential equations of flow problems			
Prerequisite	Introduction to Civil Engineering CE(HS)302, Introduction to Fluid Mechanics CE(ES)401, Water Resources Engineering CE(PC)603			
Module 1	Introduction: Modelling Theory - Physical modelling, analytical modelling, numerical modelling; classification of models based on i) Scale (space and time), ii) Solution (analytical and numerical); Concept of computational hydraulics; Processes involved in model development and application.			4L
Module 2	Modelling Fluid Flow Problems: Governing equations- Conservation of mass, conservation of momentum, conservation of energy; Mathematical classification of flow equations, solution of ordinary differential equations and partial differential equations, boundary conditions; Solution of Saint-Venant Equations - Kinematic wave solution, Diffusive wave solution and full dynamic solution; Characteristic form of Saint-Venant Equations.			8L
Module 3:	Numerical Solution Schemes: Discrete solution of governing equations, Space discretization - Structured grids and unstructured grids, grid generation, time discretization.			2L
	Finite Difference Method: General concept, approximation of derivatives; Finite difference formulation for ordinary differential equations - Explicit			8L

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	schemes, Implicit schemes, Mixed schemes and weighted average schemes; Finite difference formulation for partial differential equations - initial conditions, boundary conditions, explicit and implicit schemes; The Preisamann Scheme, The Abbott-Ionescu scheme.																					
	Example Applications: Ordinary differential equation - Solution of linear reservoir problem; Partial differential equation - Solution of simple wave propagation, Solution of diffusion equation.	6L																				
Module 4:	Finite Volume Method: General concept, Steps in application of Finite Volume Method- Surface and volume integrals, Discretization of convective fluxes, Discretization of diffusive fluxes, evaluation of time derivative, boundary conditions.	8L																				
	Example Application: Solution of Advection-Diffusion Equation in 1-D.	4L																				
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Computational Hydraulics</td> <td>M. B. Abbott and A. W. Minns</td> <td>Routledge, London, 2016</td> </tr> <tr> <td>2</td> <td>Computational Hydraulics – An Introduction</td> <td>C. B. Vreugdenhil,</td> <td>Springer – Verlag, New York, 1989</td> </tr> <tr> <td>3</td> <td>Computational Hydraulics</td> <td>C. A. Brebbia and A. J. Ferrante,</td> <td>Butterworth-Heinemann, 2013.</td> </tr> <tr> <td>4</td> <td>Computational Methods for Fluid Dynamics.</td> <td>J. H. Ferziger and M. Peric</td> <td>Springer, London, 2002.</td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	Computational Hydraulics	M. B. Abbott and A. W. Minns	Routledge, London, 2016	2	Computational Hydraulics – An Introduction	C. B. Vreugdenhil,	Springer – Verlag, New York, 1989	3	Computational Hydraulics	C. A. Brebbia and A. J. Ferrante,	Butterworth-Heinemann, 2013.	4	Computational Methods for Fluid Dynamics.	J. H. Ferziger and M. Peric	Springer, London, 2002.	
Sl.	Book Name	Author	Publishing House																			
1	Computational Hydraulics	M. B. Abbott and A. W. Minns	Routledge, London, 2016																			
2	Computational Hydraulics – An Introduction	C. B. Vreugdenhil,	Springer – Verlag, New York, 1989																			
3	Computational Hydraulics	C. A. Brebbia and A. J. Ferrante,	Butterworth-Heinemann, 2013.																			
4	Computational Methods for Fluid Dynamics.	J. H. Ferziger and M. Peric	Springer, London, 2002.																			

CE(PE)701B	Disaster Preparedness and Planning	2L + 1T	3 Credits
Course Outcome	On completion of the course the students will be able to: <ol style="list-style-type: none"> 1. Define the basic concepts and terminologies disaster management 2. Understand and describe the categories of disaster 3. Realize the roles and responsibilities of a civil engineer towards society in time of a disaster 4. Analyze relationship between development and disasters 5. Apply different concepts of disaster management 		
Prerequisite	Class-X level knowledge of Indian Geography and Class-XII level knowledge of Physics, Chemistry, Mathematics, Biology and Environmental Science. Undergraduate level introductory knowledge of Civil and Environmental Engineering		
Module 1	Introduction, Basic Concepts and Definitions Disaster, Hazard, Vulnerability, Risks, Severity, Frequency and details, Capacity, Impact, Prevention, Mitigation		3L+1T
Module 2	Disasters and their Classification Natural Disasters: Floods, Draught, Cyclones, Volcanoes, Earthquakes, Tsunami, Landslides, Coastal Erosion, Soil Erosion, Forest Fires Manmade Disasters: Industrial Pollution, Artificial Flooding in Urban Areas, Nuclear Radiation, Chemical Spills, Transportation Accidents, Terrorist Strikes Hazard and vulnerability profile of India, Mountain and coastal areas, Ecological fragility		5L+3T
Module 3:	Disaster Impacts Disaster Impacts: Environmental, Physical, Social, Ecological, Economic, Political Health, Psycho-social issues; Demographic aspects (gender, age, special needs); Hazard locations; Global and national disaster trends; Climate change and urban disasters.		7L+3T
Module 4:	Disaster Risk Reduction (DRR) Phases of disaster management cycle: Prevention, Mitigation, Preparedness, Relief and recovery; Structural and non-structural measures; Risk analysis, Vulnerability and capacity assessment; Early warning systems, Post-disaster environmental response (water, sanitation, food safety, waste management, disease control, security, communications); Roles and responsibilities of government, community, local institutions, NGOs and other stakeholders; Policies and legislation for disaster risk reduction, DRR.		7L+3T

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	programmes in India and the activities of National Disaster Management Authority			
Module 3:	Disasters, Environment and Development Factors affecting vulnerability such as impact of developmental projects and environmental modifications (including of dams, land use changes, urbanization etc.), Sustainable and environmental friendly recovery; Reconstruction and development methods			6L+4T
Reference	Sl.	Book Name	Author	Publishing House
	1	Disaster Risk Reduction in South Asia	Pradheep Sahni	Prentice Hall
	2	Handbook of Disaster Management: Techniques & Guidelines	Singh B.K.	Rajat Publication
	3	Disaster Medical Systems Guidelines	Emergency Medical Services Authority	State of California, EMSA no.214, June 2003
	4	IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings	Inter Agency Standing Committee (IASC) (Feb. 2007).	
	5	http://ndma.gov.in/ (Home page of National Disaster Management Authority)		
	6	http://www.ndmindia.nic.in/ (National Disaster management in India, Ministry of Home Affairs)		

CE(PE)701C	Hydraulic Structures	2L + 1T	3 Credits	
Course Outcome	On successful completion of this course, student should be able to: 1. Identify the characteristics of various types of dams and their selection procedure. 2. Perform the reconnaissance survey and, geophysical investigations necessary for selection of suitable dam site 3. Estimate forces acting on a gravity dam and perform stability analysis. 4. Estimate the seepage loss through embankment dams and suggest necessary remedial measures. 5. Calculate the discharge through the overflow section and design the appropriate energy dissipation structures.			
Prerequisite	Introduction to Civil Engineering CE(HS)302, Water Resources Engineering CE(PC)603.			
Module 1	Storage Structures: Dams, Types of Dams - Embankment dams, gravity dams, various components and their functions		1L + 1T	
Module 2	Selection of Dam Site: Site investigations, initial study, reconnaissance survey, geophysical investigations, preliminary selection, evaluation of selected site - various types of foundation testing, field testing and borrow pit investigations, detailed investigations; assessment of foundation characteristics and suitability; selection of type of dam.		4L + 2T	
Module 3:	Gravity Dam: Definition, Features of some important gravity dams, Forces acting on a gravity dam, estimation of forces due to: self-weight, water pressure on upstream and downstream face, Uplift pressure, wave pressure, silt pressure, wind pressure, earthquake forces, hydrodynamic forces; Stability analysis - load combinations, codal provisions, modes of failures - overturning, sliding, tension and compression failures, factors of safety, principal stresses; Elementary profile of a gravity dam - forces acting, minimum base width - no tension, no sliding basis, principal stresses.		8L + 4T	
	Embankment Dams: Definitions, Features of some important embankment dams; Types of embankment dams and their sectional features; Design criteria; Freeboard - necessity, estimation procedure; Seepage analysis - Laplace's flow equations, drainage blanket and rock toe, phreatic line, graphical procedure of drawing phreatic line, estimation of seepage loss; Stability analysis of embankment dams - slip circle method; Seepage Control - cut-offs, slurry trench, sheet piling, grouting, slope protection.		6L + 2T	
	Diversion headworks: Necessity and uses, different types, layout and different components, weirs on permeable foundation, Creep theories, Khosla's method; Different types of modules, Canal escapes, Silt control devices.		3L + 3T	
Module 4:	Spillways and Energy Dissipation Structures: Necessity, types, selection, spillway gates; High overflow ogee spillway - profile, discharge computation, flow equations, factors affecting coefficient of discharge, codal provisions, stilling basins (USBR and BIS) types		4L + 2T	
Reference	Sl.	Book Name	Author	Publishing House
	1	Hydraulic Structures	Novak, A. I. B. Moffat, C.	E & FN Spon, UK, 2010.

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

		Naluri and R. Narayan P.	
2	Hydraulic Structures	S. H. Chen	Springer Nature, USA, 2015.
3	Irrigation Engineering and Hydraulic Structures	S. K. Sharma	S. Chand Publishing, New Delhi, 2017.
4	Dams and Appurtenant Hydraulic Structures	A. Tachev	CRC Press, USA, 2014.
5	Fluid Mechanics and Hydraulic Machines	K. Srinamanya	McGraw Hill Education (India) Private Limited, New Delhi, Chennai, 2019.

CE(PE)702A	Prestressed Concrete	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Learn the introduction of prestressed concrete member and its deflection properties 2. Develop the design criteria of prestressed concrete section for flexure and shear properties 3. Analyze the anchorage zone stress for post-tensioned members 4. Impart knowledge regarding the methods of Analysis of Statically Indeterminate Structures. 5. Impart knowledge regarding the composite construction of Prestress and In-situ concrete. 6. Impart knowledge regarding Design of Prestressed concrete poles and sleepers and introduction of partial prestressing.		
Prerequisite	Introduction to Solid Mechanics (CE(ES)402), Structural Analysis – I (CE(PC)503), Design of RC Structures (CE(PC)501)		
Module 1	Introduction of Prestressed concrete: Materials, prestressing system, analysis of prestress and bending stress, losses Shear and torsional resistance; design of shear reinforcement, design of reinforcement for torsion shear and bending. Deflections of prestressed concrete members: Importance, factors, short term and long term deflection		5L+4T
Module 2	Shear and Torsional Resistance: Design of Shear Reinforcement, Design of Reinforcement for Torsion, Shear and Bending. Limit State Design Criteria: Inadequacy of Elastic and Ultimate Load Method, Criteria for Limit States, Strength and Serviceability. Design of Prestressed Concrete Section: for Flexure & methods by Lin and Magnel		8L+4T
Module 3	Anchorage Zone stresses in post tensioned members: Stress distribution in end block, anchorage zone reinforcement		3L+1T
Module 4	Statically Indeterminate Structures: Advantages of Continuous Member, Effect of Prestressing, Methods of Achieving Continuity and Method of Analysis of Secondary Moments		4L+2T
Module 5	Composite Construction of Prestressed and In-situ Concrete: Types, Analysis of Stresses		3L+1T
Module 6	Prestressed Concrete Poles and Sleepers: Design of Sections for Compression and Bending, Introduction to Partial Prestressing		2L+2T
IS Codes	1. IS. 1343: 2012		
Reference	Sl.	Book Name	Author
	1	Prestressed Concrete	N. Krishnaffaju
	2	Prestressed Concrete	Ramamuthram
	3	Fundamentals of Prestressed Concrete	N.C. Sinha and S.K. Roy
	4	Prestressed Concrete	Karuna Moy Ghosh
	5	Design of Prestressed Structures	T.Y. Lin and N.H. Burns
Author		Publishing House	
		TMH	
		Dhanpat Rai Publishing Company	
		S. Chand	
		PHI	

CE(PE)702B	Repair & Rehabilitation of Structures	2L + 1T	3 Credits
Course Outcome	By the end of this course students will have the capability/knowledge of 1. Various distress and damages to concrete and masonry structures 2. The importance of maintenance of structures, types and properties of repair materials etc 3. Assessing damage to structures and various repair techniques		
Prerequisite	Introduction to Solid Mechanics (CE(ES)402), Structural Analysis – I (CE(PC)503), Design of RC Structures (CE(PC)501), Concrete Technology (CE(PC)405)		
Module 1	Introduction: Overview of distress, deterioration in concrete structures, Scenario of distressed structures world over, Need for repairs and upgrading of		3L+1T



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	structures. General introduction to process (Road-map) to a durable concrete repair			
Module 2	Deterioration of concrete structures: Types of deterioration – Signs, causes & symptoms, Mechanism of deterioration, contributing factors like permeability, inadequate durability & micro-structure of concrete. Physical deterioration due to moisture, temperature, shrinkage, freeze-thaw, abrasion, erosion, cavitation, crystallization of salts, Efflorescence, exposure to severe environment like marine exposure. Chemical deterioration due to corrosion of reinforcement (chloride induced, carbonation induced), Alkali-silica reaction, sulphate attack, Acid attack. Deterioration due to water leakage, fire – detection & mitigation of the same. Deterioration due to ageing, inadequate maintenance, Design & construction deficiencies, overloading etc. Types of cracks, causes & characteristics of cracking in various structural components like beam, column, slab, masonry walls. Measurement of cracks, interpretation of the cause of particular type of crack.	6L+3T		
Module 3	Conditional/damage assessment & Evaluation of structures: Structural assessment; Conditional evaluation / Structural Appraisal of the structure – Importance, objective & stages, Conditional/damage assessment procedure, Preliminary & Detailed investigation – Scope, Objectives, Methodology & Rapid visual inspection of structures Damage Assessment allied Tests (Destructive, Semi-destructive, Nondestructive): Field & laboratory testing procedures for evaluating the structure for strength, corrosion activity, performance & integrity, durability, Interpretation of the findings of the tests	6L+3T		
Module 4	Repairs, rehabilitation & Retrofitting of concrete structures: Repair materials - Criteria for durable concrete repair, Methodology, performance requirements, repair options, selection of repair materials, Preparatory stage of repairs, Different types of repair materials & their application, types of repair techniques. Retrofitting/Strengthening: Need for retrofitting, Design philosophy of strengthening structures, Techniques available for strengthening including conventional and advanced techniques. Seismic retrofit of concrete structures: Deficiencies in structure requiring seismic retrofit, Design philosophy, Techniques to enhance the seismic resistance of structures, advanced techniques for making seismic resistant structures	9L+3T		
Module 5	Protection & maintenance of structures - Importance of protection & maintenance, Categories of maintenance, Building maintenance, Corrosion mitigation techniques to protect the structure from corrosion. Long term health monitoring / Structural health monitoring (SHM)- Definition and motivation for SHM, Basic components of SHM and its working mechanism, SHM as a tool for proactive maintenance of structures.	4L+3T		
Reference	Sl.	Book Name	Author	Publishing House
	1	Handbook on repair and rehabilitation of RCC buildings	CPWD, Government of India	
	2	Failures and repair of concrete structures	S. Champion	John Wiley and Sons
	3	Diagnosis and treatment of structures in distress	R.N.Raikar	R & D Centre of Structural Designers and Consultants Pvt.Ltd
	4	Handbook on seismic retrofit of buildings	A. Chakrabarti et.al	Narosa Publishing House
	5	Repair and protection of concrete structures	Noel P. Mailvaganam	CRC Press
	6	Concrete repair and maintenance	Peter H. Emmons	Galgotia publications
	7	Maintenance, Repair & Rehabilitation and Minor works in Building	P.C. Varghese	PHI
	8	Concrete Structures Repair Rehabilitation and Retrofitting	J Bhattacharjee	CBS
	9	Repair & Rehabilitation of Concrete Structures	Modi and Patel	PHI

CE(PE)702C	Finite Element Method	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to 1. Obtain an understanding of the fundamental theory of the FEA method. 2. Develop the ability to generate the governing FE equations for systems governed by partial differential equations.		

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	3. Understand the use of the basic finite elements for structural applications using truss, beam, frame, and plane elements and		
Prerequisite	Basic Mathematics		
Module 1	Introduction to Finite Element Analysis: Basic Concepts of Finite Element Analysis and its necessity		2L
Module 2	Numerical tools for Finite Element Formulation: Variational Principle Ritz method, Weighted residual method, Galerkin approach, Petrov-Galerkin approach.		2L+2T
Module 3	Finite element Formulation: Formulation of Euler-Bernoulli beam element and Timoshenko beam element, Imposition of boundary conditions		2L+2T
Module 4	Elements and their properties: One dimensional and Two dimensional elements (Bar element, Beam element, Plate element), Interpolation functions, Numerical integration.		2L+2T
Module 5	Finite element solutions: Formulation of stiffness matrix and solution of beam, plate and truss problems, Problems on Plates with cutout, Introduction to the software SAP2000.		2L+2T
Reference	Sl.	Book Name	Author
	1	An Introduction to the Finite Element Method	Reddy J.N
	2	Matrix and Finite Element Analyses of Structures	Mukhopadhyay
	3	Concepts and Applications of Finite Elements Analysis	Cook R.D, Malkus, Plesha and Witt
	4	Finite Element Analysis: Theory and Programming	Krishnamoorty C. S.
	5	Introduction to Finite Elements in Engineering	Chandrupeta and Belegundu
	6	Finite Element Method with Applications in Engineering	Desai
	7	Finite Element Procedures	Bathe

CE(PE)703A	Air and Noise Pollution and Control	2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Define the basic concepts and terminologies regarding air pollution and noise pollution; 2. Describe the physics of air pollution and noise pollution 3. Apply the methods of air pollution and noise pollution measurements 4. Analyze different concepts of air and noise pollution solving mathematical problems 5. Compare air and noise quality with allowable standards and limits 6. Choose and design proper techniques for air pollution control and noise pollution control		
Prerequisite	Class-XII level knowledge of Physics, Chemistry, Mathematics, Biology and Environmental Science; Undergraduate level knowledge of Statistics and Environmental Engineering		
Module 1	Air Pollutants Sources, Classification; Effects on Human, Vegetation, Material Effects of Air pollution on Atmosphere: Photochemical Smog, Ozone Layer Depletion, Acid Rain, Greenhouse Effect and Global Warming	4L+2T	
Module 2	Air Pollution Meteorology Lapse Rate; Atmospheric Stability; Inversion; Plume Pattern	2L+1T	
Module 3	Dispersion of Air Pollutants Point Source Gaussian Plume Model, Stability Classes, Stability Charts, Design of Stack Height	2L+1T	
Module 4	Air Quality Methods of Measurement: Gaseous pollutants, Particulate pollutants Air Quality Standards and Indices: Ambient Air Quality Standard, NAAQS, Emission Standard, Air Quality Indices	4L+2T	
Module 5	Air Pollution Control Control of Gaseous Pollutants: Adsorption, Absorption, Condensation Control of Particulate Pollutants: Settling chambers, Cyclone separators, Wet collectors, Fabric filters, Electrostatic precipitators Control of Pollution from Automobiles	3L+2T	
Module 6	Physics of Noise Basics of Acoustics: Sound Pressure, Power and Intensity and their Interrelations	1L+1T	
Module 7	Measurement of Noise Noise Level: Interrelation between Noise, Pressure, Power and Intensity Levels; Noise Meter; Noise Networks; Frequency Band Analysis; Decibel	4L+2T	

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	Addition Measurement of Community Noise: L_{eq} , L_{dn} , L_{dnt}			
Module 8	Source and Effect of Noise Psychoacoustics and noise criteria; effects of noise on health; annoyance rating schemes			1L+1T
Module 9	Noise Pollution Control Noise Standards and Limits; Methods of Noise Pollution Control			3L+1T
Reference	Sl.	Book Name	Author	Publishing House
	1	Introduction to Environmental Engineering and Science	Masters, G.M., Ela, W.P.	Prentice Hall / Pearson
	2	Environmental Engineering: A Design Approach.	Sincero, A., Sincero, G.	Prentice Hall
	3	Environmental Engineering, Volume-1 and Volume-2	Garg, S.K.	Khanna Publishers
	4	Air Pollution	Rao, M.N., Rao, H.V.N.	Tata McGraw Hill

CE(PE)703B	Physico-Chemical Processes for Water and Wastewater Treatment	2L + 1T	3 Credits	
Course Outcome	On completion of the course the students will be able to: <ol style="list-style-type: none"> 1. Define the basic concepts and terminologies regarding physico-chemical treatment of water and wastewater 2. Describe the physics, chemistry and hydraulics of different unit operations and processes for water and wastewater treatment. 3. Analyze different physico-chemical water and wastewater treatment options solving mathematical problems 4. Design different physico-chemical treatment processes to treat water and wastewater 			
Prerequisite	Class-XII level knowledge of Physics, Chemistry, Mathematics, Biology and Environmental Science; Undergraduate level knowledge of Engineering Physics, Engineering Chemistry, Fluid Mechanics and Hydraulics and Environmental Engineering			
Module 1	Introduction and Basic Concepts Water purification in natural systems, physical processes, chemical processes and biological processes; Primary, secondary and tertiary treatment; Unit operations, unit processes		2L+2T	
Module 2	Aeration Aeration and Gas Transfer		2L	
Module 3	Sedimentation Sedimentation, different types of settling; sedimentation tank design		3L+1T	
Module 4	Clariflocculation Coagulation and flocculation; Coagulation processes, Stability of colloids; Destabilization of colloids; Destabilization in water and wastewater treatment; Transport of colloidal particles; Design aspects		4L+2T	
Module 5	Filtration Filtration processes; Hydraulics of flow through porous media; Rate control patterns and methods; Filter effluent quality parameters; Mathematical model for deep granular filters; Slow sand filtration, Rapid sand filtration, Precoat filtration; design aspects		4L+2T	
Module 6	Disinfection Types of disinfectants; Kinetics of disinfection; Chlorination and its theory; Design of Chlorinators		3L+1T	
Module 7	Precipitation Hardness removal; Iron, Manganese, and Heavy metal removal		3L+1T	
Module 8	Adsorption Adsorption equilibria and adsorption isotherm; Rates of adsorption; Sorption kinetics in batch reactors; Continuous reactors; Factors affecting adsorption		3L+1T	
Module 9	Ion Exchange Processes Materials and reactions; Methods of operation; Application; Design aspects		3L+1T	
Module 10	Membrane Processes Reverse osmosis, Ultrafiltration, Electrodialysis		3L+1T	
Reference	Sl.	Book Name	Author	Publishing House
	1	Environmental Engineering, Volume-1 and Volume-2	Garg, S.K.	Khanna Publishers
	2	Environmental Engineering: A Design Approach.	Sincero, A., Sincero, G.	Prentice Hall

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

3	Environmental Engineering	Peavy, H.S. Rowe, D.R. Tchobanoglous, G	Tata McGraw Hill Indian Edition
4	Manual on Water Supply and Treatment	CPHEEO	Govt. of India
5	Manual on Sewerage and Sewage Treatment	CPHEEO	Govt. of India
6	Manual on Municipal Solid Waste Management.	CPHEEO	Govt. of India
7	Water Works Engineering: Planning, Design and Operation	Qasim, S.R., Motley, E.M. Zhu, G.	Prentice Hall
8	Waste Water Treatment Plants: Planning, Design and Operation	Qasim, S.R.	CRC Press
9	Water Engineering: Hydraulic, Distribution and Treatment.	Shammas, N.K., Wang, L.K.	Wiley
10	Water Quality Engineering: Physical / Chemical Treatment Processes.	Benjamin, M.M., Lawler, D.F.	Wiley

CE(PE)703C	Water and Air Quality Modelling	2L + 1T	3 Credits	
Course Outcome	On completion of the course the students will be able to: 1. Define the basic concepts and terminologies regarding water and air quality modelling 2. Describe the background mechanisms in modeling water and air quality 3. Analyze different water and air quality models solving mathematical problems 4. Apply the concepts of air and water quality modeling in air and water pollution control and management			
Prerequisite	Class-XII level knowledge of Physics, Chemistry, Mathematics, Biology and Environmental Science; Undergraduate level knowledge of Engineering Statistics, Engineering Physics, Engineering Chemistry, Fluid Mechanics and Hydraulics and Environmental Engineering			
Module 1	Introduction to Water Quality Models Introduction to mathematical models; Water quality model development; Calibration and verification; Cost benefit analysis using models; Model requirements and limitations	4L+2T		
Module 2	Dissolved Oxygen Model for Streams Sources and sinks of dissolved oxygen; Estimation of system parameters; Streeter Phelps model, oxygen 'sag' curve, Determination of deoxygenation and re-aeration coefficients; Benthic oxygen demand; Mass transport mechanisms	6L+2T		
Module 3	Models for Estuary and Lakes Physical chemical and biological processes in estuaries and lakes	4L+2T		
Module 4	Introduction to Air Quality Models Micrometeorological processes, Wind rose, Dispersion coefficients and Stability classes	4L+2T		
Module 5	Dispersion Models Point Source Gaussian Dispersion Model, Stack height computation; Line Source Models; Box Models	7L+3T		
Module 6	Air Quality Models Regional air quality models, Source inventories and significance	4L+2T		
Reference	Sl.	Book Name	Author	Publishing House
	1	Environmental Engineering: Volume-1 and Volume-2	Garg, S.K.	Khanna Publishers
	2	Environmental Engineering	Peavy, H.S. Rowe, D.B. Tchobanoglous, G	Tata McGraw Hill Indian Edition
	3	Introduction to Environmental Engineering and Science.	Masters, G.M., Ela, W.P.	Prentice Hall / Pearson

CE(PE)704A	Structural Dynamics	2L + 1T	3 Credits
Course Outcome	At the conclusion of this course, the students will have an understanding of: 1. Fundamental theory of dynamic equation of motion 2. Fundamental analysis methods for dynamic systems 3. Dynamic properties and behaviour of civil structures		



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	4. Modelling approach of dynamic response in civil engineering applications			
Prerequisite	Introduction to Solid Mechanics (CE(ES)402), Structural Analysis – I (CE(PC)503), Structural Analysis – II (CE(PE)602B), and Engineering Mathematics (Differential Equation)			
Module 1	Basics of Structural Dynamics: Introduction of Structural Dynamics, Differential Equations in Civil Engineering, Types of Analysis/Static and Dynamic load, Degrees of Freedom (Ex. Generation of Stiffness matrix), Dynamic Equilibrium Equation.		3L+2T	
Module 2	Free Vibration of SDOF: Undamped free Vibration, Natural Period/Frequency, Energy in Free Vibration, Damped Free Vibration, Types of damping, Logarithmic decrement equation Forced Vibration of SDOF: Undamped Forced vibration, Amplitude & Phase Angle, Dynamic amplification factor for deflection (Rd), Damped Forced vibration, Relationship between Rd, Rv and Ra		8L+4T	
Module 3	Force Transmission, Vibration Measurement: Resonant frequency and Half power band width, Force Transmission and Isolation, Design of Vibration Measuring Instruments		3L+1T	
Module 4	Response to Arbitrary Motions: Response to Unit Impulse, Response to Arbitrary Force (Duhamel's Integral), Response to Step and Ramp Forces, Response to Rectangular Pulse, Half Sinusoidal wave		2L	
Module 5	Numerical Methods of Solution: Time Stepping Methods, Central Difference Method, Newmark's Method		2L	
Module 6	Response Spectrum: Concept of Response Spectrum, Uses of Response Spectrum, Special Cases in Spectrum, Development of Tripartite Plot, -Example: Base Shear and Base Moment, Response of Structure in Frequency Domain		3L+2T	
Module 7	Multi-Degree of Freedom Systems: Equation of Motion for MDOF System, Solution of Equation, Natural Frequencies and mode Shapes (60), Modal Orthogonality, Approximate Method for finding Natural frequency.		2L+1T	
Module 8	Earthquake Response of MDOF Systems: Time History Analysis, Response Spectrum Analysis, 3D Dynamic Analysis		2L	
Module 9	Dynamic Response of Continuous Systems: Vibration of Continuous systems, Shear behaviour and bending behaviour, Generalized SDOF		2L	
Module 10	Dynamics of Rigid Blocks: Dynamics of Rigid Blocks, Non Structural Elements, Floor Response Spectrum		2L	
Module 11	Vibration Control: Introduction to Vibration Control, Active Control, Passive Control, Design of Tuned Mass Damper		2L+1T	
Reference	Sl.	Book Name	Author	Publishing House
	1	Structural Dynamics (Theory and Computation)	Mario Paz.	CBS Publishers
	2	Dynamics of Structure (Theory and Application to Earthquake Engineering)	A.K.Chopra	Pearson Education
	3	Dynamics of Structures	Ashok K. Jain	Pearson Education

CE(PE)704B	Advanced Structural Analysis		2L + 1T	3 Credits
Course Outcome	After going through this course, the students will be able to: 1. Basic Knowledge of the student will increase 2. Student will be able to apply stiffness and flexibility method using system approach. 3. Student will understand the yield conditions from their knowledge of stress-strain relations. 4. Student will be able to solve simple plate and shell problems			
Prerequisite	Introduction to Solid Mechanics (CE(ES)402), Structural Analysis – I (CE(PC)503), Structural Analysis – II (CE(PE)602B)			
Module 1	Matrix methods of structural analysis: Application of matrix methods to plane truss, beams, continuous frames		9L+5T	
Module 2	Finite difference and relaxation technique-application to simple problems.		6L+3T	
Module 3	Theory of plate bending: Navier's Solutions, Levy's solution, Plate buckling problem, Membrane theory of domes and cylindrical shells.		7L+3T	
Module 4	Theory of Elasticity: Three dimensional stress and strain analysis, stress strain transformation, stress invariants, equilibrium and compatibility equations. Two dimensional problems in Cartesian and polar coordinates. Plane stress, plane strain problems, St. Venant's principle		6L+1T	
Reference	Sl.	Book Name	Author	Publishing House
	1	Matrix, finite element, computer and	Mukhopadhyay	ANE Books

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	structural analysis.		McGrawHill
2	Intermediate Structural analysis	Wong	McGrawHill
3	Theory of Plates and Shells	Timoshenko & Krieger	McGrawHill
4	Theory of Elasticity	Timoshenko & Goodier	McGrawHill
5	Analysis of Structures	T. R. Chandrasekhar	Oxford University Press

CE(PE)704C	Coastal Hydraulics and Sediment Transport	2L + 1T	3 Credits	
Course Outcome	<p>On successful completion of this course, student should be able to:</p> <ol style="list-style-type: none"> 1. Explain and quantify coastal wave processes including wave generation, propagation, refraction, shoaling, diffraction, and breaking. 2. Explain and quantify coastal wave properties important to coastal engineering, including wave heights, speeds, induced water velocities, pressures, making appropriate approximations for deep and shallow waters. 3. Characterize and quantify basic coastal sediment transport processes and rates. 4. Analyze coastal sites to determine design waves by utilizing historical and bathymetric data. Estimate hydrodynamic forces on coastal structures. 			
Prerequisite	Introduction to Civil Engineering (CE/EE/02), Introduction to Fluid Mechanics (CE/EE/01), Water Resources Engineering (CE/PC/02).			
Module 1	Introduction: Basic understanding of wave mechanics including wave generation, propagation, form and assessment in the coastal zone. Statistical and spectral analysis of recorded wave data and prediction in coastal zone.		6L	
Module 2	Tides and currents: The equilibrium tide. Dynamic modifications of the equilibrium tide. Modification of tidal pattern. Tidal streams. Tidal forces.		6L	
Module 3	Waves: The linear theory of waves. Waves of finite height. Wind waves. Waves in shoaling water. Refraction of waves. Reflection of waves. Diffraction of waves. Oscillations in a harbour. Ship waves.		6L	
Module 4	Sediment Transport: Basic concepts. Transport modes. Material in suspension. Bed Load. Turbidity and density currents. Banks and channels in river estuaries. Regime of the sea bed. Vertical distribution of suspended sediment in waves and current over a plane bed.		6L	
Module 5	Littoral drift: Definition of limit for littoral drift. The effect of grain size. The beach profile. Longshore transport of material. Coastal features.		6L	
Module 6	Coastal Structures: Types and use. Effect of construction of coastal structures on stability of abutment beaches, shoreline configuration.		6L	
Reference	Sl. No.	Book Name	Author	Publishing House
	1	Coastal hydrodynamics	J. S. Mani	Prentice-Hall of India Ltd. 2012
	2	Advances in Coastal Hydraulics	V. Parthasarathy, J. Kalishetti	World Scientific Publishing Company, 2014
	3	Basic Coastal Engineering	B. M. Sorenson	Springer, 2010
	4	Computational Modeling in Hydraulic and Coastal Engineering	C. Kourtas and P. D. Scarlatos	CRC Press, 2016

CE(PE)705A	Railway and Airport Engineering	2L + 0T	2 Credits
Course Outcome	<p>Students will be able to:</p> <ol style="list-style-type: none"> 6. Explain the basics in planning functional components of Railway and Airport. 7. Illustrate the engineering concepts of construction, operation and maintenance of Railway and Airport components. 8. Interpret the geometric design parameters of Railway. 9. Decide the runway orientation of proposed runway on the basis of previous wind data analysis. 10. Assess the basic runway length parameters. 		
Prerequisite	Class-XII level knowledge of Physics, Mathematics; Undergraduate level knowledge of Strength of Materials		
Module 1	Railway Engineering Introduction to Railway Engineering. Socio-economic impact of Indian Railways; Zonal classification of Indian Railways; Railway track gauge; Classification of Indian Railways based on Speed Criteria.		20L



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	Permanent Way (P-way): Components – Rails, Rail joints, Sleepers, Ballast, Fastenings, Sub-grade. Track Alignment and Engineering Survey: Basic requirement of good alignment: Factors in selection of good alignment; Engineering Survey-Track Stresses; Geometric Design: Gradient, Speed, Degree of Curve, Super-elevation, Transition curve, Widening of gauge on curves, Shift, Points and Crossings; Station and Yards; Signalling and Control Systems.																					
Module 2	Airport Engineering Airport Site Selection: Airport layout; Functions and planning of the Airfield components – runway, taxiway and Aprons, hanger, terminal building and control tower; Design of Runway and Taxiway; Runway orientation: Windrose diagrams.	10L																				
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A Textbook of Railway Engineering</td> <td>Saxena S.P. & Arora S.P.</td> <td>Dhanpat Rai & Sons</td> </tr> <tr> <td>2</td> <td>Indian Railway Track</td> <td>Agarwal M.M</td> <td>Sachdeva Press</td> </tr> <tr> <td>3</td> <td>Airport Planning & Design</td> <td>Khanna S.K., Arora M.G & Jain S.S</td> <td>Nemchand Brothers</td> </tr> <tr> <td>4</td> <td>Planning & Design of Airports</td> <td>Horonjeff R. & McKelvey F</td> <td>Mc. Graw Hill.</td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	A Textbook of Railway Engineering	Saxena S.P. & Arora S.P.	Dhanpat Rai & Sons	2	Indian Railway Track	Agarwal M.M	Sachdeva Press	3	Airport Planning & Design	Khanna S.K., Arora M.G & Jain S.S	Nemchand Brothers	4	Planning & Design of Airports	Horonjeff R. & McKelvey F	Mc. Graw Hill.	
Sl.	Book Name	Author	Publishing House																			
1	A Textbook of Railway Engineering	Saxena S.P. & Arora S.P.	Dhanpat Rai & Sons																			
2	Indian Railway Track	Agarwal M.M	Sachdeva Press																			
3	Airport Planning & Design	Khanna S.K., Arora M.G & Jain S.S	Nemchand Brothers																			
4	Planning & Design of Airports	Horonjeff R. & McKelvey F	Mc. Graw Hill.																			

CE(PE)705B	Pavement Design	2L + 0T	2 Credits																								
Course Outcome	At the end of the course, the student will be able to: 1. Differentiate between different types of pavements, both structurally and functionally. 2. Conduct Axle Load Survey and Estimate Design Traffic. 3. Analyze and design bituminous and cement concrete pavement using. 4. Understand the principles of Pavement Maintenance and identify various pavement distresses.																										
Prerequisite	Transportation Engineering (CE(PE)506)																										
Module 1	Pavement Design Flexible Pavement Design: Stresses and Deflections in homogeneous masses; Burmister's two layer theory; Three layer and multi-layer theories; wheel load stresses, various factors in traffic wheel loads; ESWL of multiple wheels; McLeod method of design; AASTHO method of flexible pavement design. Low Volume Rigid Pavement: Criteria of Load, Scope and Specifications as per different Govt policies in India, Design Criteria.		15L																								
Module 2	Pavement Construction and Management Flexible Pavement Construction: Earthwork (Method of Alignment-wise marking using chainage), compaction of embankments, construction methods and field control checks for various types of flexible pavement materials in sub-base, base, binder and surface course layers. Construction procedure of Low Volume Rigid Pavement.		9L																								
Module 3	Pavement Evaluation - Pavement Distress Functional condition evaluation of pavements- Roughness, Skid Resistance, Serviceability Index; Structural evaluation of pavements – Benkelman beam and Falling Weight Deflectometer; Pavement strengthening; Design of bituminous and concrete overlays as per IRC		8L																								
Reference	<table border="1"> <thead> <tr> <th>Sl.</th> <th>Book Name</th> <th>Author</th> <th>Publishing House</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Principles of Pavement Design</td> <td>E. J. Yoder & M.W. Witack</td> <td>John Wiley and Sons</td> </tr> <tr> <td>2</td> <td>Pavement Analysis and Design</td> <td>Yang H. Huang</td> <td>Pearson</td> </tr> <tr> <td>3</td> <td>Principles of Transportation Engineering</td> <td>P. Chakraborty & A. Das</td> <td>PHI</td> </tr> <tr> <td>4</td> <td>Highway Engineering</td> <td>Khanna & Justo</td> <td>Nemchand & Brothers</td> </tr> <tr> <td>5</td> <td>Relevant latest IRC Codes (IRC-37 – 2001, IRC-37 – 2012, IRC 58 – 2015, IRC 81 – 1997-</td> <td></td> <td></td> </tr> </tbody> </table>	Sl.	Book Name	Author	Publishing House	1	Principles of Pavement Design	E. J. Yoder & M.W. Witack	John Wiley and Sons	2	Pavement Analysis and Design	Yang H. Huang	Pearson	3	Principles of Transportation Engineering	P. Chakraborty & A. Das	PHI	4	Highway Engineering	Khanna & Justo	Nemchand & Brothers	5	Relevant latest IRC Codes (IRC-37 – 2001, IRC-37 – 2012, IRC 58 – 2015, IRC 81 – 1997-				
Sl.	Book Name	Author	Publishing House																								
1	Principles of Pavement Design	E. J. Yoder & M.W. Witack	John Wiley and Sons																								
2	Pavement Analysis and Design	Yang H. Huang	Pearson																								
3	Principles of Transportation Engineering	P. Chakraborty & A. Das	PHI																								
4	Highway Engineering	Khanna & Justo	Nemchand & Brothers																								
5	Relevant latest IRC Codes (IRC-37 – 2001, IRC-37 – 2012, IRC 58 – 2015, IRC 81 – 1997-																										

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	Indian Road Congress	
--	----------------------	--

CE(PE)705C	Transportation System Planning	2L + 0T	2 Credits
Prerequisite	Transportation Engineering (CEPE7000)		
Module 1	Introduction Importance of transportation, transportation planning methodology, hierarchical levels of planning and its relation to rural, urban areas. Long range planning, Passenger and goods transportation, General concept and process of transport planning, Land-use transport interactions, Socio-economic characteristics of Land use		5L
Module 2	Transportation System Multi modal transportation system; Characteristics of Mass Transit systems including technical, demand operational and economic problems, fixed Track Facility, Mass Rapid Transit System Elevated, Surface and Underground construction, integrated Operating Characteristics of Terminal and Transfer facilities		10L
Module 3	Transport planning Studies: Urban Travel Characteristics, Private and Public Behaviour analysis, Transportation demand Surveys, Delineation of the urban area, zoning, Origin-Destination Studies, Home Interviews, trip Classification. Methodology: Study of existing network-trip generation techniques, Category analysis, multiple regression techniques, Modal split analysis, Trip distribution techniques, Growth Factor model, Gravity models, Opportunity models and multiple regression models.		15L

Semester VIII [Fourth year]

CE(HS)801A	Professional Practice, law & Ethics	2L	2 Credits
Module 1	Professional Practice – Respective roles of various stakeholders: Government/constituting regulatory bodies and standardization organizations, prescribing norms to ensure safety of the citizens; Standardization Bodies (ex. BIS, IRC/formulating standards of practice) professional bodies (ex. Institution of Engineers(India), Indian Roads Congress, IA/COA, ECI, Local Bodies/ Planning Authorities) (certifying professionals and offering platforms for interaction); Clients/ owners (role governed by contracts); Developers (role governed by regulations such as REEA); Consultants (role governed by bodies such as CEAD); Contractors (role governed by contracts and regulatory Acts and Standards); Manufacturers/ Vendors/ Service agencies (role governed by contracts and regulatory Acts and Standards)		4L
Module 2	Professional Ethics – Definition of Ethics, Professional Ethics, Business Ethics, Corporate Ethics, Engineering Ethics, Personal Ethics, Code of Ethics as defined in the website of Institution of Engineers (India); Profession, Professionalism, Professional Responsibility, Professional Ethics; Conflict of Interest, Gift Vs Bribery, Environmental breaches, Negligence, Deficiencies in state-of-the-art, Vigil Mechanism, Whistleblowing, protected disclosures		
	General Principles of Contracts Management: Indian Contract Act, 1972 and amendments covering General principles of contracting; Contract Formation & Law; Privacy of contract; Various types of contract and their features; Valid & Voidable Contracts; Prime and subcontracts; Joint Ventures & Consortium; Complex contract terminology; Tenders, Request For Proposals, Bids & Proposals; Bid Evaluation; Contract Conditions & Specifications; Critical / Red Flag conditions; Contract award & Notice To Proceed; Variations & Changes in Contracts; Differing site conditions; Cost escalation; Delays, Suspensions & Terminations; Time extensions & Force Majeure; Delay Analysis; Liquidated damages & Penalties; Insurance & Taxation; Performance and Excusable Non-performance; Contract documentation; Contract Notices; Wrong practices in contracting (Bid shopping, Bid fixing, Cartels); Reverse auction; Case Studies; Build-Own-Operate & variations; Public-Private Partnerships; International Commercial Terms.		18L

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

Module 3:	Arbitration, Conciliation and ADR (Alternative Dispute Resolution) system; Arbitration – meaning, scope and types – distinction between laws of 1940 and 1996; UNCITRAL model law – Arbitration and expert determination; Extent of judicial intervention; International commercial arbitration; Arbitration agreements – essential and kinds, validity, reference and interim measures by court; Arbitration tribunal – appointment, challenge, jurisdiction of arbitral tribunal, powers, grounds of challenge, procedure and court assistance; Award including Form and content, Grounds for setting aside an award; Enforcement, Appeal and Revision; Enforcement of foreign awards – New York and Geneva Conventions Awards; Distinction between conciliation, negotiation, mediation and arbitration; confidentiality resort to judicial proceedings, costs; Dispute Resolution Boards; Lok Adalats.	5L		
Module 4:	Engagement of Labour and Labour & other construction-related Laws; Role of Labour in Civil Engineering; Methods of engaging labour- on rolls, labour sub-contract, piece rate work; Industrial Disputes Act, 1947; Collective bargaining; Industrial Employment (Standing Orders) Act, 1948; Workmen's Compensation Act, 1923; Building & Other Construction Workers (regulation of employment and conditions of service) Act (1996) and Rules (1998); BERA Act 2017, NBC 2017	2L		
Module 5:	Law relating to Intellectual property: Introduction – meaning of intellectual property, main forms of IP: Copyright, Trademarks, Patents and Designs, Secrets; Law relating to Copyright in India including Historical evolution of Copy Rights Act, 1957, Meaning of copyright – computer programs, Ownership of copyrights and assignment, Criteria of infringement, Piracy in Internet – Remedies and procedures in India; Law relating to Patents under Patents Act, 1970 including Concept and historical perspective of patents law in India, Patentable inventions with special reference to biotechnology products; Patent protection for computer programs, Process of obtaining patent – application, examination, opposition and sealing of patents, Patent cooperation treaty and grounds for opposition, Rights and obligations of patentee, Duration of patents – law and policy considerations, Infringement and related remedies.	1L		
Reference	Sl.	Book Name	Author	Publishing House
	1	Legal Aspects of Building and Engineering Contracts	B.S. Paril	
	2	The National Building Code	BIS	
	3	Indian Contract Act	Dutta	Eastern Law House
4	The Arbitration & Conciliation of Law in India with case law on UNCITRAL Model Law on Arbitration	Kwatra G.K.	Indian Council of Arbitration	

CE(PE)801A	GIS & Remote Sensing	2L	2 Credits
Course Outcome	Upon completing the course, the students will be able to: 14. Define and state the scope GIS & remote sensing in civil engineering 15. Understand the basic principles of remote sensing and GIS 16. Apply the various methods of remote sensing and GIS to different geospatial datasets 17. Analyze the different results obtained from different remote sensing data sources 18. Evaluate the different results in solving real world problems. 19. Design and construct optimum solutions for real world problems that can be resolved by GIS & remote sensing		
Prerequisite	Knowledge of Class-XII level physics, computer science Knowledge of CE(PC)404 and CE(PC)494		
Module 1	Fundamentals of Remote Sensing: Energy sources and radiation principles, Electromagnetic Spectrum, Energy interactions in the atmosphere and with earth surface features; Atmospheric windows; Spectral response patterns and spectral signatures	3L	
Module 2	Digital Image Processing: Image rectification and restoration; Image enhancement; Image classification; Accuracy assessment; Digital change detection; Spatial, spectral, radiometric and temporal resolution characteristics of IRS, Landsat and Sentinel data.	6L	
Module 3:	Advanced Remote Sensing Microwave remote sensing; Frequency and wavelengths, polarization, range and azimuth resolution, relief displacement, foreshortening, layover, shadows and speckles; Synthetic Aperture Radar (SAR); Indian microwave sensors; Working principles of LiDAR remote sensing	3L	
Module 4:	Advanced Digital Image Processing:	3L	

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	Principal Component Analysis (PCA), Colour Space Transformation, Fourier Transformation, Image fusion, Hybrid classification system			
Module 5:	GIS Definition, components and applications of GIS, Spatial and attribute data, Raster vs. Vector GIS, Concept of topology, Non-topological data structures	3L		
Module 6	Database and Coordinate System Concepts of Relational Data Base Management System (RDBMS) and geodatabase, Spatial and attribute query; Datum and projection; Universal Transverse Mercator (UTM) grid system; On-the-fly projection	3L		
Module 7	Spatial Data Analysis Concepts of local, focal, zonal and global analysis; Proximity analysis; Distance measurement, Raster and vector overlay; Spatial interpolation; DEM and TIN, Cost surface analysis	6L		
Module 8	Applications of GIS & Remote Sensing: Watershed analysis; Runoff and erosion modelling; Location and allocation analysis; Atmospheric pollution monitoring; Urban growth modelling; Carbon sequestration and climate change	5L		
Reference	Sl.	Book Name	Author	Publishing House
	1	Remote Sensing and Image Interpretation	Thomas M. Lillesand Ralph W. Kiefer Jonathan W. Chipman	Wiley India Edition
	2	Introduction to Geographic Information Systems	Kang-Young Chang	Tata McGraw-Hill Publishing Company Limited
	3	Remote Sensing and GIS	Basudeb Bhatta	Oxford University Press
	4	Remote Sensing of Environment: An Earth Resource Perspective	J. R. Jensen	Pearson
	5	Applications of Geomatics in Civil Engineering	J. K. Ghosh I. de Silva (Eds.)	Springer
	6	Introductory Digital Image Processing: A Remote Sensing Perspective	J. R. Jensen	Pearson
	7	Concepts and Techniques of Geographic Information Systems	C. P. Lo A. K. W. Yeung	Pearson

CE(PE)801B	Rock Mechanics	2L	2 Credits	
Module 1	Composition of rocks, Engineering classification and Limitation of Geologic classification of rocks		4L	
Module 2	Rock coming, various methods of obtaining rock cores, Engineering Properties of rock, stress-strain relations, elastic theory application to design in rock.		6L	
Module 3:	Strength and failure of rocks, Uniaxial and triaxial strength of rocks, failure theories of rocks and propagation of cracks, Griffith Crack theory, Water in rock, Structural feature of mass rocks and their effects on engineering properties.		8L	
Module 4:	Measurement of stresses -rock mass, various types of measuring devices, evaluation of properties of rocks in the field.		6L	
Module 5:	Strain and displacement of the rock mass, rock reinforcement and support, subsidences.		6L	
Reference	Sl.	Book Name	Author	Publishing House
	1	Engineering Rock Mechanics: An Introduction to the Principles	J. A. Hudson and J. P. Harrison	
	2	Rock Mechanics: For Underground Mining	Barry H.G.	
	3	Empirical Rock Failure Criteria	P.R. Sheorey, Balkema, Rotterdam	
	4	Rock Mechanics in Engineering Practice	K.G. Stagg and O.C. Zienkiewicz.	John Wiley and Sons
	5	Hand Book on Mechanical Properties of Rocks	V.S. Varukuri and R.D. Lama	
	6	Rock Mechanics for Engineers	B.P. Verma	
7	Engineering Behavior of Rocks	W. Farmer.	Chapman and Hall	

86



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

CE(PE)801C	Environmental Laws and Policy	2L	2 Credits	
Course Outcome	Upon completing the course, the students will be able to: <ol style="list-style-type: none"> 1. To apply the relevant measures to mitigate pollution from different sources. 2. To understand the effects of the various pollutants on the environment as a whole according to the formulated guidelines 3. To be able to give recommendations for alternatives to reduce pollution 4. To formulate standards of the various parameters corresponding to their impact on the environment with changing time 			
Prerequisite	Basic Science, Biology, Environmental Science and Environmental Engineering (Including Air Quality Dispersion, Meteorology, Solid Waste Management, EIA)			
Module 1	Introduction: Environment, Nature, Ecosystem, Origin of Environmental laws, Concept of laws and policies, Environment and Governance	3L		
Module 2	Sustainable Development and Environment: Understanding of Climate change Concept of Carbon Footprint, Carbon Credit, Carbon Offsetting Use of Hybrid Energy (Conventional + Non Conventional) Use of Clean Development Mechanism	6L		
Module 3:	Environmental Laws (Indian Perspective): Indian Environmental Laws and Policies	8L		
Module 4:	Environmental Laws (International Perspective): Fundamental Principles and Application of International Environmental Law, Introduction to Trade and Environment Right to Environment as Human Right International Humanitarian Law and Environment Environment and Conflict Management Focus on International Protocols: UNFCCC & Kyoto Protocol, Treaty on Antarctic & Polar Regions, UN Conventions of Law of the Sea and Regional Sea Convention, Law on International Water Courses	11L		
Reference	Sl.	Book Name	Author	Publishing House
	1	Environmental Law and Policy	Aruna Venkat	PHI Publication
	2	Environmental Law and Policy	James Salzman & Burton H. Thompson (Jr.)	Foundation Press
	3	Environmental Law	Gurdip Singh	Eastern Book Company
	4	Climate Change, Law, Policy and Governance	Usha Tandon	Eastern Book Company

CE(PE)801D	Pavement Materials	2L	2 Credits
Module 1	Introduction Basic road construction materials: Types of basic materials, Suitability of different materials depends on their availability and characteristics, Economic, Environmental, and Social issues of material usage, Life cycle analysis and its use in design	3L	
Module 2	Soil Classification; Index & Engineering properties of soil, Properties of sub-grade, Suitability of different type of soil for the construction of highway embankments and pavement layers; Field compaction and control, Introduction to Soil Stabilization: Physical and Chemical modification, Stabilization with admixtures like cement, lime, calcium chloride, fly ash and bitumen. A critical look at the different laboratory and in-situ procedures for evaluating the mechanical properties of soils viz. CBR, Plate Load test, resilient modulus, DCTT	7L	
Module 3:	Aggregate Characterization: Origin, classification, properties, Tests and specifications on road aggregates for flexible and rigid pavements, Importance of aggregate gradation problems on Rothfotel's and Critical sieve methods and Shape factor in mix design	6L	
Module 4:	Bitumen Binders Different types, properties and uses, Tests on bitumen, Rheological and pavement performance related properties, Criteria for selection of different binders, Marshall Method of mix design, Additives & Modifiers in Bituminous	6L	

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	mixes, problems on mix design			
Module 3:	Cement Requirements, design of mix for CC pavement, use of additives, IRC specifications & Tests, joint filler and sealer materials.			3L
Module 4:	Modern trend of using Modified, Sustainable and Environment friendly materials Geo-Synthetic: Geo-synthetic clay liner – Construction details – Geo Synthetic Materials – Functions – Property characterization Modified bitumen: Crumb Rubber Modified bitumen, Natural rubber modified bitumen, polymer modified bitumen; Long term and short term ageing and its effect on bitumen performance Plastic waste: Types of polymer, applicability of polymer based waste product in different layers of pavement			4L
Reference	Sl.	Book Name	Author	Publishing House
	1	Highway Engineering	Khanna and Justo	New Chand and Bros.
IS and IRC codes	1	IS 73, revised 2006, IS 2720, IS 2386, IS 1201 to 1220, IS 8887, 1995, IS 217- 1986		
	2	IRC, 51-1992, 63-1976, 74 –1979, 88-1984,		
	3	IRC SP: 53 – 2002, IRC SP: 58 – 2000,		
	4	"Guidelines for use of Geotextiles in Road Pavements and Associated works"- 2002; IRC		
	5	State of art, special report 3 – "compaction of earthwork and subgrade"- IRC, HRB, 1999		
	6	MoRTH "Specifications for Roads and Bridges Works"- Indian Roads Congress		

CE(OE)801A	Human Resource Development and Organizational Behaviour	2L	2 Credits	
Module 1:	Organizational Behaviour: Definition, Importance, Historical Background, Fundamental Concepts of OB, Challenges and Opportunities for OB	2L		
Module 2:	Personality and Attitudes: Meaning of personality, Personality Determinants and Traits, Development of Personality, Types of Attitudes, Job Satisfaction	2L		
Module 3:	Perception: Definition, Nature and Importance, Factors influencing Perception, Perceptual Selectivity, Link between Perception and Decision Making	2L		
Module 4:	Motivation: Definition, Theories of Motivation - Maslow's Hierarchy of Needs Theory, McGregor's Theory X & Y, Herzberg's Motivation-Hygiene Theory, Alderfer's ERG Theory, McClelland's Theory of Needs, Vroom's Expectancy Theory	4L		
Module 5:	Group Behaviour: Characteristics of Group, Types of Groups, Stages of Group Development, Group Decision Making	2L		
Module 6:	Communication: Communication Process, Direction of Communication, Barriers to Effective Communication	2L		
Module 7:	Leadership: Definition, Importance, Theories of Leadership Styles	2L		
Module 8:	Organizational Politics: Definition, Factors contributing to Political Behaviour	2L		
Module 9:	Conflict Management: Traditional vis-a-vis Modern View of Conflict, Functional and Dysfunctional Conflict, Conflict Process, Negotiation – Bargaining Strategies, Negotiation Process	3L		
Module 10:	Organizational Design: Various Organizational Structures and their Effects on Human Behaviour, Concepts of Organizational Climate and Organizational Culture	4L		
Reference	Sl.	Book Name	Author	Publishing House
	1	Organizational Behavior	Robbins, S. P. & Judge, T.A	Pearson
	2	Organizational Behavior	Luthans, Fred	McGraw Hil
	3	Understanding Organizations – Organizational Theory & Practice in India	Shukla, Madhuka	PHI
4	Principles of Organizational	Fincham, R. & Rhodes, P	Oxford Univ	



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	Behaviour	
--	-----------	--

CE(OE)801B	Bridge Engineering	2L	2 Credits
Course Outcome	After going through this course, the students will be able to: 1. Discuss basic definitions, types, and components of bridges. 2. Discuss sub-surface investigations required for bridge construction. 3. Understand standard specification and loads for bridge design. 4. Perform design of different types bearings and joints for bridges. 5. Perform design of various reinforced concrete and steel bridges.		
Prerequisite	Design of RC Structures (CE(PC)501), Structural Analysis - I (CE(PC)503), Design of Steel Structures (CE(PC)604).		
Module 1	Introduction: Definition and basic forms, components of a typical bridge, classification of bridges, site investigation, bridge hydrology and hydraulics. Loads: IRC loads, impact factors, wind loads, longitudinal forces, lateral forces and centrifugal forces. Bearings: Types of bearings, details of bearing, joints, design examples	3L	
Module 2	Design of reinforced concrete solid slab bridge: Introduction, general design features, economic span, effective width method, simply supported and cantilever slab bridges, analysis and design.	7L	
Module 3	Design of box culvert bridge: Introduction, design method and design example.	4L	
Module 4	Design of a T beam bridge: Introduction, components, design of interior panel of slab, longitudinal and cross girders, Pigeaud's method, design example.	6L	
Module 5	Design of composite bridge: General aspects, method of construction, analysis of composite section, shear connectors, design of composite beam.	4L	
Module 6	Design of steel bridges: General features, types of stress, design of railway truss bridge and plate girder bridge.	6L	
Module 7	Design of cable stayed bridge: General features, Philosophy of design.	2L	
IS Codes	1. All relevant IRC and IS codes		
Reference	Sl.	Book Name	Author
	1	Prestressed Concrete Bridges	N. Krishnaraju
	2	Design of Bridge Structures	Jagadish and Jayaram
	3	Essential Bridge Engineering	Johnson Victor D.
	4	Design of Bridges	N. Krishnaraju
	5	Concrete Structures	Vazirani & Ratwani
	6	Design of concrete bridges	Aswani, Vazirani & Ratwani
	7	Bridge engineering	Ponnuswamy
	8	Principle & Practice of Bridge Engineering	Bindra
			Publishing House
			CBS Publisher
			PHI
			Oxford, IBH Publishing Co.
			Oxford, IBH Publishing Co.
			Khanna Publishers
			Khanna Publishers
			McGrawHill
			Dhanpat Rai Publishing House

CE(OE)801C	Deep Foundations	2L + 0T	2 Credits
Course Outcome	On successful completion of this course, student should be able to: 11. Explain the concept of bearing capacity for deep foundation. 12. Estimate the safe bearing capacity including settlement consideration for deep foundations. 13. Select a suitable deep foundation system for various site conditions and also analysis of that. 14. Explain in what circumstances pile is needed and how to estimate pile and pile group capacity under various soil conditions Characterize.		
Prerequisite	Introduction to Civil Engineering CE(HS)302, CE(PE)601 Foundation Engineering, Soil Mechanics - II CE(PC)504, Soil Mechanics - I CE(PC)401		
Module 1	Piles: types - load carrying capacity of pile - static and dynamic formula - pile load test - penetration test - pile groups - Efficiency - Feld's rule -Converse Labarre formula, Settlement of piles and pile groups - Negative skin friction - under-reamed piles, pile cap	10L	
Module 2	Drilled Pier: Introduction, uses, types, bearing capacity, settlement, construction procedures.	6L	
Module 3:	Cassion foundations: Types & selections, forces & moments, depth determination.	4L	
Module 4:	Well foundations: The Types, components, design of well foundations - grip, size, steining curb, cutting edge, top & bottom plug, well cap, stability analysis of	8L	

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

Reference	Sl.	Book Name	Author	Publishing House
	1	Principles of Foundation Engineering	Braja M. Das	Thomson Asia Pvt. Ltd. Singapore, 2005.
	2	Geotechnical Engineering, Principles and Practices,	Donald P. Coduto, Mau-Chu Ronald Yeung and William A. Kitch,	PHI Learning Private limited, 2011.
	3	Soil Mechanics and Foundation Engineering	P. Purushothama Raj	Pearson publication

CE(OE)801D	Groundwater Contamination	2L + 0T	2 Credits	
Course Outcome	On successful completion of this course, student should be able to: 1. To be able to understand the principles and theories regarding groundwater contamination with 2. To be able to formulate the various remedial measures for groundwater contamination			
Prerequisite	Basic Sciences, Hydrology, Meteorology and Groundwater Hydrology			
Module 1	Introduction: Definition of groundwater, hydrological properties of various water bearing strata, vertical distribution of subsurface water, groundwater in hydrologic cycle		2L	
Module 2	Groundwater Hydraulics: Darcy's Law, Dupuit's assumption, Application of Darcy's Law for simple flow systems, Governing differential equations for confined and unconfined aquifers, steady and unsteady flow solutions for fully penetrating wells, partially penetrating wells, Interference of wells, Test pumping analysis with steady and unsteady flows, Delayed yield, method of images		7L	
Module 3:	Groundwater quality: Indian & International standards		3L	
Module 4:	Groundwater pollution: Sources, Remedial and preventive measures		3L	
Module 5:	Groundwater conservation: Groundwater budget, seepage from surface water, artificial recharge with reclamation		3L	
Module 6:	Models for Groundwater flow: Sampling & Monitoring methods, transport mechanisms, modeling (advective and dispersive transport), (adsorption and chemical reaction), biodegradation kinetics, numerical flow and transport modeling, waste site characterization/investigation, groundwater remediation, legal issues in groundwater contamination		10L	
Reference	Sl.	Book Name	Author	Publishing House
	1	Elements of Hydrology and Groundwater	R.N. Saxena & D.C. Gupta	PHI
	2	Groundwater Contamination, Performance, Limitations and Impacts	Anna I. Powell	Nova Science Publishers
	3	Groundwater Contamination and Remediation	Edited by Timothy D. Scheibe & David C. Mays	MDPI

CE(OE)802A	Soft Skills and Personality Development	2L	2 Credits
Module 1	Self-Growth i) Self-Growth- Maslow's Hierarchy of Needs Theory ii) Anger, Stress & Time Management- Theories and application iii) SWOT Analysis		6L
Module 2	Stepping Up i) Growth & Environment ii) Competitive Spirit iii) Responsibility Factor		7L
Module 3:	Professional Communication i) Impression Management- theory on social psychology ii) Employability Quotient iii) Cross-cultural communication		6L
Module 4:	Leadership & Team Playing i) Leadership & Team Playing: Theories, Styles, Stages ii) Motivation.		6L



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
(Applicable from the academic session 2018-2019)

	Negotiation Skills, Conflict Management iii) Planning & Envisioning: Initiative and Innovation in the Work Environment- De Bono's Six Thinking Hats			
Reference	Sl.	Book Name	Author	Publishing House
	1	Personality Development and Soft Skills	Barun K. Mitra	Oxford University
	2	Soft Skills: An Integrated Approach to Maximise Personality	Gopendra Singh Chauhan and Sangeta Sharma	Wiley
	3	The Art of Soft Skills: Attitude, Communication and Etiquette for Success	Gopalaswamy Ramesh and Mahadevan Ramesh	Pearson

CE(OE)802B	Earthquake Engineering	2L	2 Credits	
Course Outcome	After going through this course, the students will be able to: 1.To provide a coherent development to the students for the courses in sector of earthquake engineering. 2.To present the foundations of many basic engineering concepts related earthquake Engineering 3.To give an experience in the implementation of engineering concepts which are applied in field of earthquake engineering 4.To involve the application of scientific and technological principles of planning, analysis, design of buildings according to earthquake design philosophy.			
Prerequisite	Introduction to Solid Mechanics (CE/ES)402), Structural Analysis – I (CE/PC)503), Structural Analysis – II (CE/PE)602B), Design of RC Structures (CE/PC)501), Structural Dynamics (CE/PE)704A).			
Module 1	Seismology: Earth's Interior and Plate Tectonics; Causes of Earthquakes and Seismic Waves; Measurement of Earthquakes and Measurement parameters; Modification of Earthquake due to the Nature of Soil; Seismic Hazard Analysis		4L	
Module 2	Earthquake Inputs: Time History Records and Frequency Contents of Ground Motion; Power Spectral Density Function of Ground Motion; Concept of Response Spectrums of Earthquake; Combined D V A Spectrum and Construction of Design Spectrum; Site Specific, Probabilistic and Uniform Hazard Spectrums; Predictive Relationships for earthquake parameters;		4L	
Module 3	Dynamics for Earthquake Analysis: Equations of Motion for SDOF and MDOF Systems; Undamped Free Vibration of SDOF and MDOF Systems; Mode Shapes and Frequencies of MDOF System; Rayleigh Damping Matrix; Direct Time Domain Analysis of MDOF System; Direct Frequency Domain Analysis of MDOF System; Modal Analysis in Time and Frequency Domain		4L	
Module 4	Response Analysis for Specific Ground Motion: Equations of Motion for Single and Multi Support Excitations and Solutions; Equations of Motion in State Space and Solutions; Computational Steps for the Solutions using MATLAB; Time History Analysis of 3D Tall Buildings.		4L	
Module 5	Response Spectrum Method of Analysis: Concept of Equivalent Lateral Force for Earthquake; Modal Combination Rules; Response Spectrum Method of Analysis of Structures and Code Provisions; Response Spectrum Method of Analysis for Torsionally Coupled Systems; Response Spectrum Method of Analysis for Non-Classically Damped Systems.		4L	
Module 6	Seismic Soil - Structure Interaction: Fundamentals of Seismic Soil Structure Interaction; Direct Method of Analysis of Soil Structure & Interaction using FEM and Use of ABAQUS; Substructuring Method of Analysis of Soil Structure Interaction Problem		4L	
Module 7	Inelastic Response of Structures for Earthquake Forces: Fundamental Concepts of Inelastic Response Analysis for Earthquake Forces; Solutions of Incremental Equations of Motions for SDOF Systems; Solutions of Incremental Equations of Motions for MDOF Systems; Push over Analysis; Concepts of Ductility and Inelastic Spectrum;		5L	
Module 8	Base Isolation for earthquake resistant design of structures: Base isolation concept, isolation systems and their modelling; linear theory of base isolation; stability of elastomeric bearings; code provisions for seismic isolation; practical applications.		5L	
IS Codes	1	IS 1893: Part I (2016)		
	2	IS 13920: 2016		
	3	IS 4326		
Reference	Sl.	Book Name	Author	Publishing House
	1	Earthquake resistant design	Agarwal and Shrikhande	PHI

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Civil Engineering

(Applicable from the academic session 2018-2019)

	of Structures		
2	Earthquake-resistant design of structures	S.R. Duggal,	Oxford University Press
3	Elements of Earthquake Engineering	Jai Krishna, A. R. Chandrashekhar and Brijesh Chandra	South Asian Publishers
4	Earthquake Resistant Design	D. J. Dowrick	John Wiley & Sons

CE(OE)802C	Urban Transport Planning	2L	2 Credits
Module 1	Introduction Urban morphology - Urbanization and travel demand - Urban activity systems and travel patterns - Systems approach - Trip based and Activity based approach		4L
Module 2	Urban Transportation Planning Goals, Objectives and Constraints - Inventory, Model building, Forecasting and Evaluation - Study area delineation - Zoning - UTP survey. Trip generation models - Trip classification - productions and attractions - Trip rate analysis - Multiple regression models - Category analysis. Trip distribution models - Growth factor models, Gravity model and Opportunity models. Modal split models - Mode choice behavior - Trip end and trip interchange models - Probabilistic models - Utility functions - Logit models - Two stage model. Traffic assignment - Transportation networks - Minimum Path Algorithms - Assignment methods - All or Nothing assignment, Capacity restrained assignment and Multi path assignment - Route-choice behavior.		21L
Module 3	Scope of UTP in present scenario Financing of Project - urban development planning policy - Case studies.		5L
Reference	Sl. Book Name	Author	
	1 Traffic Engineering and Transport Planning	L. R Kadiyali	
	2 Urban Transportation: Planning, Operation and Management	S Ponnuswamy and Johnson Victor	
	3 Transportation Planning: Principles, Practices and Policies	Pradeep Kumar Sarkar and Vinay Maitri	

CE(OE)802D	Environmental Impact Assessment and Life Cycle Analyses	2L	2 Credits
Course Outcome	After going through this course, the students will be able to: 1. To understand and evaluate the impact of any activity (large or small scale) on the surrounding environment 2. To be able to formulate mitigation strategies to protect the environment leading to sustainability 3. To be able to understand the intricacies of Life Cycle Analysis and apply basic knowledge for coherent existence		
Prerequisite	Basic Sciences, Biology, Environmental Science and Environmental Engineering		
Module 1	Introduction Definition, Objective with legal aspect of Environmental Impact Assessment (EIA)		2L
Module 2	Methodology for EIA with Base Line Studies, Screening, Scoping and Public Consultation		4L
Module 3	EIA Analysis Data Collection & Environmental Impact Analysis, preparation of EIA report		5L
Module 4	EIA Mitigation and Audit: Mitigation and Impact Management with various case studies, Environmental Audit		5L
Module 5	Introduction to Life Cycle Analysis (LCA): History, Definition, Standards and structure of LCA Goal and Scope of LCA: System of a product with boundary, unit process and functional unit		2L
Module 6	Life Cycle Interpretation and Inventory: Limitation of LCA, Identification of significant issues, Evaluation, Reporting, Critical Review. Inventory: Data Collection, Data Bases, Allocation, Validation		3L
Module 7	LCA Impact Assessment and Practice:		



Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Civil Engineering
 (Applicable from the academic session 2018-2019)

	Categories, Classification, Normalization, LCA Management, Life Cycle thinking, Sustainability			
Module 8	Introduction: Definition, Objective with legal aspect of Environmental Impact Assessment (EIA)			2L
Reference	Sl.	Book Name	Author	Publishing House
	1	Environmental Impact Assessment	R. R. Barthwal,	New Age International Publication
	2	Environmental Impact Assessment	Canter	McGraw-Hill Publications
	3	Environmental Impact Assessment: Theory and Practice	M. Anji Reddy	B. S. Publication
	4	Environmental Impact Assessment: Theory and Practice	Peter Wathern	CRC Press
	5	Life Cycle Assessment (LCA): A Guide to Best Practice	Walter Klöpffer, Birgit Grahl	Wiley Publishers
	6	Environmental Life Cycle Assessment	Olivier Jolliet, Myriam Saade-Sheih, Shanna Shaked, Alexandre Jolliet, Pierre Crettaz.	CRC Press
	7	Life Cycle Student Handbook	Mary Ann Curran,	Scrivener Publishing, Wiley


Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.

CIVIL ENGINEERING DEPARTMENT

List of test Books and Reference (2020-21)

Year	Name of Course	Course Code	List of test Books and Reference
	Biology for Engineers	CE(BS)301	<ol style="list-style-type: none"> 1) Biology: A global approach: Campbell, N. A., Reece, J. B., Urry, Lisa, Cain, M. L., Wasserman, S. A., Minorsky, P. V., Jackson, R. B. Pearson Education Ltd 2) Outlines of Biochemistry, Corn, F. E., Stampf, P.K., Brauring, G. Dea, R.H., John Wiley and Sons 3) Principles of Biochemistry (V Edition), By Nelson, D. L., and Cox, M. M W H. Freeman and Company 4) Molecular Genetics (second edition), Szent, G. S., and Calender, R.W.H. Freeman and company, Distributed by Satish Kumar Jain for CBS Publisher 5) Microbiology, Prescott, L.M J.P. Harley and C. A. Klein 1995. 2nd edition Wm, C. Brown Publishers 6) Biology of Engineers, McGraw Hill (ISBN: 978-11-21439-911)
	Engineering Mechanics	CE(ES)301	<ol style="list-style-type: none"> 1. D.S. Besh (2018), Engineering Mechanics, Khanna Publishing House, 2019 2. Irving H. Shames (2006), Engineering Mechanics, 4th Edition, Prentice Hall 3. F. P. Beer and E. R. Johnston (2011), Vector Mechanics for Engineers, Vol I - Statics, Vol II, -Dynamics, 9th Ed, Tata McGraw Hill 4. R.C. Hibbler (2006), Engineering Mechanics: Principles of Statics and Dynamics, Pearson Press 5. Andy Runa and RudraPratap (2011), Introduction to Statics and Dynamics, Oxford University Press 6. Shames and Rao (2006), Engineering Mechanics, Pearson Education, 7. Hibler and Gupta (2010), Engineering Mechanics (Statics, Dynamics) by Pearson Education 8. Reddy Vijaykumar K. and K. Suresh Kumar (2010), Senger's Engineering Mechanics 9. Bansal R.K (2010), A Text Book of Engineering Mechanics, Laxmi Publications 10. Khanna R.S. (2010), Engineering Mechanics, S. Chand & Co 11. Tayal A.K. (2010), Engineering Mechanics, Umesh Publications
2nd	Energy Science & Engineering	CE(ES)302	<ol style="list-style-type: none"> 1. O.P. Gupta, Energy Technology, Khanna Book Publishing, (2019) 2. Boyle, Godfrey (2004), Renewable Energy (2nd edition), Oxford University Press 3. Boyle, Godfrey, Bob Everett, and Janet Ramage (Eds.) (2004), Energy Systems and Sustainability: Power for a Sustainable Future, Oxford University Press 4. Chakrabarti, Energy Engineering & Management, PHI 5. Schaeffler, John (2007), Real Goods Solar Living Sourcebook: The Complete Guide to Renewable Energy Technologies and Sustainable Living, Green 6. Jean-Philippe Zaccour, Georges (Eds.) (2005), Energy and Environment, Ser. Mathematics of Decision Making, Loulou, Richard, Waarb, XVIII, 7. Ristinen, Robert A. Kraushaar, Jack J. AKraushaar, Jack P. Ristinen, Robert A. (2006) Energy and the Environment, 2nd Edition, John Wiley 8. UNDP (2000), Energy and the Challenge of Sustainability, World Energy assessment 9. E.H Thornlike (1976), Energy & Environment: A Primer for Scientists and Engineers, Addison-Wesley Publishing Company 10. Related papers published in international journals
	Mathematics-III (Transform & Discrete Mathematics)	CE(BS)302	<ol style="list-style-type: none"> 1. R. C. Pinner, Discrete Mathematics: Proof Techniques and Mathematical Structures, World Scientific, 1999. 2. R.L. Graham, D. E. Knuth, and O. Patashnik, Concrete Mathematics, 2nd Ed., Addison-Wesley, 1994. 3. K. H. Rosen, Discrete Mathematics and its Applications, 6th Ed., Tata McGraw-Hill, 2007 4. J. E. Heun, Discrete Structures, Logic, and Computability, 3rd Ed., Jones and Bartlett, 2010 5. N. Deo, Graph Theory, Prentice Hall of India, 1974 6. S. Lipschutz and M. L. Lipson, Schaum's Outline of Theory and Problems of Discrete Mathematics, 2nd Ed., Tata McGraw-Hill, 1999 7. J. P. Tremblay and R. P. Manohar, Discrete Mathematics with Applications to Computer Science, Tata McGraw-Hill, 1997 9. Urwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006. 10. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2010 11. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 33th Edition, 2000 12. S.B. Singh, Discrete Structures, Khanna Publishing House, 2019 13. Veeramani T., Engineering Mathematics, Tata McGraw-Hill, New Delhi, 2008 14. Chandrika Prasad, Advanced Engineering Mathematics, KPB

88

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.




Humanities-I (Effective Technical Communication)	CEIHS1301	<ol style="list-style-type: none"> David T. Hunt and David McMurrey, Guide to writing as an Engineer, John Wiley New York, 2004 Diane Hacker, Pocket Style Manual, Bedford Publication, New York, 2003 (ISBN 0212406843) Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House Shiv Khera, You Can Win, Macmillan Books, New York, 2003 Raman Sharma, Technical Communications, Oxford Publication, London, 2004 Dale Jungk, Applied Writing for Technicians, McGraw Hill, New York, 2004 (ISBN 078281574) Sharma, R. and Mohan, K. Business Correspondence and Report Writing, TMH New Delhi 2002 Xebec, Presentation Book, TMH New Delhi, 2003 (ISBN 0402213)
Introduction to Civil Engineering	CEIHS1302	<ol style="list-style-type: none"> Part, B.3 (1999), Legal Aspects in training and Engineering Contracts The National Building Code, BIS, (2017) KERA Act, (2017) Meena Rao (2006), Fundamental concepts in Law of Contract, 3rd Edn, Professional Office Chandiramani, Neelima (2000), The Law of Contract: An Outline, 2nd Edn, Avinash Publications Mumbai Avtar Singh (2002), Law of Contract, Eastern Book Co. Datt (1994), Indian Contract Act, Eastern Law House Arson W.R. (1979), Law of Contract, Oxford University Press Kwatra G.K. (2005), The Arbitration & Conciliation of Law in India with case law on (UNCITRAL Model Law on Arbitration, Indian Council of Arbitration Avtar Singh (2005), Law of Arbitration and Conciliation, Eastern Book Co. Wadhwa (2004), Intellectual Property Rights, Universal Law Publishing Co. P. S. Narayan (2000), Intellectual Property Rights, Gogia Law Agency T. Ramappa (2010), Intellectual Property Rights Law in India, Asia Law House Base text (2005), Right to Information Act O.P. Malhotra, Law of Industrial Disputes, N.M. Tripathi Publishers K. M. Desai (1946), The Industrial Employment (Standing Orders) Act Rintamäki R.F., Introduction to the Law of Industrial Disputes, Asia Publishing House Vee, Charles & Skatmore, Martin (2003) Professional Ethics in the Construction Industry, Engineering Construction and Architectural management, Vol 10, Iss. 2, pp 117-127, MCB UP Ltd American Society of Civil Engineers (2011) ASCE Code of Ethics – Principles Study and Application Ethics in Engineering- M.W. Martin & R. Schiringer, McGraw-Hill Engineering Ethics, National Institute for Engineering Ethics, USA www.inria.org Engineering ethics: concepts and cases – C. E. Harris, M.S. Pritchard, M.J. Rabini Resisting Bureaucratic Corruption: Alacerty Housing Chennai (Teaching Case Study)-S. Ramakrishna Velamuri - CEIBS CONSTRUCTION CONTRACTS, http://www.yourmanitark.com/contract.htm Internet and Business Handbook, Chap 4, CONTRACTS LAW, http://www.ladepress.com/ladepress/contractslaw1.html Contract & Agreements, http://www.100.ac.nlaw/english/agreements/GeneralContract%20Law%20.htm Contracts, http://206.127.69.152/jgrodv/cry211/ch7.ppt Business & Personal Law, Chapter 7 "How Contracts Arise", http://yucapubhigh.com/schriestmen/lawweb/lawch7.ppt Types of Contracts, http://conn2.cmu.edu/public/classes/rahn/instrnrx.com.ppt IV TYPES OF CONTRACTS AND IMPORTANT PROVISIONS, http://www.worldbank.org/html/opriconult/guidets/types.html Contract Types/Pricing Arrangements Guideline- 1.4 G (11/04/02)
Basic Electronics	CEIES1391	<ol style="list-style-type: none"> David A. Bell (2003), Laboratory Manual for Electronic Devices and Circuits, Prentice Hall, India Samirankal (2002), Basic Electronics- Devices, Circuits and IT Fundamentals, Prentice Hall, India Thomas L. Floyd and R. P. Jain (2009), Digital Fundamentals by Pearson Education, Paul B. Zbar, A.P. Malvino and M.A. Miller (2009), Basic Electronics – A Text-Lab Manual, TMH R.T. Paynter (2009), Introductory Electronic Devices & Circuits, Conventional Flow Version, Pearson

88

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



Computer-aided Civil Engineering Drawing	CE(ES)392	<ol style="list-style-type: none"> 1. Subhash C Sharma & Gurucharan Singh (2005), "Civil Engineering Drawing", Standard Publishers 2. Pradeep Jain & A.P. Gaitam, Engineering Graphics & Design, Khanna Publishing House (2019) 3. Ajeet Singh (2002), "Working with AUTOCAD 2000 with updates on AUTOCAD 2001", Tata- Mc Graw-Hill Company Limited, New Delhi 4. Sham Tickoo Swarna D (2009), "AUTOCAD for Engineers and Designers", Pearson Education, 5. Venugopal (2007), "Engineering Drawing and Graphics + AUTOCAD", New Age International Pvt. Ltd., 6. Shah, Engineering Drawings and Computers, Pearson 7. Balagopal and Prabhu (1987), "Building Drawing and Detailing", Spades publishing KDR building, Calicut. 8. (Corresponding set of) CAD Software Theory and User Manuals 9. Malik R.S., Meo, G.S. (2009) Civil Engineering Drawing, Computech Publication Ltd New Asian. 10. Sikka, V.B. (2013), A Course in Civil Engineering Drawing, S.K. Kataria & Sons.
Life Science	CE(ES)393	<ol style="list-style-type: none"> 1. Biology: A global approach: Campbell, N. A., Reece, J. B., Urry, Lisa, Cain, M. L., Wasserman, S. A., Minorsky, P. V., Jackson, R. B. Pearson Education Ltd 2. Outlines of Biochemistry, Corn, E.E; Stampf, P.K, Bruening, G; Doi, R.H. John Wiley and Sons 3. Principles of Biochemistry (V Edition), By Nelson, D. L., and Cox, M. M.W.H. Freeman and Company 4. Molecular Genetics (Second edition), Stent, G. S.; and Calender, R. W.H. Freeman and company, Distributed by Satish Kumar Jain for CBS Publisher 5. Microbiology, Prescott, L. M.J.P. Harley and C.A. Klein 1995. 2nd edition Wm, C. Brown Publishers 6. Life Sciences, Vol. I & II, Pathfinder Publications
Introduction to Fluid Mechanics	CE(ES)401	<ol style="list-style-type: none"> 1. A Textbook of Fluid Mechanics, R. K. Bansal, Laxmi Publications (P) Ltd., New Delhi 2. Hydraulics & Fluid Mechanics Including Hydraulics Machines, P. N. Modi and S. M. Seth, Standard Book House, New Delhi, 2017 3. Introduction to Fluid Mechanics and Fluid Machines, S. K. Som, G. Biswas and S. Chakraborty, Tata McGraw Hill Education Private Limited, New Delhi, 2012 4. Fluid Mechanics, F. M. White, Tata McGraw Hill Education India Private Limited, 2017 5. Fluid Mechanics and Hydraulic Machines, K. Subramanya, McGraw Hill Education (India)
Introduction to Solid Mechanics	CE(ES)402	<ol style="list-style-type: none"> 1. Elements of Strength of Material, S. P. Timoshenko and D. H. Young, EWP Pvt. Ltd 2. Mechanics of Material, R.C. Hibbeler, Pearson 3. Mechanics of Material, Beer, 4. Strength of Materials, R. Subramanian, OXFORD University Press 5. Strength of Materials, S S Bhavikatti, Vikas Publishing House Ltd 6. Strength of Materials, R.K. Bansal, Laxmi Publication 7. Fundamentals of Strength of Material, Nag & Chandra, WIE
2nd		
Soil Mechanics - I	CE(PC)401	<ol style="list-style-type: none"> 1. Textbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series), V.N.S. Murthy, CBS Publishers 2. Soil Mechanics and Foundations, Parmita, B.C. and Jain A. K., Laxmi Publications (P) Ltd. 3. Basic and Applied Soil Mechanics, Gopal Ranjan & A.S.R. Rao, New Age International Pvt. Ltd, Publishers 4. Principles of Geotechnical Engineering, B.M. Das, Thomson Brooks / Cole
Environmental Engineering - I	CE(PC)402	<ol style="list-style-type: none"> 1. Environmental Engineering, Volume-1 and Volume-2, Garg, S.K. Khanna Publishers 2. Environmental Engineering, Peavy, H.S., Rowe, D.R., Tchobanoglous, G. Tata McGraw Hill Indian Edition 3. Introduction to Environmental, Masters, G.M., Ela, Prentice Hall / Pearson 4. Manual on Water Supply and Treatment, CPHHEO, Govt. of India 5. Manual on Municipal Solid Waste Management, CPHHEO, Govt. of India
Surveying & Geomatics	CE(PC)403	<ol style="list-style-type: none"> 1. Surveying & Levelling, N. N. Bhatia, McGraw Hill Education (India) Private Limited 2. Surveying - Vol. I, II & III, B. C. Punmia Ashok Kumar Jain Arun Kumar Jain, Laxmi Publications (P) Ltd. 3. Surveying - Vol. I & II, S. K. Duggal, McGraw Hill Education (India) Private Limited 4. Surveying & Levelling - Part I & II, T. P. Kanetkar S. V. Kulkarni, Pune Vidyarthi Groh Prakashan 5. Remote Sensing and GIS, Basudeb Bhutta, Oxford University Press 6. Applications of Geomatics in Civil Engineering, J. K. Ghosh 1. de Souza (Eds.), Springer
Concrete Technology	CE(PC)404	<ol style="list-style-type: none"> 1. Concrete Technology (Theory & Practice), Shetty, M.S.S. Chand and Co. 2. Concrete Technology, Gambhir, M.L., Tata McGraw Hill 3. Concrete Technology, A. M. Neville and J.J. Brooks, Pearson Education India Ltd. 4. Properties of Concrete, A.M. Neville, Pearson India


Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.



2ND	Civil Engineering - Societal & Global Impact	CE(HS)401	1.Global Challenges and the Role of Civil Engineering, Chapter 3 in: Fischinger M. (ed) Performance- Based Seismic Engineering: Vision for an Earthquake Resilient Society, Geotechnical, Geological and Earthquake Engineering, Vol. 32, Zigu Turk (2014), Springer 2.Engineering impacting Social, Economical and Working Environment, Bito, Campi, Vasconcelos, Amaral, Barros (2013), 120th ASCE Annual Conference and Exposition
	Management I (Organizational Behavior)	CE(MC)401	1. Organization Behaviour, Stephen Robbins 3 Organization Behaviour, L.M. Prasad Behaviour, K. Assialhappa 2. Organization Behaviour, Latham 4 Organization
3RD	Design of RC Structures	CE(PC)501	1. Reinforced Concrete Design - Pillai and Menon, TMH Reinforced Concrete Design, Krishna Raju & Praneesh, New Age 3. R.C.C. Design, B.C. Punmia, Laxmi Publication Concrete Structure, N. Subramanian, OXFORD University Press 5. Limit State Design of reinforced concrete, P. C. Varghese, PIP concrete, S.N. Sinha, TMH 2. 4 Reinforced 6. Reinforced
	Engineering Hydrology	CE(PC)502	1. Engineering Hydrology (4th Ed.), K. Subramanya, McGraw Hill Education (India) Private Limited, New Delhi, 2013 2. Engineering Hydrology, R. Srivastava and A. Jain, McGraw Hill Education (India) Private Limited, New Delhi, 2017 3. Applied Hydrology, V. T. Chow, D. Maidment, L. Mays, Tata McGraw Hill Edition, New Delhi, 2010 4. Hydrology, M. M. Das, M. Das Sanku, PHI Learning Private Limited, New Delhi, 2009
	Structural Analysis - I	CE(PC)503	1. Structural Analysis (Vol I & Vol II), S.S Bhavikatti, Vikas Publishing House Pvt. Ltd 2. Structural Analysis, Ramamurtham and Theory of Structures (Vol I & Vol II), Punmia, Jain, Jain, Laxmi Publication 3. Strength of Materials 4. Structural Analysis, R.C. Hibbeler, Prentice Hall Structures, Timoshenko and Young, McGrawHill Gupta, TMH 5. Theory of 6. Structural Analysis, Pandit and
	Soil Mechanics - II	CE(PC)504	1. Textbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series), V.N.S. Murthy, CBS Publishers Foundations, Punmia, B.C. and Jain A. K. V. Laxmi Publications (P) Ltd Mechanics, Gopal Ranjan & A.S.R. Rao, New Age, International Pvt Ltd, Publisher 4. Principles of Geotechnical Engineering, B.M. Das, Thomson Brooks / Cole 2. Soil Mechanics and 3. Basic and Applied Soil
	Environmental Engineering - II	CE(PC)505	1. Environmental Engineering, Volume-1 and Volume-2, Garg, S.K, Khanna Publishers 2. Environmental Engineering, Peavy, H.S, Rowe, D.R, Tchobanoglous, G Tata McGraw Hill Indian Edition 3. Introduction to Environmental Engineering and Science Masters, G.M., Ela, W.P. Prentice Hall / Pearson 4 Manual on Sewerage and Sewage Treatment, CPHEEO, Govt of India 5. Manual on Municipal Solid Waste Management, CPHEEO, Govt of India 6. Hazardous and other waste (Management and Transboundary Movement) Rules, 2016, MoEF, Govt. of India
	Transportation Engineering	CE(PC)506	1. Traffic Engineering and Transport Planning, Kadiyali L.R, Khanna Publishers 2. Highway Engineering, Khanna, S.K. and C.E.G. Justo, New Chand and Bros 3. Transportation Engineering - An Introduction John Khury C. and B. Kent Lall, Prentice Hall of India Pvt. Ltd 4. Principles of Transportation and Highway Engineering, Rao G.V. Tata McGraw-Hill Publishing Company Ltd 5. Specifications for Road and Bridge Works, Fourth Edition, Indian Roads Congress, Ministry of Road Transport and Highways
	Soil Mechanics Laboratory	CE(PC)594	1. Soil Mechanics Laboratory Manual by Briga Median Das (Oxford university press) 2. SP-36 (Part - I and Part - II)
	Environmental Engineering Laboratory	CE(PC)595	1. Garg, S.K. Environmental Engineering, Volume-1 and Volume-2, Khanna Publishers 2. Peavy, H.S, Rowe, D.R, Tchobanoglous, G. Environmental Engineering, McGraw Hill International Edition / Tata McGraw Hill Indian Edition 3. Sawyer, C.N, McCarty, P.L., Parkin, G.F. Chemistry for Environmental Engineering and Science McGraw Hill International Edition / Tata McGraw Hill Indian Edition 4. IS -3025 (Different Parts), "METHODS OF SAMPLING AND TEST (PHYSICAL AND CHEMICAL) FOR WATER AND WASTE WATER" 5. APHA Standard Methods for the Examination of Water and Wastewater 6. IS -10500-2012, "DRINKING WATER SPECIFICATION (SECOND REVISION)"

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



3RD	Construction Engineering & Management	CE(PC)601	1. Building Construction, Varghese, P.C. Prentice Hall India, Publishers R.L. McGraw Hill and Management, Nunnally, S.W. Prentice Hall CPM Purmia, B.C. Khandelwal, K.K. Laxmi Publications	2 National Building Code, BIS 3 Construction Technology, Challey, R. ELBS 4-Construction Planning, Methods and Equipment, Pourifoy, 5. Construction method 6. Project Planning with PERT and
	Engineering Economics, Estimation & Costing	CE(PC)602	1. Estimating, Costing Specifications & Valuation, M Chakravarty Analysis documents Engineering (Theory & Practice), Datta, B.N, UBS Publishers 4. Distributors, Estimating and Costing in Civil Engineering: Theory and Practice including Specification and Valuations, UBS Publishers	2. Typical PWD Rate 3. Estimating and Costing in Civil
	Water Resources Engineering	CE(PC)603	1. Irrigation and Water Power Engineering, B. C. Purmia, A. K. Jain and P.B. Lal, Laxmi Publications (P) Ltd., New Delhi, 2019. Engineering, P. N. Modi, Standard Book House, New Delhi, 2019 3. Irrigation Engineering and Hydraulic Structures, S. K. Sharma, S Chand Publishing, New Delhi, 2017, 2012. 4. Irrigation Engineering, N. N. Basak, Tata McGraw Education India Limited, 2017 5. Irrigation and Water resource Engineering, G. L. Asawa, New Age Publishers, New Delhi, 2005	2. Irrigation, Water Resources and Water Power
	Design of Steel Structures	CE(PC)604	1. Steel structures, N. Subramanian, OXFORD University Press Steel Structures, S.K. Duggal, TMH Structures, Bhavikatti, I.K. Publishing House	2. Design Of 3. Design Of Steel
	Foundation Engineering	CE(PE)601B	1. Testbook of Soil Mechanics and Foundation Engineering (Geotechnical Engineering Series), V.N.S. Murthy, CBS Publishers Murthy, Laxmi Publications (P) Ltd & A.S.R. Rao, New Age International Pvt.Ltd, Publishers of Geotechnical Engineering, B.M. Das, Thomson Brooks / Cole 5. Soil strength and slope stability, J.M. Duncan, S.G. Wright, John Wiley & Sons (Imprint: Hoboken, N.J.), 2005 Elsevier Scientific Publishing Blackie Academic & Professional	2. Inical Engineering Series), V.N.S. 3. Basic and Applied Soil Mechamcs, Gopal Ranjan 4. Principles 6. Slope Analysis, R. Chowdhury, 7. The Stability of Slopes, E.N. Bromhead,
	Structural Analysis-II	CE(PE)602B	1. Structural Analysis (Vol I & Vol II), S.S. Bhavikatti, Vikas Publishing House Pvt. Ltd 2. Structural Analysis, Ramamurtham Materials and Theory of Structures (Vol I & Vol II), Purmia, Jain, Jain, Laxmi Publication 4. Structural Analysis, Pandit and Gupta, TMH 5. Structural Analysis, R.C. Hibbeler, Prentice Hall Structures, Timoshenko Young, McGrawHill matrix structural Analysis, J.S. Przemietechki, DOVER PUBLICATIONS, INC.	3. Strength of 6. Theory of 7. Theory of
Soft Skills and Interpersonal Communication - I	CE(OE)601A	1. Theories of Communication: A Short Introduction, Armand Matterlart and Michele Matterlart, Sage Publications Ltd Fisher, and Diane Litovoch San Amelino, CA. Advanced Communication Designs, 1997. 3. Writing and Speaking at Work: A Practical Guide for Business Communicators, Edward P. Bailey, Prentice-Hall Business Communication, Lillian Churney and Jeanette Martin, Prentice Hall	2. Professional Writing Skills, Chan, Jarvis 4. Intercultural	
4TH	Hydraulic Structure	CE(PE)701C	1. Hydraulic Structures, Novak, A. I. B. Moffat, C. E. & FN Spon, UK, 2010 Structures, S. H. Chen, Springer Nature, USA, 2015 and Hydraulic Structures, S. K. Sharma, S. Chand Publishing, New Delhi, 2017 4. Dams and Appurtenant Hydraulic Structures, A. Tanchev, CRC Press, USA, 2014 5. Fluid Mechanics and Hydraulic Machines, K. Subramanya, McGraw Hill Education (India) Private Limited, New Delhi, Chennai, 2019	2. Hydraulic 3. Irrigation Engineering
	Prestressed Concrete	CE(PE)702A	1. Prestressed Concrete, N. KrishnaRaju, TMH Concrete, Ramamurtham, Dhanpat Rai Publishing Company Prestressed Concrete, N.C. Sinha and S.K. Roy, S. Chand 4. Prestressed Concrete, Karuna Moy Ghosh, PHI Prestressed Structures, T.Y. Lin and N.H. Burns	2. Prestressed 3. Fundamentals of 5. Design of
	Air and Noise Pollution and Control	CE(PE)703A	1. Introduction to Environmental Engineering and Science, Masters, G.M., Eja, W.P. Prentice Hall / Pearson 2. Environmental Engineering: A Design Approach, Sincero, A. Sincero, G. Prentice Hall 3. Environmental Engineering Volume-1 and Volume-2, Garg, S.K. Khanna Publishers 4. Air Pollution, Rao, M.N., Rao, H.V.N, Tata McGraw Hill	

88

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



204A Structural Dynamics	CE(PE)704A	1. Structural Dynamics (Theory and Computation), Mario Paz, CBS Publishers 2. Dynamics of Structure (Theory and Application to Earthquake Engineering), A.K. Chopra, Pearson Education 3. Dynamics of Structures, Ashok K. Jain, Pearson Education	3.
Railway and Airport Engineering	CE(PE)705A	1. A Textbook of Railway Engineering, Saxena S.P. & Arora S.P., Dhanpat Rai & Sons 2. Indian Railway Track, Agarwal M.M., Sachdeva Press 3. Planning & Design, Khanna S.K., Arora M.G. & Jain S.S., Neerchand Brothers 4. Planning & Design of Airports, Hotonjeff R. & McElvey F., Mc. Graw Hill.	3. Airport
Professional Practice, law & Ethics	CE(HS)801	1. Legal Aspects of Building and Engineering Contracts, H.S. Patil 2. National Building Code, BIS 3. Contract Act, Dutta, Eastern Law House 4. & Conciliation of Law in India with case law on UNCITRAL Model Law on Arbitration, Kwatra G.K., Indian Council of Arbitration	2. The 3. Indian 4. The Arbitration
Pavement Materials and Design	CE(PE)801D	1. Highway Engineering, Khanna and Justo, Nem Chand and Bros revised 2006, IS 2720, IS 2386, IS 1201 to 1220, IS 8887- 1995, IS 217- 1986 2. IRC- 51-1992, 63-1976, 74 -1979, 88-1984, 3. IRC- 51-1992, 63-1976, 74 -1979, 88-1984, 4. 53 - 2002, IRC SP- 58 - 2000, 5. "Guidelines for use of Geotextiles in Road Pavements and Associated works"- 2002, IRC 6. State of art, special report 3 - "compaction of earthwork and subgrade"- IRC, HRB, 1999 7. MoRTH 'Specifications for Roads and Bridges Works'- Indian Roads Congress	2. IS 73, 4. IRC SP
Human Resource Development and Organizational Behavior	CE(OE)801A	1. Organizational Behavior, Robbins, S. P. & Judge, T.A. Pearson 2. Organizational Behavior, Luthans, Fred, McGraw Hill 3. Understanding Organizations - Organizational Theory & Practice in India, Shukla, Madhuka, PHI 4. Principles of Organizational, Fincham, R. & Rhodes, P., Oxford University Press	3.
Environmental Impact Assessment and Life cycle Analysis	CE(OE)802A	1. Personality Development and Soft Skills, Biswas K. Mitra, Oxford University 2. Soft Skills: An Integrated Approach to Maximize Personality, Gajendra Singh Chauhan and Sangeeta Sharma, Wiley 3. The Age of Soft Skills: Attitude, Communication and Etiquette for Success, Gopulawarny Ramesh and Mahadevan Ramesh, Pearson	

88

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



CR

DEPARTMENTAL MISSION, VISION, PO, PSO, PEO:

Mission:

The mission of the department is as follows:

- To impart student-centric innovative education in research-conducive environment.
- To transform the students into world class civil engineers.
- To ensure that the graduates are employable, good entrepreneurs and competent scholars.
- To enable the students to be creative designers bringing excellence in the areas of construction technologies.
- To empower the students for global infrastructural development, maintaining sustainable environment and improving quality of life.

Vision:

The vision of the department is to create competent civil engineers who will contribute creatively in both public and private sectors, serve community, pursue higher studies and take up the challenges of cutting edge technologies.

Program Outcomes:

- (1) **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- (2) **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- (3) **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- (4) **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- (5) **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- (6) **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- (7) **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- (8) **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- (9) **Individual and team work:** Function effectively as an individual, and as a member or leader in multidisciplinary settings.


Principal in Charge
Hooghly Engineering & Technology College
Mishananda Road, Pipulpati, Hooghly.


02/11/21



(10) **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

(11) **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

(12) **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes

PSO1: Competence in Civil Engineering: Educating students with fundamental mathematical, scientific, and engineering knowledge to have a significant and positive long-term impact on the field of civil engineering.

PSO2: Usage of Cutting Edge Technology: Inspiring students and preparing them for successful professional careers using appropriate techniques, resources and modern attitudes and modeling to complex engineering activities and research.

PSO3: Ability to Coordinate and communicate in groups: Emphasizing the importance of working in a team effectively and to communicate properly within the team to achieve the desired outcome.

Program Educational Objectives (PEOs)

PEO 1: Fundamentals

To provide the students with a strong foundation in the basic Sciences and Mathematics that will enable them to identify and solve real time problems in Civil engineering for Industries and Research activities.

PEO 2: Core Competence

To provide broad knowledge in Civil engineering and students shall be able to apply their knowledge in the relevant areas.

PEO3: Multidisciplinary Competence

To provide opportunity for students to work as part of teams on multidisciplinary projects. Students shall have relevant engineering design experience so that they shall understand the relationship between theory and practice for Core Subjects.

PEO 4: Communication

Graduates shall possess communication skills to convey and receive the problems and their solutions while working in teams and to become an effective leader.

PEO 5: Ethics

To promote student awareness of life-long learning and to develop them as Professionals with ethics. It also strives to make them responsible citizens to promote progress of industrial growth and societal development.

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

02/11/21



CO, PO, PSO mapping of Civil Engineering - Societal & Global Impact CE(HS)401

Name of the Courses & Course Code	Course Outcome with Course Code	Course Outcomes Description	Programme Outcomes												Programme Specific Outcomes			
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Civil Engineering - Societal & Global Impact CE(HS)401	CE(HS)401 CO1	The students will be able to the impact which Civil Engineering projects have on the Society at large and on the global arena and using resources efficiently and effectively.	4	2	1	2	1	3	4	3	3	3	3	3	1	3	2	3
	CE(HS)401 CO2	The students will be able to the extent of Infrastructure, its requirements for energy and how they are met: past, present and future	3	2	1	2	1	3	4	2	2	2	2	2	1	3	2	3
	CE(HS)401 CO3	The students will be able to the Sustainability of the Environment, including its Aesthetics	2	2	2	1	2	4	4	3	2	2	2	2	1	2	2	2
CE(HS)401 CO4	The students will be able to the potentials of Civil Engineering for Employment creation and its Contribution to the GDP	2	2	2	1	1	3	4	3	2	2	1	1	1	3	2	3	
CE(HS)401 CO5	The students will be able to the Built Environment and factors impacting the Quality of Life	2	2	2	2	2	3	3	3	2	2	2	2	3	2	2	2	
CE(HS)401 CO6	The students will be able to the precautions to be taken to ensure that the above-mentioned impacts are not adverse but beneficial.	1	2	3	2	1	4	4	2	2	2	1	1	1	2	3	2	
Average			2.33	2	1.833	1.67	1.33	3.33	3.83	2.5	2.17	1.833	2	1.167				
Attainment			2.3	2.0	1.8	1.7	1.3	3.3	3.8	2.5	2.2	1.8	2.0	1.2				

Arpita Das
Course teacher



Course Code	Course Outcomes		Programme Outcomes												Programme Specific Outcomes		
	Course Outcome with Course Code	Description At the end of the course the students will be able to.....	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Structural Analysis II (CE1PE3602B)	CE1PE3602B CO1	Apply the Slope Deflection and Moment Distribution Method to analyze indeterminate structures.	2	4	4	4	3	2	3	1	2	1	1	3	3	2	3
	CE1PE3602B CO2	Develop and analyze the concept of suspension bridge and stiffness girders.	2	3	3	4	3	3	3	2	2	2	1	3	3	3	2
	CE1PE3602B CO3	Apply and analyze the concepts of curved beam analysis in hooks, rings and Bow girders.	2	3	3	4	3	3	3	1	3	1	1	3	2	3	3
	CE1PE3602B CO4	Develop the concept bending in unsymmetrical beams.	2	2	3	3	3	2	1	1	1	2	1	3	2	3	2
	CE1PE3602B CO5	Develop the fundamental concepts of plastic analysis using kinematic method and apply them in frames and continuous beam analysis.	2	4	4	3	2	3	2	2	2	1	1	2	3	4	3
	CE1PE3602B CO6	Develop and analyze the portal frames using Portal and Cantilever method. Develop and analyze the indeterminate structures (continuous beams and frames) using flexibility and stiffness matrix method.	3	3	4	4	3	3	3	1	1	2	1	3	3	3	3
		Average	2.2	3.17	3.5	3.67	2.83	2.67	2.17	1.33	1.5	1.5	1	2.833	2.667	3	2.667
		Attainment	2.2	3.2	3.5	3.7	2.8	2.7	2.2	1.3	1.5	1.5	1.0	2.8	2.7	3.0	2.7

Aspita Das



PO, PSO, CO mapping of Structural Analysis-II (CE(PE)602B)

Name of the Courses & Course Code	Course Outcomes		Programme Outcomes											Programme Specific Outcomes			
	Course Outcome with Course Code	Description At the end of the course the students will be able to.....	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Structural Analysis-II (CE(PE)602B)	CE(PE)602B-CO1	Apply the Slope Deflection and Moment Distribution Method to analyze indeterminate structures.	2	4	4	4	3	2	1	1	2	1	1	3	3	2	3
	CE(PE)602B-CO2	Develop and analyze the concept of suspension bridge and stiffness girders	2	3	3	4	3	3	3	2	2	2	1	3	3	3	2
	CE(PE)602B-CO3	Apply and analyze the concepts of curved beam analysis in hooks, rings and Bow girders.	2	3	3	4	3	3	3	1	1	1	1	3	2	3	3
	CE(PE)602B-CO4	Develop the concept bending in unsymmetrical beams.	2	2	3	3	3	2	1	1	1	2	1	3	2	3	2
	CE(PE)602B-CO5	Develop the fundamental concepts of plastic analysis using kinematic method and apply them in frames and continuous beam analysis.	2	4	4	3	2	3	2	2	2	1	1	2	3	4	3
	CE(PE)602B-CO6	Develop and analyze the portal frames using Portal and Cantilever method. Develop and analyze the indeterminate structures (continuous beams and frames) using flexibility and stiffness matrix method.	3	3	4	4	3	3	3	1	1	2	1	3	3	3	3
		Average	2.2	3.17	3.5	3.67	2.83	2.67	2.17	1.33	1.5	1.5	1	2.833	2.667	3	2.667
		Attainment	2.2	3.2	3.5	3.7	2.8	2.7	2.2	1.3	1.5	1.5	1	2.7	3.0	2.7	

Apita Das



CO, PO, PSO mapping of Design of Steel Structures (CE 602)

Name of the Courses & Course Code	Course Outcomes		Programme Outcomes												Programme Specific Outcomes		
	Course Outcome with Course Code	Description At the end of the course the students will be able to.....	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Design of Steel Structures (CE 602)	CE602.C01	Identify the material properties of structural steel. Moreover, the students will identify different bolted and welded connections, analyse and design them for axial and eccentric loads.	2	3	2	4	2	2	1	3	2	1	1	3	3	3	2
	CE602.C02	Design different steel sections subjected to axial compression and tension following Indian codes of practices.	3	3	4	3	3	2	1	1	2	1	1	3	3	3	2
	CE602.C03	Comprehend the differences between laterally supported and unsupported flexure members. Designing of the flexure members using Indian codes of practice.	2	3	4	3	3	3	2	1	2	1	1	3	2	3	3
	CE602.C04	Analyse and design rolled and built up compression members along with base connection subjected to axial compression, bending and tension.	2	4	4	3	2	2	2	2	1	1	1	2	3	2	3
	CE602.C05	Calculate shear force and bending moment on rolled and built up girders, dimension the section and finally design it following Indian standard design guidelines.	2	4	4	4	3	1	1	2	1	1	1	3	3	1	2
	CE602.C06	Identify different components of gantry system, calculate lateral and vertical loads acting on the system, dimension the components and design them.	2	4	4	4	3	2	1	1	2	1	1	2	3	2	3
	CE602.C07	Design different components of an industrial building.	2	3	4	4	2	2	3	2	3	2	3	3	3	3	3
	Average		2.143	3.429	3.714	3.571	2.57	2	1.571	1.4286	1.86	1.1429	2.71	2.571	2.71429	2.5714	
	Attainment		2.1	3.4	3.7	3.6	2.6	2.0	1.6	1.4	1.9	1.1	2.7	2.7	2.7	2.6	

Anita Das



Name of the Courses & Course Code	Course Outcomes		Programme Outcomes												Programme Specific Outcomes		
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Prestressed Concrete	CE(PE)702A.CO1	After going through this course, the students will be able to Learn the introduction of prestressed concrete member and its deflection properties.	2	2	1	-	-	1	-	-	-	-	-	2	2	-	-
	CE(PE)702A.CO2	Develop the design criteria of prestressed concrete section for flexure and shear properties.	3	3	3	-	-	1	-	-	-	-	-	2	2	-	-
	CE(PE)702A.CO3	Analyze the anchorage zone stress for post-tensioned members.	3	3	2	-	-	1	-	-	-	-	-	2	2	-	-
	CE(PE)702A.CO4	Impart knowledge regarding the methods of Analysis of Statically Indeterminate Structures.	3	3	1	-	-	1	-	-	-	-	-	2	2	-	-
	CE(PE)702A.CO5	Impart knowledge regarding the composite construction of Prestress and In-situ concrete.	3	3	1	-	-	1	-	-	-	-	-	2	2	-	-
	CE(PE)702A.CO6	Impart knowledge regarding Design of Prestressed concrete piles and sleepers and introduction of partial prestressing.	3	3	3	-	-	1	-	-	-	-	-	2	2	-	-
		Average	2.83	2.83	1.83	-	-	1.00	-	-	-	-	-	2.00	2.00	-	-
		Attainment	1.42	1.42	0.92	-	-	0.50	-	-	-	-	-	1.00	1.00	-	-

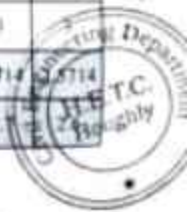
Arpita Das



CO, PO, PSO mapping of Design of Steel Structures (CE(PC)604)

Name of the course & Course Code	Course Outcomes		Programme Outcomes												Programme Specific Outcomes		
	Course Outcome with Course Code	Description At the end of the course the students will be able to.....	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Design of Steel Structures (CE(PC)604)	CE(PC)604 CO1	Identify the material properties of structural steel. Moreover, the students will identify different bolted and welded connections, analyse and design them for axial and eccentric loads.	2	3	2	4	2	2	1	1	2	1	1	3	3	1	2
	CE(PC)604 CO2	Design different steel sections subjected to axial compression and tension following Indian codes of practices.	3	3	4	3	3	2	1	1	2	1	1	3	3	1	2
	CE(PC)604 CO3	Comprehend the differences between laterally supported and unsupported flexure members. Designing of the flexure members using Indian codes of practice.	2	3	4	3	3	3	2	1	2	1	1	3	2	1	3
	CE(PC)604 CO4	Analyse and design rolled and built up compression members along with base connection subjected to axial compression, bending and tension.	2	4	4	3	2	2	2	2	1	1	1	2	3	2	1
	CE(PC)604 CO5	Calculate shear force and bending moment on rolled and built up girders, dimension the section and finally design it following Indian standard design guidelines.	2	4	4	4	3	1	1	2	1	1	1	3	3	3	2
	CE(PC)604 CO6	Identify different components of gantry system, calculate lateral and vertical loads acting on the system, dimension the components and design them.	2	4	4	4	3	2	1	1	2	1	1	2	3	2	3
	CE(PC)604 CO7	Design different components of an industrial building.	2	3	4	4	2	2	3	2	3	2	3	3	3	1	
	Average		2.143	3.429	3.714	3.571	2.571	2	1.571	1.429	1.857	1.1429	1.2857	2.714	2.8571	2.714	2.5714
	Attainment		2.1	3.4	3.7	3.6	2.6	2.0	1.6	1.4	1.9	1.1	1.3	2.7	2.9	2.7	2.5

Arpita Das

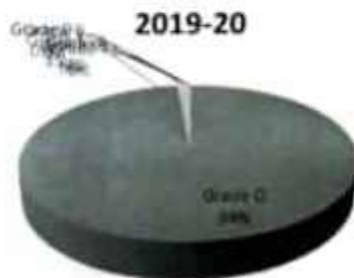


Hooghly Engineering & Technology College

Department: Civil Engineering

Name of Faculty	Arpita Das
Name of Course	Civil Engineering -Societal & Global Impact
Course Code	CE(HS)401
Department	Civil Engineering
Teaching Methodology	Lecture by Faculty , Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade							Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D	F			
-	2018-19	-	-	-	-	-	-	-	-	-	APD
67	2019-20	63	3	1	0	0	0	0	9.22	4	
65	2020-21	32	33	0	0	0	0	0	9.49	4	
63	2021-22	4	57	2	0	0	0	0	9.03	4	
64	2022-23	1	8	21	17	11	4	2	7.17	3	



Arpita Das

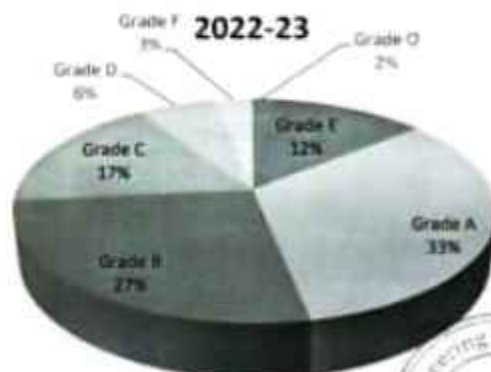
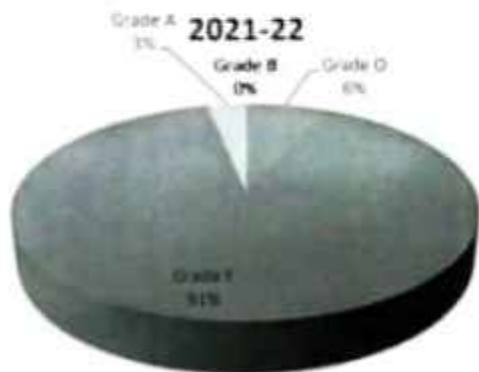


f

Hooghly Engineering & Technology College
Department: Civil Engineering

Name of Faculty	Arpita Das
Name of Course	Civil Engineering: Societal & Global Impact
Course Code	CE(HS)401
Department	Civil Engineering
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total No. of Students	Academic Session	Grade								Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D	F				
	2018-19	-	-	-	-	-	-	-	-	-	-	APD
67	2019-20	63	3	1	0	0	0	0	9.93	4		
65	2020-21	32	33	0	0	0	0	0	8.49	4		
53	2021-22	4	17	2	0	0	0	0	8.03	4		
64	2022-23	1	8	21	17	11	4	2	7.17	3		



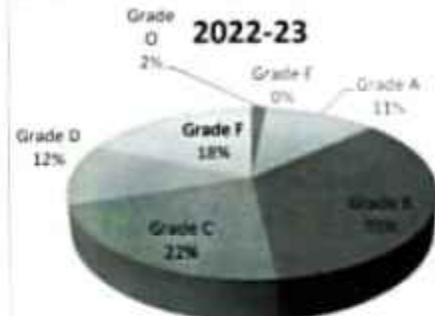
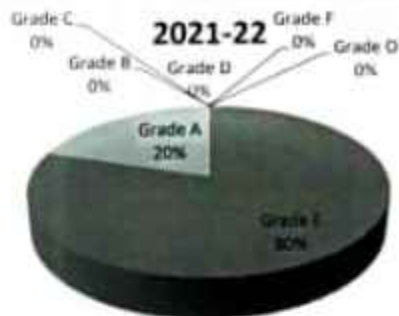
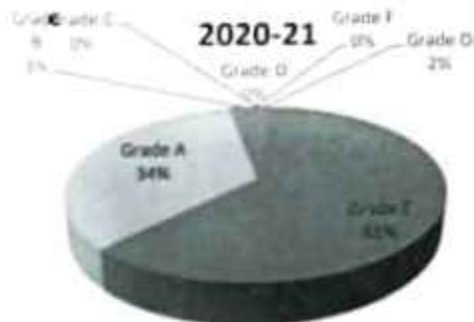
Arpita Das.



Hooghly Engineering & Technology College
Department: Civil Engineering

Name of Faculty	Arpita Das
Name of Course	Structural Analysis II
Course Code	[CE/PE/EG28]
Department	Civil Engineering
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade							Average Grade	Course Attainment	Faculty Acronym
		D	E	A	B	C	D	F			
#VALUE!	2018-19	-	-	-	-	-	-	-	#VALUE!	#VALUE!	APD
#VALUE!	2019-20	-	-	-	-	-	-	-	#VALUE!	#VALUE!	
67	2020-21	1	41	23	2	0	0	0	8.61	4	
65	2021-22	0	52	13	0	0	0	0	8.8	4	
60	2022-23	1	0	7	21	13	7	11	5.8	2	



Arpita Das

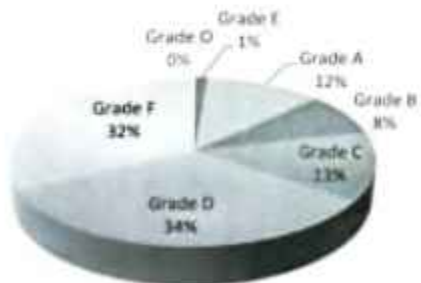


Hooghly Engineering & Technology College
Department: Civil Engineering

Name of Faculty	Arpita Das
Name of Course	Design of Steel Structures
Course Code	[CE(PC)604]
Department	Civil Engineering
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade							Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D	F			
84	2018-19	0	1	10	7	11	28	27	4.74	1	APD
71	2019-20	66	4	0	1	0	0	0	9.9	4	
67	2020-21	11	55	1	0	0	0	0	9.15	4	
65	2021-22	0	53	12	0	0	0	0	8.82	4	
61	2022-23	1	5	8	15	15	10	7	6.2	2	

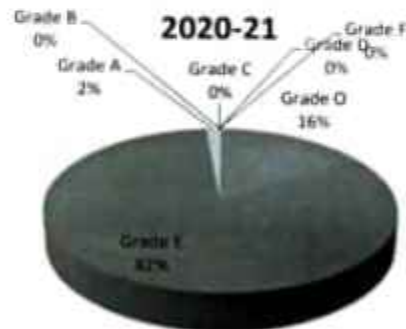
2018-19



2019-20



2020-21



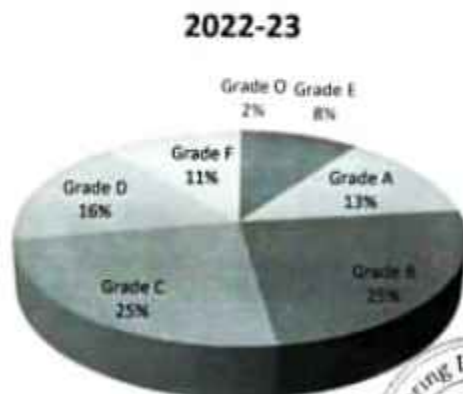
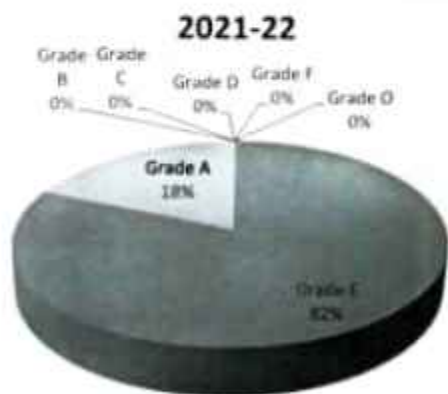
Arpita Das



Hooghly Engineering & Technology College
Department: Civil Engineering

Name of Faculty	Arpita Das
Name of Course	Design of Steel Structures
Course Code	ICE(PC)6D4
Department	Civil Engineering
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total No. of students	Academic Session	Grade							Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D	F			
84	2018-19	0	1	10	7	11	28	27	4.74	1	APD
71	2019-20	66	4	0	1	0	0	0	9.9	4	
67	2020-21	11	55	1	0	0	0	0	9.15	4	
65	2021-22	0	53	12	0	0	0	0	8.82	4	
61	2022-23	1	5	8	15	15	10	7	6.2	2	



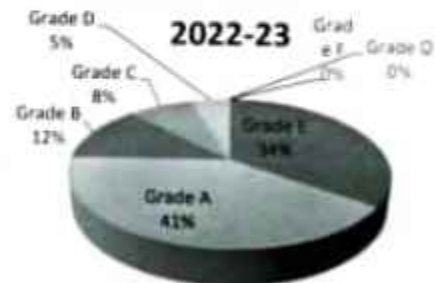
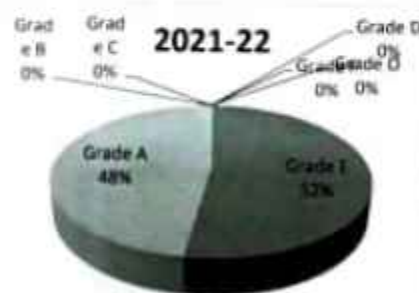
Arpita Das



Hooghly Engineering & Technology College
Department: Civil Engineering

Name of Faculty	Arpita Das
Name of Course	Hydraulic Structure
Course Code	CE(PE)701C
Department	Civil Engineering
Teaching Methodology	Lecture by Faculty ; Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade							Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D	F			
#VALUE!	2018-19	-	-	-	-	-	-	-	#VALUE!	#VALUE!	APD
#VALUE!	2019-20	-	-	-	-	-	-	-	#VALUE!	#VALUE!	
8	2020-21	7	0	0	0	1	0	0	9.5	4	
67	2021-22	0	95	32	0	0	0	0	8.52	4	
64	2022-23	0	22	26	8	5	3	0	7.92	3	



Arpita Das.

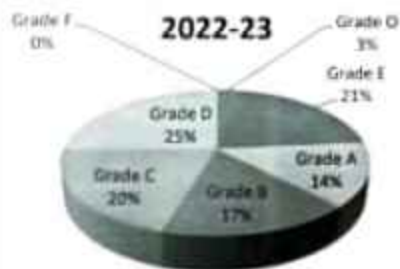


[Signature]

Hooghly Engineering & Technology College
Department: Civil Engineering

Name of Faculty	Arpita Das
Name of Course	Prestressed Concrete
Course Code	CE(PE)202A
Department	Civil Engineering
Teaching Methodology	Lecture by Faculty , Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade						Average Grade	Course Attainment	Faculty Acronym	
		D	E	A	B	C	D				F
#VALUE!	2018-19	-	-	-	-	-	-	-	#VALUE!	#VALUE!	APD
#VALUE!	2019-20	-	-	-	-	-	-	-	#VALUE!	#VALUE!	
#VALUE!	2020-21	-	-	-	-	-	-	-	#VALUE!	#VALUE!	
#VALUE!	2021-22	-	-	-	-	-	-	-	#VALUE!	#VALUE!	
54	2022-23	2	13	9	11	13	16	0	6.94	2	



Arpita Das

**HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
CIVIL ENGINEERING DEPARTMENT**

Correlation of COs with Pos and PSOs

Environmental Engineering Laboratory CE(PC)595 2022-2023

COs of a Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	2	-	1	1	2	-	2	-	1	1	2	1	2
CO2	2	-	2	-	-	-	1	-	2	-	-	1	2	-	2
CO3	2	-	2	1	-	1	2	-	3	-	-	2	2	-	3
CO4	2	2	2	1	-	1	2	-	3	-	1	2	2	-	3
CO5	2	2	2	1	-	1	2	-	3	-	1	2	2	-	3
CO6	2	4	4	4	3	1	2	-	4	-	3	3	4	3	4
Average Correlation Value	2	1.33	2.33	1.16	0.66	0.83	1.83		2.83		1	1.83	2.33	0.66	2.83
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Environmental Engineering Laboratory CE(PC)595	1.50	1.00	1.75	0.87	0.50	0.62	1.37	-	2.10	-	0.75	1.37	1.75	0.50	2.12

Handwritten initials

Handwritten signature

Handwritten initials



Hooghly Engineering & Technology College

Civil Engineering Department

CE(PC)494 [Concrete Technology Laboratory]

COs of a Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	-	-	-	1	-	1	1	2	2	3
CO2	3	2	2	2	2	1	1	1	1	-	-	1	2	1	3
CO3	3	2	2	2	2	1	-	-	1	-	-	1	2	2	3
CO4	1	1	1	1	1	-	1	1	3	2	2	1	3	1	2
CO5	1	1	1	2	2	1	-	1	-	1	-	1	3	2	2
CO6	3	2	1	2	1	-	-	1	-	2	2	1	3	2	2
CO7	3	1	1	2	2	-	-	1	-	1	1	1	2	2	1
Average Coefficient Value	2.43	1.57	1.43	1.86	1.71	0.43	0.29	0.71	0.86	0.86	0.86	1	2.43	1.71	2.29

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
2022-2023	2.43	1.57	1.43	1.86	1.71	0.43	0.29	0.71	0.86	0.86	0.86	1.00	2.43	1.71	2.29

Attainment level
4

Signature
4/1/23

Signature
4/1/23



Department of Civil Engineering
 Paper Name: Soil Mechanics Laboratory
 Session: 2022-2023

Year: 3rd

Semester: 5th

Paper Code: CE(PC)594

Name of the Laboratory in-Charge: Prof. Tanumoy Ghosh

Name of the Technical Assistant (s): Mr. Somnath Dey

CORRELATION OF COs WITH POs AND PSOs_2022-23

Course Code	Course Name	CO	Course Outcomes	PO												PSO		
				1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CE(PC)594	Soil Mechanics Laboratory	1	Classify the types of soil and determine its natural moisture content alongwith specific gravity	2	2	-	2	2	-	1	-	3	-	-	2	3	2	2
		2	Estimate in-situ density of soil by core cutter and sand replacement method.	2	3	-	2	1	-	1	-	3	-	-	2	3	2	2
		3	Develop grain size distribution curve and Atterberg limits for soil.	2	2	-	2	2	-	1	-	3	-	-	2	3	2	2
		4	Demonstrate laboratory tests to determine permeability and compaction characteristics of soil	3	2	-	2	2	-	1	-	3	-	-	2	3	2	2
		5	Calculate the shear strength parameters of soil by using UCS Vane Shear Direct Shear & Triaxial	3	2	-	3	2	-	1	-	3	-	-	1	3	2	2
		6	Calculate the California Bearing Ratio (CBR) of soil.	2	2	-	3	2	-	1	-	3	-	-	2	3	2	2
Average Correlation Value				2.3	2.2	-	2.3	2	-	1	-	3	-	-	1.8	3	2	2

COs-POs & PSOs correlation matrices of all courses for a Program:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
COURSE: SOIL MECHANICS LABORATORY: CE(PC)594	2.3	2.2	-	2.3	2	-	1	-	3	-	-	1.8	3	2	2




Assignment for CA-1

Structural Analysis-II [CE(PE)602B]

Concerned faculty members: SBD, RJP

Academic year: 2022-23

Prepare a Power-point presentation on the given topics being assigned Class roll-wise. Minimum and maximum number of presentation slides are 5 and 10 respectively. Convert the PPT to Portable Document Format (.pdf) and submit it in the Google Classroom assignment section only on or before 30-01-2023 (Monday). Since the pdf file will be uploaded to the MAKAUT portal for the purpose of CA-1 assessment, don't forget to rename the file with your Class Roll Number and Name in the format given below before submission.

(Example: 01_ Saikat Pal). Maintain the format strictly.

Roll No.	Title of presentation
1-8	Stiffening girder in cable suspension bridges
9-16	Introduction to Plastic Analysis of Structures
17-24	Portal method of Horizontal load Analysis
25-32	Slope Deflection method
33-40	An overview on Moment distribution method

Arpita Das.

for S. Chattopadhyay
RAJDIIP PAUL
H.O.D.

Civil Engineering
Hooghly Engineering & Technology College

Assignment for CA-1

Design of Steel Structures [CE(PC)604]

Concerned faculty members: SBD, APD

Academic year: 2022-23

Prepare a Power-point presentation on the given topics being assigned Class roll-wise. Minimum and maximum number of presentation slides are 5 and 10 respectively. Convert the PPT to Portable Document Format (.pdf) and **submit it in the Google Classroom assignment section only on or before 30-01-2023 (Monday)**. Since the pdf file will be uploaded to the MAKAUT portal for the purpose of CA-1 assessment, **don't forget to rename the file with your Class Roll Number and Name in the format given below before submission.**

(Example: 01_ Saikat Pal). Maintain the format strictly.

Roll No.	Title of presentation
1-8	An introduction to Steel Beams
9-16	Modes of failure of tension members
17-24	Effective Net Sectional Area of tension members
25-32	An explanation on Stress-Strain Curve of mild steel
33-40	An introduction to Plate Girder

Arpita Das for A Chattopadhyay

RAJDIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

Continuous Assessment-I
Deep Foundations: (CE(OE)801C)
Even Semester 2023

Prepare a PowerPoint Presentation (PPT) on the following topics based on the roll-wise distribution given in the following table. The number of slides shall range between 5 to 6. Convert the PPT to Portable Document Format (pdf) and upload it on Google classroom on or before 30-01-2023.

Please keep in mind, that the slides should be original. The converted pdf file will be uploaded to the MAKAUT portal during the assessment of CA-1.

RENAME THE PDF FILE WITH YOUR NAME AND CLASS ROLL NUMBER.

Sl. No.	TOPICS OF PPT	Roll No
1)	Types of Well Foundation	1-7
2)	Classification of Well Foundation	8-14
3)	Various components of Well Foundation	15-21
4)	Classification of Pile Foundations based on Functions	22-28
5)	Classification of Pile Foundations based on Materials	29-35
6)	Bearing capacity of piles based	36-42

Arpita Das.

for A. Chattopadhyay

RAJDIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

Assignment for CA-2
Surveying & Geomatics | CE(PC)403|
Concerned faculty members: APD
Academic year: 2022-23

Prepare a 2-page report on the topics with proper reference based on the roll-wise distribution given in the attached file. Convert the .docx .doc file to Portable Document Format (.pdf) and upload it on Google Classroom on or before 13-03-2023. The reports should be original. The converted pdf file will be uploaded to the MAKAUT portal during the assessment of CA-2.

N.B: Rename the pdf file before submission in the given format.

(Example: 01_ Soumen Saha). Maintain the format strictly.

Roll No.	Title of Presentation
1-6	Classification of photogrammetry.
7-12	Types of aerial photograph.
13-21	What are the Principal point and Marginal information?
22-28	What is the Stereo photogrammetry.
29-35	Describe briefly picture plane, ground plane, perspective centre.
36-40	Discuss about distortion due to height or relief.
41-46	Draw and discuss briefly the photographic coverage along a flight strip and flight path.
47-54	Compass Traversing
55-65	Classification of Levelling

Arpita Das.

for A Chattopadhyay

RAJDIIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

Assignment for CA-2
Design of Steel Structures [CE(PC)604]
Concerned faculty members: SBD, APD
Academic year: 2022-23

Prepare a 2-page report on the topics based on the roll-wise distribution given in the attached file. Convert the .dox.doc file to Portable Document Format (.pdf) and upload it on Google Classroom on or before 01-03-2023. The reports should be original. The converted pdf file will be uploaded to the MAKAUT portal during the assessment of CA-2.

N.B: Rename the pdf file before submission in the given format.

(Example: 01_Soumen Saha). Maintain the format strictly.

Roll No.	Title of Presentation
1-6	Lacing systems
7-12	Battened columns
13-18	Web buckling
19-24	Laterally supported beams
25-30	Web crippling
31-36	Lateral torsional buckling
37-42	Eccentric connections
43-48	Plate Girder: advantages and applications
49-56	Types of Column bases
57-64	An introduction to Gantry Girder

Aspita Das .

for A Chattopadhyay

RAJDIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

Continuous Assessment-2
Deep Foundations: (CE(OE)801C)
Even Semester 2023

Prepare a 2-page report on the topics based on the roll-wise distribution given in the attached file. Convert the .docx/.doc file to Portable Document Format (.pdf) and upload it on Google Classroom on or before 28-02-2023. The reports should be original. The converted pdf file will be uploaded to the MAKAUT portal during the assessment of CA-2.

(Example: 01 Soumen Saha). Maintain the format strictly.

Sl. No.	TOPICS OF PPT	Roll No
1)	Types of Dep Foundations	1-7
2)	Various components of Well Foundation	8-14
3)	Depth of Well Foundation	15-21
4)	Bearing capacity of piles based on Modified Hiley's Formula	22-28
5)	Pile Load Test	29-35
6)	The shape of the Well Foundation	36-42
7)	Classification of Pile Foundations based on Functions	43-49

Arpita Das.

for A. Chattopadhyay

RAJDIIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

Assignment for CA-2
Structural Analysis-II [CE(PE)602B]
Concerned faculty members: SBD, RJP
Academic year: 2022-23

Prepare a 2-page report on the topics based on the roll-wise distribution given in the attached file. Convert the .docx/.doc file to Portable Document Format (.pdf) and upload it on Google Classroom on or before 01-03-2023. The reports should be original. The converted pdf file will be uploaded to the MAKAUT portal during the assessment of CA-2.

N.B: Rename the pdf file before submission in the given format.

(Example: 01_Soumen Saha). Maintain the format strictly.

Roll No.	Title of Presentation
1-6	Plastic bending of beams
7-12	Advantages of Plastic Analysis
13-18	Shape factor and applications
19-24	Distribution factor
25-30	Approximate methods of horizontal load Analysis
31-36	Plastic Mechanisms
37-42	Unsymmetrical Bending
43-48	Flexibility approach in matrix method
49-56	Plastic hinge formation
57-64	Stiffness approach in matrix method

Arpita Das.

for Chattopadhyay

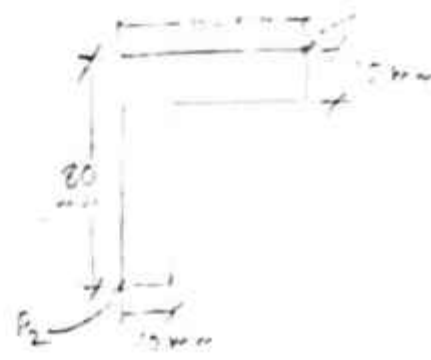
RAJDIIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

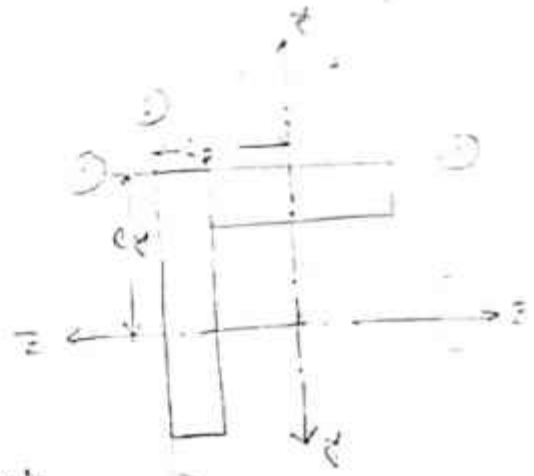
14.2



- i) Locate principle axis and find principle moment of inertia.
- ii) Calculate the deflection at the free end, considering $E = 2 \times 10^5 \text{ N/mm}^2$
- iii) Calculate bending stress at point P_1 & P_2 near support.

Solⁿ:- Location of principle axis

i) Let us assume, the centroid of the c/s is located at a distance ' c_2 ' from the left most vertical edge and ' c_y ' from the top most horizontal edge.



Taking moment about ①-① axis,

$$(10 \times 80 \times \frac{80}{2}) + (10 \times 50 \times \frac{10}{2}) = (80 \times 10 + 50 \times 10) \times c_y$$

$$\Rightarrow c_y = 26.538 \text{ mm}$$

Taking moment about ②-② axis,

$$(10 \times 80 \times \frac{10}{2}) + [10 \times 50 \times (10 + \frac{50}{2})] = (80 \times 10 + 50 \times 10) \times c_2$$

$$\Rightarrow c_2 = 16.538 \text{ mm}$$

Moment of inertia about z-z axis of the c/s,

$$I_{zz} = \left[\frac{10 \times 80^3}{12} + (10 \times 80) \times \left(-c_y + \frac{80}{2} \right)^2 \right] + \left[\frac{50 \times 10^3}{12} + (50 \times 10) \times \left(-c_2 + \frac{10}{2} \right)^2 \right]$$

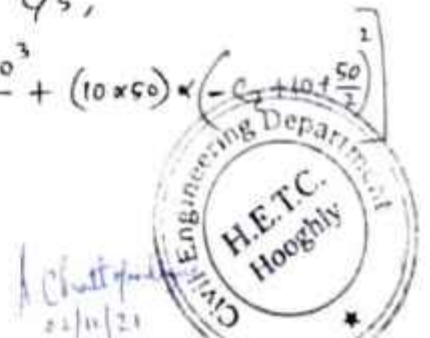
$$= 807756.41 \text{ mm}^4$$

Moment of inertia about y-y axis of the c/s,

$$I_{yy} = \left[\frac{80 \times 10^3}{12} + (80 \times 10) \times \left(-c_2 + \frac{10}{2} \right)^2 \right] + \left[\frac{10 \times 50^3}{12} + (10 \times 50) \times \left(-c_y + 10 + \frac{50}{2} \right)^2 \right]$$

$$= 387756.41 \text{ mm}^4$$

Arpita Das



Product of inertia of c/s about y-y & z-z axis,

$$I_{yz} = A_1 y_1 z_1 + A_2 y_2 z_2$$

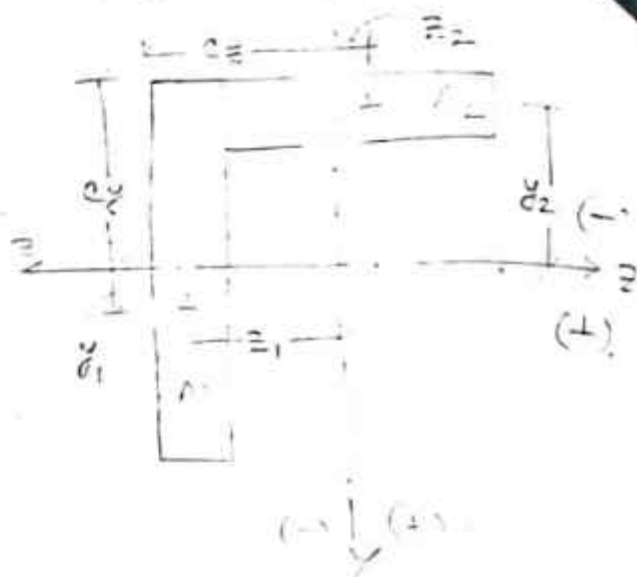
$$= (10 \times 80) \times \left(-c_y + \frac{80}{2}\right) \times \left(-c_z + \frac{10}{2}\right)$$

$$+ (10 \times 50) \times \left(-c_y + \frac{10}{2}\right) \times \left(-c_z + 10 + \frac{50}{2}\right)$$

$$= 800 \left(-26.538 + 40\right) \left(-16.538 + 5\right) +$$

$$500 \left(-26.538 + 5\right) \left(-16.538 + 10 + 25\right)$$

$$= -323076.923 \text{ mm}^4$$



If, θ be the angle between y-axis and u-axis,

$$\tan 2\theta = \frac{2 I_{yz}}{I_{zz} - I_{yy}} = -1.53846$$

$$\Rightarrow 2\theta = -56.97612^\circ$$

$$\Rightarrow \theta = -28.488^\circ$$

$$\sin 2\theta = \frac{I_{yz}}{\sqrt{I_{yz}^2 + \left(\frac{I_{zz} - I_{yy}}{2}\right)^2}} = -0.83844$$

$$\cos 2\theta = \frac{(I_{zz} - I_{yy})/2}{\sqrt{I_{yz}^2 + \left(\frac{I_{zz} - I_{yy}}{2}\right)^2}} = 0.54498$$

$$I_{uu} = \frac{1}{2} (I_{yy} + I_{zz}) - \frac{1}{2} (I_{zz} - I_{yy}) \cos 2\theta - I_{yz} \sin 2\theta$$

$$= 212429.9947$$

$$I_{vv} = \frac{1}{2} (I_{yy} + I_{zz}) + \frac{1}{2} (I_{zz} - I_{yy}) \cos 2\theta + I_{yz} \sin 2\theta$$

$$= 983082.8253$$

This is principle moment of inertia.

or symmetric bending problem deflection at free end,

$$\Delta = \frac{wl^4}{8EI}$$

$$\Delta_u^A = \frac{P_u l^4}{8EI_{vv}} = \frac{P_y \cos \theta l^4}{8EI_{vv}}$$

for problem A, $\Delta_y^A = \Delta_u^A \cos \theta = \frac{P_y \cos^2 \theta l^4}{8EI_{vv}}$

$$\Delta_z^A = -\Delta_u^A \sin \theta = -\frac{P_y \sin \theta \cos \theta l^4}{8EI_{vv}}$$

for problem B, $\Delta_v^B = \frac{P_v l^4}{8EI_{uu}} = \frac{P_y \sin \theta l^4}{8EI_{uu}}$

$$\Delta_z^B = \Delta_v^B \cos \theta = \frac{P_y \sin \theta \cos \theta l^4}{8EI_{uu}}$$

$$\Delta_y^B = \Delta_v^B \sin \theta = \frac{P_y \sin^2 \theta l^4}{8EI_{uu}}$$

\therefore Net vertical deflection, $\Delta_y = \Delta_y^A + \Delta_y^B$

$$= \frac{P_y l^4}{8E} \left(\frac{\cos^2 \theta}{I_{vv}} + \frac{\sin^2 \theta}{I_{uu}} \right)$$

$$= \frac{10 \times 4000^4}{8 \times 2 \times 10^5 \times 10^3} \left(\frac{\cos^2(-28.488)}{953082.8253} + \frac{\sin^2(-28.488)}{212429.9947} \right)$$

$$= 2.97 \text{ mm}$$

Net horizontal deflection, $\Delta_z = \Delta_z^A + \Delta_z^B$

$$= -\frac{P_y \sin \theta \cos \theta l^4}{8EI_{vv}} + \frac{P_y \sin \theta \cos \theta l^4}{8EI_{uu}}$$

$$= \frac{P_y \sin \theta \cos \theta l^4}{8E} \left(\frac{1}{I_{uu}} - \frac{1}{I_{vv}} \right)$$

$$= \frac{10 \times \sin(-28.488) \cos(-28.488) 4000^4}{8 \times 2 \times 10^5 \times 10^3} \times$$

$$\left(\frac{1}{212429.9947} - \frac{1}{953082.8253} \right)$$

$$= -2.475$$

$$= 2.475 \text{ mm } (\leftarrow)$$



iii) Calculation of bending stress

Bending moment of the beam near support

$$= -\frac{wl^2}{2} = -\frac{10 \times 4000^2}{2 \times 1000} = -80000 \text{ Nmm}$$

For P_1 point, $y = -c_y$

$$= -26.538 \text{ mm}$$

$$z = -c_z + 60$$

$$= 43.462 \text{ mm}$$

Bending stress at P_1 point,

$$= M_{zz} \left[\frac{\cos \theta}{I_{yy}} (y \cos \theta + z \sin \theta) - \frac{\sin \theta}{I_{zz}} (z \cos \theta - y \sin \theta) \right]$$

$$= (-80000) \left[\frac{\cos(-28.488)}{983082.8253} \left\{ -26.538 \times \cos(-28.488) + 43.462 \times \sin(-28.488) \right\} - \frac{\sin(-28.488)}{212429.9947} \left\{ 43.462 \times \cos(-28.488) - (-26.538) \times \sin(-28.488) \right\} \right]$$

$$= -1.43 \text{ N/mm}^2$$

For point P_2 , $y = -c_y + 80 = -26.538 + 80 = 53.462 \text{ mm}$

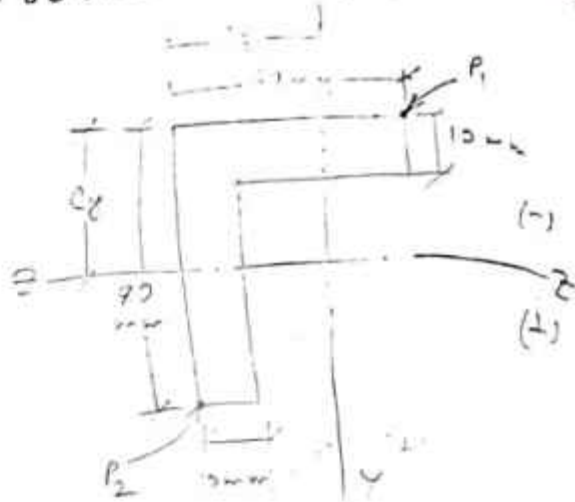
$$z = -c_z = -16.538 \text{ mm}$$

Bending stress at P_2 point,

$$= M_{zz} \left[\frac{\cos \theta}{I_{yy}} (y \cos \theta + z \sin \theta) - \frac{\sin \theta}{I_{zz}} (z \cos \theta - y \sin \theta) \right]$$

$$= (-80000) \left[\frac{\cos(-28.488)}{983082.8253} \left\{ 53.462 \times \cos(-28.488) + (-16.538) \times \sin(-28.488) \right\} - \frac{\sin(-28.488)}{212429.9947} \left\{ -16.538 \times \cos(-28.488) - 53.462 \times \sin(-28.488) \right\} \right]$$

$$= -5.83 \text{ N/mm}^2$$



10.4 SHEAR CENTRE

In the case of beams with two axes of symmetry, if load acts through the centroid which is the intersection of two symmetric axes, there will be only flexure on the section. Figure 10.13(a) and (b) shows such cases. If load is having an eccentricity e , then the flexure is associated with torsion $W \times e$ about the axes as shown in Figure 10.13(c) and (d).

However, in the case of beams with cross-section having only one axis of symmetry or no axis of symmetry, even if the load acts through the centroid, twisting phenomenon may be observed as shown in Figure 10.14(a) and (b).



Figure 10.13(a): Symmetrically loaded rectangular section.

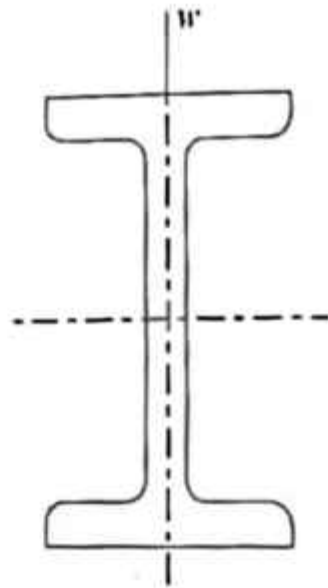


Figure 10.13(b): Symmetrically loaded I-Section.



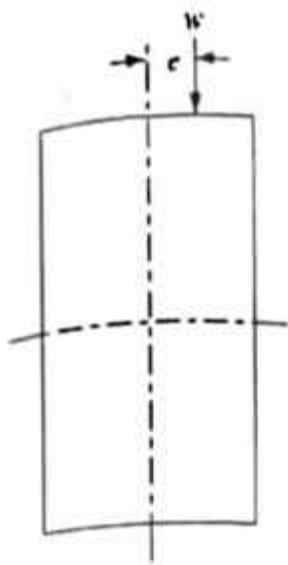


Figure 10.13(c): Eccentrically loaded rectangular section.

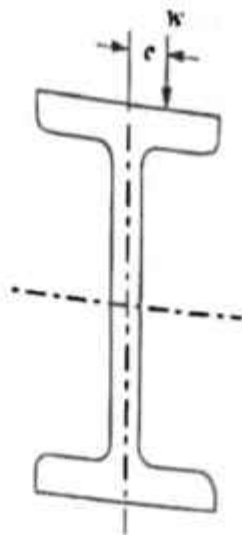


Figure 10.13(d): Eccentrically loaded I-Section.

There exists a particular point in the cross-section through which if load acts there will not be twisting of beams but only bending takes place (Figure 10.14(c) and (d)). Such point is called *shear centre*.

Hence, a shear centre may be defined as 'the point in the cross-section of beam through which if load acts there will not be any twisting of the section but there will be only bending'.

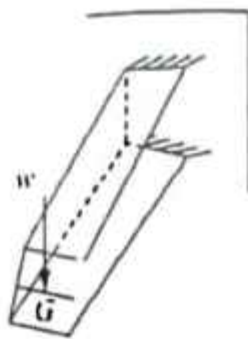


Figure 10.14(a): Twisting of channel subjected to load through centroid.

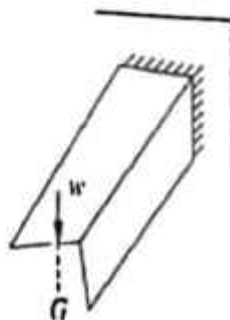


Figure 10.14(b): Twisting of angle subjected to load through centroid.

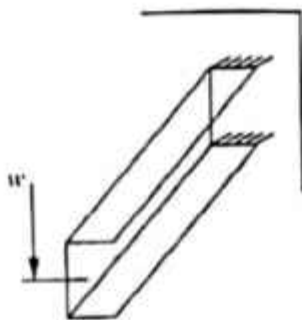


Figure 10.14(c): Load position for no twisting of channel.

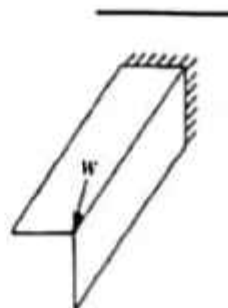


Figure 10.14(d): Load position for no twisting of angle.

The shear centre is having practical significance in the study of behaviour of beams with sections comprising of thin parts, such as channels, angles, I-sections, which are having less resistance to torsion but high resistance to flexure.



10.5 METHOD OF LOCATING SHEAR CENTRE

Assuming that the beam does not twist, calculate shearing stresses in each simple figure of the section using the well known formula.

$$q = \frac{F}{Bl} \sum a\bar{y}$$

$$\therefore Bq = \frac{F}{l} \sum a\bar{y}$$

The expression Bq is often referred as shear flow. Shear flow is the shear force resisted per unit length along the centre line of the narrow strip.

After finding the shear force resisted by each simple figure of the section, determine the resultant of such forces. There will not be torque on the section, if the applied load is exactly opposite to the resultant force. Thus, the shear centre and the direction of the application of the load will be found. The procedure is illustrated with some examples.

Example 10.8 Determine the shear centre and direction of application of the force for an equal angle section shown in Figure 10.15.

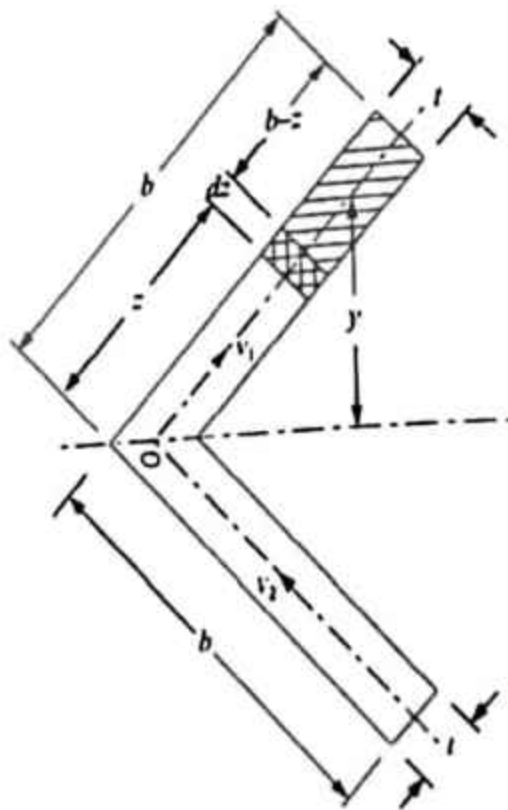
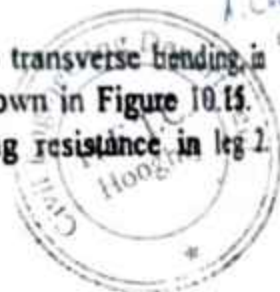


Figure 10.15: Equal angle section.

Solution Let an equal angle bar be used as a beam and be subjected to transverse bending in a plane perpendicular to the axis of symmetry of the cross-section as shown in Figure 10.15.

Let v_1 be the shearing resistance in leg 1 and v_2 be the shearing resistance in leg 2.



Then,

$$v_1 = \int_0^h q da$$

$$= \int_0^h \left(\frac{F}{BI} \right) a \bar{y} da, \text{ where } F \text{ is the applied shear force.}$$

Considering an elemental area dz as shown in Figure 10.15.

a = area above the section

$$= (b - z)t$$

$$\bar{y} = \left(\frac{b+z}{2} \right) \sin 45^\circ = \frac{b+z}{2\sqrt{2}}$$

$$da = t dz$$

and

\therefore

$$v_1 = \int_0^b \left(\frac{F}{tI} \right) (b-z)t \left(\frac{b+z}{2\sqrt{2}} \right) t dz$$

$$= \left(\frac{Ft}{2\sqrt{2}I} \right) \int_0^b (b^2 - z^2) dz$$

$$= \left(\frac{Ft}{2\sqrt{2}I} \right) \left[b^2 z - \frac{z^3}{3} \right]_0^b$$

$$= \left(\frac{Ft}{2\sqrt{2}I} \right) \left[b^3 - \frac{b^3}{3} \right] = \left(\frac{Ft}{3\sqrt{2}} \right) \left(\frac{b^3}{I} \right)$$

But

$$I = \frac{1}{3} t b^3 \text{ about symmetric axis}$$

\therefore

$$v_1 = \left(\frac{Ft}{3\sqrt{2}} \right) \left(\frac{b^3}{\frac{1}{3} t b^3} \right) = \frac{F}{\sqrt{2}}$$

Similarly,

$$v_2 = \frac{F}{\sqrt{2}}$$

Horizontal components of v_1 and v_2 cancel each other. Resultant of v_1 and v_2 is given by

$$V_R = \sqrt{v_1^2 + v_2^2} = F \text{ (upward)}$$

Therefore, the shear centre is the point O and load should act vertically downward. In other words, the load should act at right angle to the symmetric axis.

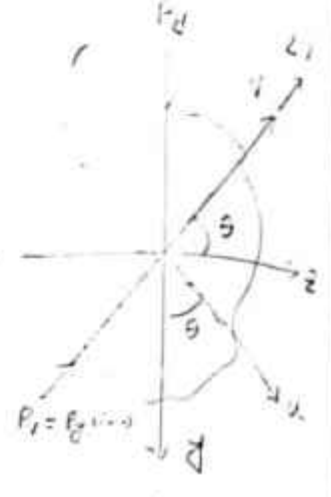
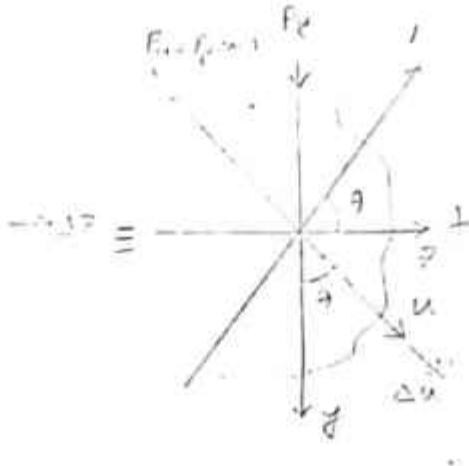


Calculation of deflection in unsymmetrical bending

$$\delta_{xy} = \frac{P_y L^3}{45 E I_{zz}}$$

$$\delta_z = \frac{P_z L^3}{45 E I_{yy}}$$

where, $I_{yy} = \frac{dh^3}{12}$ & $I_{zz} = \frac{bd^3}{12}$



Actual Problem

unsymmetrical bending
at joints is not principle

Problem A

Here, P_u component is considered causing Δu only.
(symmetrical bending)

Problem B

Here, P_v component is considered causing Δv only.
(symmetrical bending)

We have to find out the deflection calculation formula for symmetrical bending case, $\Delta = f(P, L, \alpha, E, I)$

As the actual problem has been divided into two problems, Problem A where $P_u = P_y \cos \theta$ is acting and Problem B where $P_v = -P_y \sin \theta$ is acting.

The deflections are calculated for symmetrical bending problem A & B separately.

For problem A:

$$\Delta_u^A = f(P_u, L, \alpha, I_{vv}, E)$$

i.e., $\Delta_y^A = \Delta_u^A \cos \theta$ and $\Delta_z^A = \Delta_u^A \sin \theta$



For problem B :-

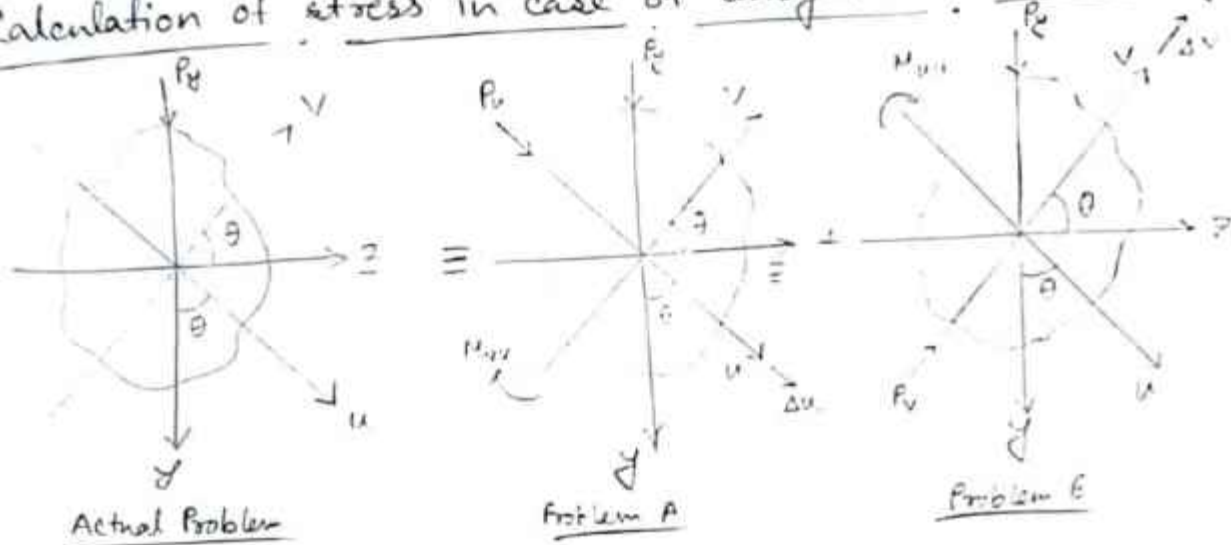
$$\Delta_v^B = f(P_v, L, \alpha, I_{uu}, E)$$

i.e., $\Delta_y^B = -\Delta_v^B \sin \theta$ and $\Delta_z^B = \Delta_v^B \cos \theta$

By superposition of this two problems we get for actual problem,

$$\Delta_y = \Delta_u^A \cos \theta - \Delta_v^B \sin \theta \quad \text{and} \quad \Delta_z = \Delta_u^A \sin \theta + \Delta_v^B \cos \theta$$

Calculation of stress in case of unsymmetrical bending



Stress at any point in the actual section = stress in problem A + stress in problem B

As the actual problem has been divided into two problem.

Problem A where $P_u = P_y \cos \theta$ is acting and

Problem B where $P_v = -P_y \sin \theta$ is acting.

The stresses are calculated for symmetrical bending problem A & B separately and they are algebraically added.

$$\text{Stress at problem A} = \frac{M_{vv}}{I_{vv}} \cdot u$$

$$\text{Stress at problem B} = \frac{M_{uu}}{I_{uu}} \cdot v$$

Where, M_{vv} = moment caused by P_u
 = moment caused by $P_y \cos \theta$
 = (moment caused by P_y) $\times \cos \theta$
 = $M_{zz} \times \cos \theta$

Similarly,

$$\begin{aligned} M_{uu} &= \text{moment caused by } P_v \\ &= \text{moment caused by } -P_y \sin \theta \\ &= (-\text{moment caused by } P_y) \sin \theta \\ &= -M_{zz} \sin \theta \end{aligned}$$

Finally, stress at any point or total stress

$$= \frac{M_{zz} \cdot \cos \theta}{I_{vv}} \cdot u - \frac{M_{zz} \cdot \sin \theta}{I_{uu}} \cdot v$$

$$= \frac{M_{zz} \cos \theta}{I_{vv}} (\alpha \cos \theta + z \sin \theta) - \frac{M_{zz} \sin \theta}{I_{uu}} (z \cos \theta - \alpha \sin \theta)$$

Calculate the net deflection at mid span in vertical and horizontal direction if $E = 2 \times 10^5 \text{ N/mm}^2$

ii) Calculate bending stress at points P_1 & P_2 at mid span.

Sol:- For symmetrical bending problem,

$$\Delta (\text{at centre}) = \frac{PL^3}{48EI}$$

For problem A,

$$\Delta_u^A = \frac{P_u L^3}{48 E I_{vv}} = \frac{P_y \cos \theta \cdot L^3}{48 E I_{vv}}$$

$$\Delta_y^A = \Delta_u^A \cos \theta = \frac{P_y \cos^2 \theta \cdot L^3}{48 E I_{vv}}$$

$$\Delta_z^A = \Delta_u^A \sin \theta = \frac{P_y \sin \theta \cos \theta \cdot L^3}{48 E I_{vv}}$$

For problem B,

$$\Delta_v^B = \frac{P_v L^3}{48 E I_{uu}} = - \frac{P_y \sin \theta \cdot L^3}{48 E I_{uu}}$$

$$\Delta_y^B = - \Delta_v^B \sin \theta = \frac{P_y \sin^2 \theta \cdot L^3}{48 E I_{uu}}$$

$$\Delta_z^B = \Delta_v^B \cos \theta = - \frac{P_y \sin \theta \cdot \cos \theta \cdot L^3}{48 E I_{uu}}$$

Net vertical displacement, $\Delta_y = \Delta_y^A + \Delta_y^B$

$$= \frac{P_y L^3}{48 E} \left(\frac{\cos^2 \theta}{I_{vv}} + \frac{\sin^2 \theta}{I_{uu}} \right)$$

$$= \frac{1000 \times 1500^3}{48 \times 2 \times 10^5} \left(\frac{\cos^2 23.452}{603011.958} + \frac{\sin^2 23.452}{108952.812} \right)$$

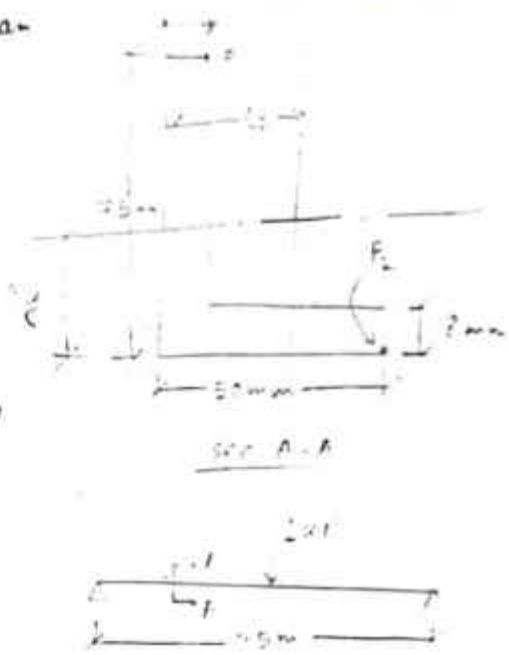
$$= 1.002 \text{ mm } (\downarrow)$$

Net horizontal displacement, $\Delta_z = \Delta_z^A + \Delta_z^B$

$$= \frac{P_y L^3 \sin \theta \cos \theta}{48 E} \left(\frac{1}{I_{vv}} - \frac{1}{I_{uu}} \right)$$

$$= \frac{1000 \times 1500^3 \times \sin 23.452 \cos 23.452}{48 \times 2 \times 10^5} \times \left(\frac{1}{603011.958} - \frac{1}{108952.812} \right)$$

$$= - 0.965 \text{ mm } (\leftarrow)$$



ii) Calculation of bending stress

At mid span M_z calculated caused by,

$$\frac{WL}{4} = \frac{1000 \times 1500}{4} = 375000 \text{ N-mm}$$

$$\left. \begin{aligned} \cos \theta &= \cos 23.452^\circ \\ &= 0.9174 \\ \sin \theta &= \sin 23.452^\circ \\ &= 0.3979 \end{aligned} \right\}$$

a) at point P_1 , $y = (c_y - 75) = (25.474 - 75) = -49.253 \text{ mm}$

$$z = (-c_z + 8) = (-12.974 + 8) = -4.974 \text{ mm}$$

Bending stress at P_1

$$= \frac{M_{zz} \cdot \cos \theta}{I_{vv}} (y \cos \theta + z \sin \theta) - \frac{M_{zz} \sin \theta}{I_{uu}} (z \cos \theta - y \sin \theta)$$

$$= \frac{375000 \times 0.9174}{603011.958} (-49.253 \times 0.9174 - 4.974 \times 0.3979) -$$

$$\frac{375000 \times 0.3979}{108952.812} (-4.974 \times 0.9174 + 49.253 \times 0.3979)$$

$$= -26.9075 - (20.5901)$$

$$= -47.4976 \text{ N/mm}^2$$

b) At point P_2 , $y = c_y = 25.474 \text{ mm}$

$$z = -c_z + 50 = -12.974 + 50 = 37.026 \text{ mm}$$

Bending stress at P_2

$$= \frac{M_{zz} \cdot \cos \theta}{I_{vv}} (y \cos \theta + z \sin \theta) - \frac{M_{zz} \sin \theta}{I_{uu}} (z \cos \theta - y \sin \theta)$$

$$= \frac{375000 \times 0.9174}{603011.958} (25.474 \times 0.9174 + 37.026 \times 0.3979) -$$

$$\frac{375000 \times 0.3979}{108952.812} (37.026 \times 0.9174 - 25.474 \times 0.3979)$$

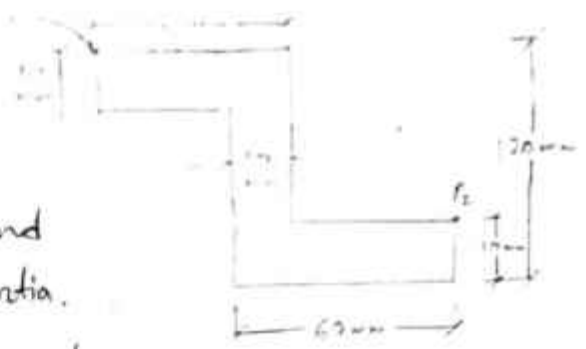
$$= -10.8998 \text{ N/mm}^2$$



i) Locate the principle axis and find principle moment of inertia.

ii) Calculate deflection at free end considering $E = 2 \times 10^5$ mpa

iii) Calculate bending stress at point P_1 and P_2 on the section near support.



Sol:-

i) Location of centroid

Taking moment about ①-①

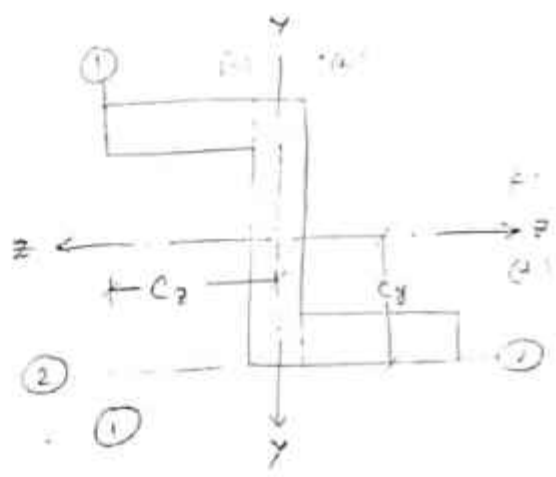
$$C_z = \frac{50 \times 10 \times \frac{50}{2} + 10 \times 120 \times (60 - \frac{10}{2}) + 10 \times 50 \times (60 + \frac{50}{2})}{50 \times 10 + 10 \times 120 + 10 \times 50}$$

$$= 55 \text{ mm}$$

Taking moment about ②-②

$$C_y = \frac{50 \times 10 \times (120 - \frac{10}{2}) + 10 \times 120 \times \frac{120}{2} + 50 \times 10 \times \frac{10}{2}}{50 \times 10 + 10 \times 120 + 50 \times 10}$$

$$= 60 \text{ mm}$$



Moment of inertia about z-z axis,

$$I_{zz} = \frac{10 \times 120^3}{12} + \left[\frac{50 \times 10^3}{12} + (50 \times 10) \times \left(-\frac{120}{2} + \frac{10}{2} \right)^2 \right] + \left[\frac{50 \times 10^3}{12} + (50 \times 10) \times \left(C_y - \frac{10}{2} \right)^2 \right]$$

$$= 4473333 \text{ mm}^4$$

Moment of inertia about y-y axis,

$$I_{yy} = \frac{120 \times 10^3}{12} + \left[\frac{10 \times 50^3}{12} + (10 \times 50) \times \left(-C_z + \frac{50}{2} \right)^2 \right] + \left[\frac{10 \times 50^3}{12} + (10 \times 50) \times \left(\frac{10}{2} + C_z \right)^2 \right]$$

$$= 1118333 \text{ mm}^4$$



Product of inertia about y-y and z-z axis,

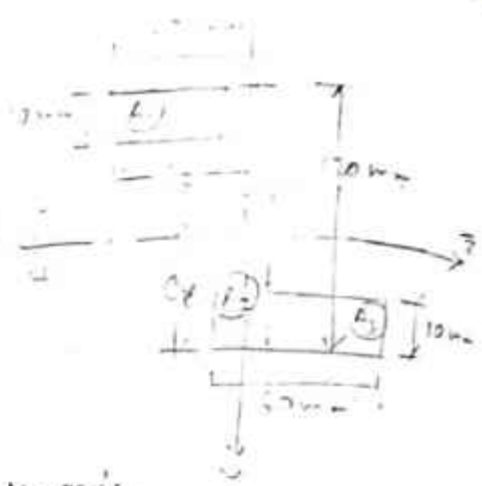
$$I_{yz} = A_1 y_1 z_1 + A_2 y_2 z_2 + A_3 y_3 z_3$$

$$= (10 \times 50) \left(-\frac{120}{2} + \frac{10}{2}\right) \left(-c_2 + \frac{50}{2}\right)$$

$$+ (10 \times 120) (0 \times 0) +$$

$$(10 \times 50) \left(c_2 - \frac{10}{2}\right) \left(55 - \frac{50}{2}\right)$$

$$= 1650000 \text{ mm}^4$$



If, θ be the angle between y axis and u-axis,

$$\tan 2\theta = \frac{2 I_{yz}}{I_{zz} - I_{yy}} = 0.9836$$

$$\Rightarrow \theta = 22.263^\circ$$

Principle moment of inertia

$$I_{uu} = \frac{1}{2} (I_{zz} + I_{yy}) - \sqrt{\left(\frac{I_{zz} - I_{yy}}{2}\right)^2 + I_{yz}^2}$$

$$= 442854.834 \text{ mm}^4$$

$$I_{vv} = \frac{1}{2} (I_{zz} + I_{yy}) + \sqrt{\left(\frac{I_{zz} - I_{yy}}{2}\right)^2 + I_{yz}^2}$$

$$= 5148811.166 \text{ mm}^4$$

ii) Calculation of deflection at free end.

In case of symmetric bending, deflection at free end of the beam, $\Delta = \frac{PL^3}{3EI}$

As, the actual problem has been replaced by two symmetrical bending problem caused by P_u & P_v .

where, $P_u = P_y \cos \theta = 20 \times \cos 22.263^\circ = 18.509 \text{ N}$

$P_v = -P_y \sin \theta = -20 \times \sin 22.263^\circ = -7.577 \text{ N}$

$$\begin{aligned} \text{caused by } P_u &= \frac{P_u L^3}{3EI_{uv}} \\ &= \frac{18.509 \times 4000^3}{3 \times 2 \times 10^5 \times 5145511.166} \\ &= 0.3835 \text{ mm} \end{aligned}$$

$$\begin{aligned} \Delta_v \text{ caused by } P_v &= \frac{P_v L^3}{3EI_{uv}} \\ &= \frac{-7.577 \times 4000^3}{3 \times 2 \times 10^5 \times 442554.834} \\ &= -1.825 \text{ mm} \end{aligned}$$

Net vertical deflection

$$\begin{aligned} \Delta_y &= \Delta_y^A + \Delta_y^B \\ &= \Delta_u^A \cos \theta - \Delta_v^B \sin \theta \\ &= 0.3835 \cos 22.263^\circ - (-1.825 \sin 22.263^\circ) \\ &= 1.046 \text{ mm } (\downarrow) \end{aligned}$$

Net horizontal deflection

$$\begin{aligned} \Delta_z &= \Delta_z^A + \Delta_z^B \\ &= \Delta_u^A \sin \theta + \Delta_v^B \cos \theta \\ &= 0.3835 \sin 22.263^\circ + (-1.825 \cos 22.263^\circ) \\ &= -1.544 \text{ mm} \\ &= 1.544 \text{ mm } (\leftarrow) \end{aligned}$$



Chatteropadhyay
02/02/21



iii) Calculation of bending stress

At support M_{zz} caused by $P_y = -20 \times 4000$
 $= -80000 \text{ N-mm}$

At point P_1 , $y = -60 \text{ mm}$, $z = -55 \text{ mm}$

$\cos \theta = \cos 22.263^\circ = 0.9255$

$\sin \theta = \sin 22.263^\circ = 0.3789$



\therefore Bending stress at P_1 ,

$$= \frac{M_{zz} \cdot \cos \theta}{I_{yy}} (y \cos \theta + z \sin \theta) - \frac{M_{zz} \cdot \sin \theta}{I_{zz}} (z \cos \theta - y \sin \theta)$$

$$= \frac{(-80000) \times 0.9255}{5148811.166} (-60 \times 0.9255 - 55 \times 0.3789) -$$

$$\frac{(-80000) \times 0.3789}{442854.834} (-55 \times 0.9255 - (-60) \times 0.3789)$$

$$= -0.829 \text{ N/mm}^2$$

At point P_2 , $y = 50 \text{ mm}$, $z = 55 \text{ mm}$

Bending stress at P_2 ,

$$= \frac{M_{zz} \cos \theta}{I_{yy}} (y \cos \theta + z \sin \theta) - \frac{M_{zz} \sin \theta}{I_{zz}} (z \cos \theta - y \sin \theta)$$

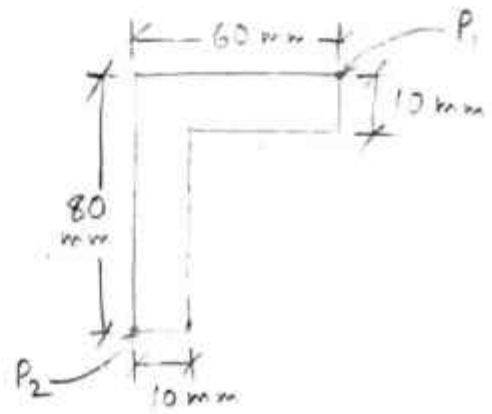
$$= \frac{(-80000) \times 0.9255}{5148811.166} (50 \times 0.9255 + 55 \times 0.3789) - \frac{(-80000) \times 0.3789}{442854.834} \times$$

$$(55 \times 0.9255 - 50 \times 0.3789)$$

$$= 1.222 \text{ N/mm}^2$$

[Handwritten signature]

16



- 1) Locate principle axis and find principle moment of inertia.
- 2) Calculate the deflection at the free end, considering $E = 2 \times 10^5 \text{ N/mm}^2$.
- 3) Calculate bending stress at point P_1 & P_2 near support.

R



Chattopadhyay
02/11/21

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation(CA-3), March 2023

Department: Civil Engineering

Year: 2nd

Sub: Civil Engineering – Societal and Global Impact

Time: - 1 Hr

Semester: 4th

Code: CE(HS)401

Full Marks- 25

GROUP – A

(Very Short answer type Questions)

1. Choose the correct alternatives for *any five* of the following: (5x1 = 5)
- i) What is GIS?
 - ii) GIS represents a location in _____ dimensional coordinates.
 - iii) What do you mean by Greenhouse Gas?
 - iv) Who releases the Human Development Report?
 - v) Ecological Footprint measured by _____
 - vi) What is its rank of India in the Human Development Index 2018?

GROUP – B

(Short Answer Type Questions)

Answer *any four* of the following

4x5=20

- 2. Briefly describe some significant breakthroughs and innovations in Civil Engineering.
- 3. What are the impact and possible causes of Global warming?
- 4. Write a short note on Human Development Index.
- 5. Briefly describe the application of the Geographical Information System.
- 6. Write a short note on Ecological Footprint.
- 7. Name the natural resources to which future requirements are evaluated.

Arpita Das. for A. Chattopadhyay

RAJDIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation(CA-3), March 2023

Department: Civil Engineering

Year: 2nd

Sub: Surveying & Geomatics

Time: - 1 Hr

Semester: 4th

Code: CE(PC)403

Full Marks- 25

GROUP - A

(Very Short answer type Questions)

1. Choose the correct alternatives for *any five* of the following: (5x1 = 5)
- i) The reduced bearing of a line is N 87° W. Its whole circle bearing is _____
 - ii) What do you mean by the combined correction in leveling?
 - iii) Hydrographic surveys deal with the mapping of _____
 - iv) What is the radius of a 1° curve?

GROUP - B

(Short Answer Type Questions)

Answer *any four* of the following

4x5=20

- 2. The magnetic bearing of a line CD is S 30°15' W. Find its True Bearing, If the declination is 10°15' E.
- 3. Write a short note on Two point problem.
- 4. A man at a position 10 m above sea level observes the peak of a hill. The distance between the man and the hill is 80 km. Find the height of the hill.
- 5. The distance between two points, measured with a 20 m chain, was recorded as 327 m. It was afterward found that the chain was 3 cm too long. What was the true difference between the points.

Apita Das for A.Chatterjee
RAJDIP PAUL
H.O.D.

Civil Engineering
Hooghly Engineering & Technology College

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation (CA-3), September 2022

Department: Civil Engineering

Year: 3rd

Sub: Engineering Hydrology

Time: - 1 hr

Semester: 5th

Code: CE(PC)502

Full Marks- 25

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for **any five** of the following: (5×1 = 5)
- i) The tracer of determine stream flow must be
 - a) absorbed
 - b) evaporable
 - c) expensive
 - d) nontoxic.
 - ii) Area velocity method must be adopted for a strip of width of the stream between
 - a) 1/10 to 1/15
 - b) 1/15 to 1/20
 - c) 1/20 to 1/25
 - d) 1/25 to 1/30
 - iii) The normal ratio method for estimating missing rainfall data of a raingauge shall be used when the average annual precipitation of any of the adjacent raingauge differs by more than.,
 - a) 5%
 - b) 7.5%
 - c) 10%
 - d) 15%
 - iv) Isohyets are,
 - a) contours of equal elevation on a drainage basin
 - b) rainfall intensity versus time
 - c) influence area of a raingauge station
 - d) contours of equal rainfall
 - v) The optimum number of raingauges 'N' for a catchment area is given by,
 - a) $N=(C_r/E)^2$
 - b) $N=(C_r/E)^2$
 - c) $N=(C_r/E)^2$
 - d) $N=(C_r/E)$
 - vi) Evaporation losses from surface of a reservoir can be reduced by sprinkling:
 - a) DDT
 - b) Cetyl alcohol
 - c) Potassium permanganate
 - d) Ethyl alcohol
 - vii) The ISI standard pan evaporimeter is the
 - a) same as the US class A pan
 - b) has an average pan coefficient value of 0.60
 - c) has less evaporation than a US class A pan
 - d) has more evaporation than a US class A pan

GROUP - B

(Short Answer Type Questions)

Answer **any four** of the following

(4×5 = 20)

- 2. The normal annual rainfall at stations A, B, C, and D in a basin are 80.97, 67.59, 76.28 and 92.01 cm respectively. In the year 1795, the station D was inoperative and the stations A, B and C recorded annual precipitations of 91.11, 72.23 and 79.89 cm respectively. Estimate the rainfall at station D in that year.
- 3. Explain the Ultrasonic method to determine stream-flow measurement.
- 4. Describe the Moving-Boat method to determine stream-flow measurement.
- 5. A 30 g/L solution of a fluorescent tracer was discharged into a stream at a constant rate of 10 cm³/s. The background concentration of the dye in the stream water was found to be zero. At a downstream section sufficiently far away, the dye was found to reach an equilibrium concentration of 6 ppb. Estimate the stream discharge.
- 6. The isohyets due to a storm in a catchment are drawn and presented in the following figure.

Aspita Das

for A Chattopadhyay

RAJDIR PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation (CA-3), September 2022

Department: Civil Engineering

Year: 3rd

Sub: Structural Analysis-I

Time: - 1 hr

Semester: 5th

Code: CE(PC)503

Full Marks- 25

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for **any five** of the following: (5×1 = 5)
- i) A single-bayed doubled-storied rigid-jointed portal frame is statically redundant to
a) first degree b) third degree c) sixth degree d) twelfth degree
 - ii) Arches are classified as
(a) continuum structures (b) Space structures
(c) curved structures in plan (d) curved structures in elevation
 - iii) The ordinates of influence line diagram for bending moment always have the dimension of
a) force b) length c) force x length d) force / length
 - iv) Betti's law in structural analysis can be applied to
a) all elastic structure b) plastic structures
c) symmetrical structures only d) any structure
 - v) The Castigliano's second theorem can be used to compute deflections
a) in statically determinate structures only b) for any type of structure
c) at point under the load only d) for beams and frames only
 - vi) The deflection at any point of a beam can be obtained by applying a unit load in
a) the vertical direction b) the direction in which the deflection is required
c) the horizontal direction d) opposite to the direction in which the deflection is required

GROUP - B

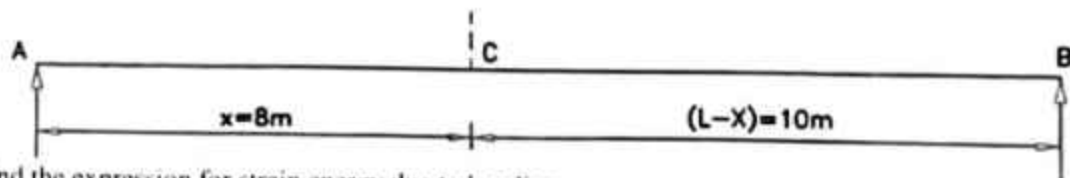
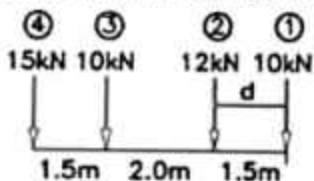
(Short Answer Type Questions)

Answer any four of the following

(4×5 = 20)

2. A three-hinged parabolic arch of span 30m and rise 5m carries a u.d.l of 40 kN/m on the whole span with a point load of 200kN at a distance of 5m from the right end. Find the bending moment, Normal thrust and radial shear at a section 5m from the left end.

3. A train of loads, shown in the figure below, crosses a simply supported girder of span 18m from left to right. Calculate the maximum S.F. at section 8m away from support A.



4. Find the expression for strain energy due to bending.

Aspita Das

for *d. Chattopadhyay*
RAJDIIP PAUL
H.O.D.

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation(CA-3), March 2023

Department: Civil Engineering

Year: 3rd

Sub: Design of Steel Structure

Time: - 1 Hr

Semester: 6th

Code: CE(PC)604

Full Marks- 25

GROUP - A

(Multiple Choice Type Questions)

1. Answer *any five* of the following: (5x1 = 5)
- i) According to IS:800-2007, the y-y axis of a cross-section of an I section lies _____
 - ii) The maximum size of a fillet weld is obtained by subtracting 1.5 mm from the _____
 - iii) As per 800:2007, The clear spacing between an intermittent fillet weld should in no case be more than _____
 - iv) What is effective net area of a tension member?
 - v) Lateral torsional buckling may occur in case of laterally _____ beam.
 - vi) When a lateral support provided to the compression flange of a beam is said to be fully effective?

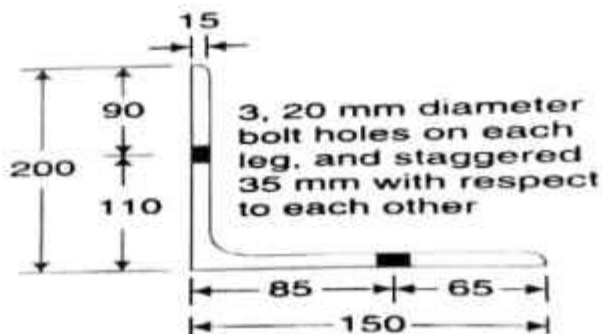
GROUP - B

(Short Answer Type Questions)

Answer *any four* of the following

4x5=20

- 2. An ISA 80 x 50 x 8 mm tie member is welded to a 12 mm thick gusset plate at the site on two sides. Design welds to transmit load equal to the design strength of the member.
- 3. Explain the different failure modes of bolted joints with a neat sketch.
- 4. Discuss with a neat sketch the state of shear in a single-cover single-bolted butt joint and double-cover double-bolted butt joint.
- 5. Calculate the effective net area of the given angle section



- 6. Discuss in brief the shear lag mechanism in tension members.

Arpita Das for Dr. Chattopadhyay
RAJDIR PAUL
H.O.D.

Year: 4th
Hydraulic Structure
Time: - 1 Hr

Semester: 7th Sub:
Code: CE(PE)701C
Full Marks- 25

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for *any five* of the following: (5x1 = 5)

(i) The crest level of the canal head regulator is kept-

- (a) at the same level with that of the under-sluice.
(b) 1.2 to 1.5 mt higher than the crest of the under-sluice
(c) 1.2 to 1.5 mt below the crest of the under-sluice
(d) none of the above

(ii) Khosla's safe exit gradient for design of weirs will be lowest for the soil type:

- (a) fine sand (b) coarse sand (c) shingle and gravels (d) none of the above

(iii) The minimum thickness (t) of the downstream floor, as required in the design of weirs, can be expressed by the equation:

- (a) $\frac{h}{G+1}$ (b) $\frac{h}{G-1}$ (c) $\frac{h-t}{G-1}$ (d) $1.33 \left(\frac{h}{G-1} \right)$

(iv) A weir consists of 32 m long horizontal floor with two sheet piles of 6 m and 8 m depth at the upstream and downstream ends of the floor respectively. Under an impounded depth of 4m above the floor and with no tail water, the uplift pressure head at the mid-point of the floor by Bligh's creep theory is

- (a) 2.50 m (b) 2.13 m (c) 2.00m (d) 1.87 m

(v) When sand and gravel foundation strata is available at a proposed dam site of moderate height, the dam may be of the type

- (a) masonry gravity dam (b) concrete gravity dam
(c) earthen dam or rockfill dam (d) arch dam

(vi) The vertical downward earthquake acceleration, $\alpha_v = 0.1g$, acting on a gravity dam, will

- (a) increase the resisting weight of the dam by 10%
(b) decrease the resisting weight of the dam by 10%
(c) increase the uplift of the dam by 10%
(d) decrease the uplift of the dam by 10%

(vii) The horizontal component of the earthquake wave, producing instability in a dam with full reservoir is the one, which acts:

- (a) towards the reservoir (b) away from the reservoir.
(c) both (a) and (b). (d) none of the above

Arpita Das.

for A Chattopadhyay

RAJDI PAUL

H.O.D.

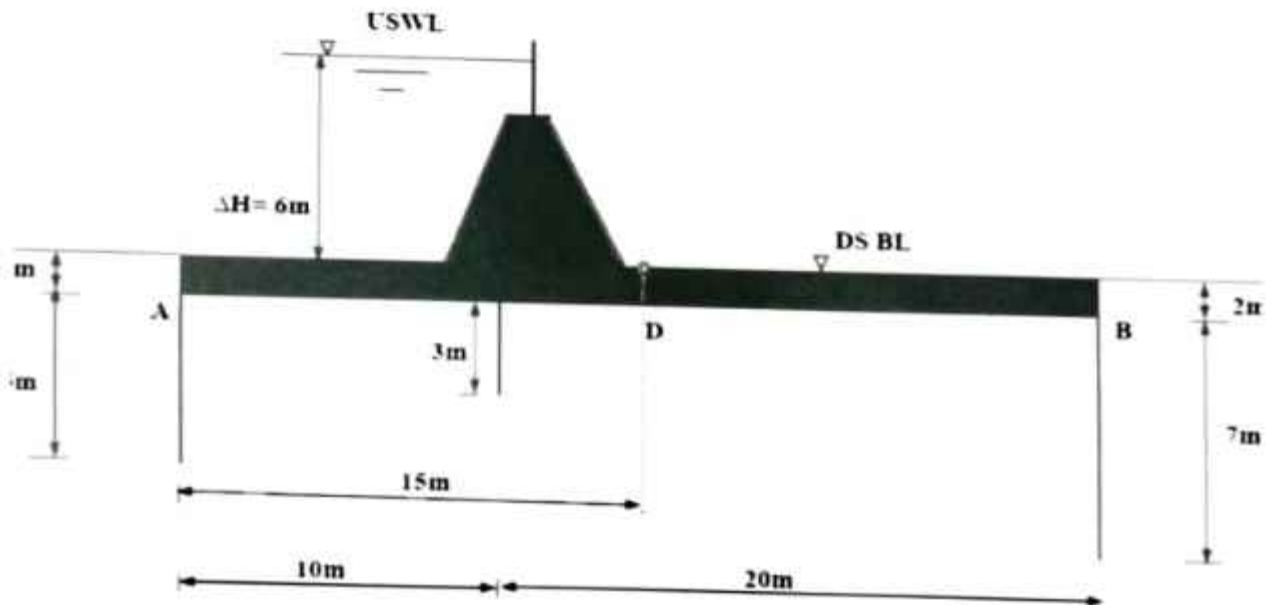
Civil Engineering

Hooghly Engineering & Technology College

GROUP – B
(Short Answer Type Questions)
Answer any four of the following

4x5=20

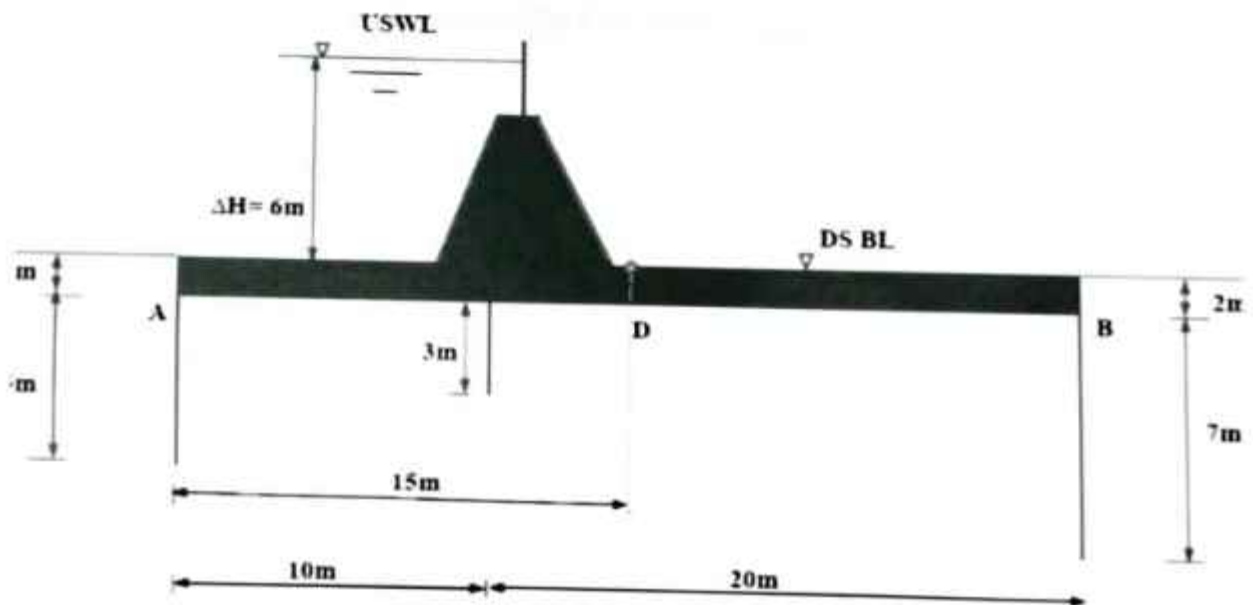
2. Give a brief classification of dams based on function and hydraulic design.
3. State the factors governing the selection of type of dams.
4. State and briefly explain Zanger's formula of hydrodynamic pressure.
5. Briefly describe the component of Diversion headwork.
- 6) write a short note on Critical exit Gradient.
- 7) Find the hydraulic gradient and the head at point D of the following structure for Static condition. The water percolates at A and exits at B.
 - a) Using Blight' Creep theory
 - b) Using Lane Weighted Creep theory



GROUP – B
(Short Answer Type Questions)
Answer any four of the following

4x5=20

2. Give a brief classification of dams based on function and hydraulic design.
3. State the factors governing the selection of type of dams.
4. State and briefly explain Zanger's formula of hydrodynamic pressure.
5. Briefly describe the component of Diversion headwork.
- 6) write a short note on Critical exit Gradient.
- 7) Find the hydraulic gradient and the head at point D of the following structure for Static condition. The water percolates at A and exits at B.
 - a) Using Blight' Creep theory
 - b) Using Lane Weighted Creep theory



Arpita Das.

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation (CA-3), September 2022

Department: Civil Engineering

Year: 4th

Sub: Prestressed Concrete

Time: - 1 hr

Semester: 7th

Code: CE(PE)702A

Full Marks- 25

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for *any five* of the following: (5×1 = 5)
- i) The minimum grade of concrete for prestressed members should be in the range of
a) M-20 to M-30 b) M-30 to M-40 c) M-40 to M-50 d) M-50 to M-60
- ii) The soffit of the beam after the transfer of prestress to concrete will be under _____
a) Bondage b) Breakage c) Compression d) Tension
- iii) Uniformly distributed load on the prestressed concrete beam can be effectively counterbalanced by,
a) concentric straight cable b) eccentric cable c) parabolic cable d) none of these
- iv) In composite construction, prestressed elements are used advantageously in the,
a) compression zone b) shear zone c) tension zone d) torsion zone
- v) The composite action between the precast prestressed and cast in situ elements is achieved by, rendering the surface of the prestressed unit,
a) smooth b) roughened c) with dowels d) both b and c
- vi) In continuous prestressed concrete beams, prestressing results in secondary moments due to,
a) tendons' eccentricity b) end supports c) intermediate supports d) external loads

GROUP - B

(Short Answer Type Questions)

Answer *any four* of the following

(4×5 = 20)

2. Explain the terms (a) Primary moment (b) Secondary moment (c) Resultant moment (d) Redundant reaction concerning continuous prestressed concrete beams.
3. A rectangular concrete beam 250mm wide by 400mm deep is prestressed by a force of 600kN at a constant eccentricity of 60mm. The beam supports a concentrated load of 70kN at centre of a span of 4m. Determine the location of the pressure line at the centre, quarter span and support sections of the beam.
4. A precast pre-tensioned beam of a rectangular section has a breadth of 150mm and a depth of 250mm. The beam, with an effective span of 6m, is prestressed by tendons with their centroid coinciding with the bottom kern. The initial force in the tendons is 200KN. The loss of prestressing may be assumed to be 15%. The beam is incorporated into a composite T-beam by casting a top flange of a breadth of 450mm and thickness of 45mm. Calculate stresses developed in the precast pre-tensioned beam due to prestressing, self-weight of the beam, and self-weight of the in-situ slab considering the beam is unpropped during casting of the slab. Assume the same modulus of elasticity for concrete in precast beam and in-situ cast slab.
5. What are the advantages of using continuous prestressed concrete members?
6. A prestressed concrete beam of section 120mm wide by 300mm deep is used over an effective span of 6m to support a uniformly distributed load of 4kN/m, which includes the self-weight of the beam. The beam is prestressed by a straight cable carrying a force of 180kN and located at an eccentricity of 50mm. Determine the location of thrust-line in the beam and plot its position central span section.

Arpita Das for A. Chattopadhyay
RAJDIIP PAUL
H.O.D.

Year: 4th

Sub: Deep Foundations

Time: - 1 hr

Semester: 8th

Code: CE(OE)801C

Full Marks- 25

GROUP - A

(Very Short Answer Type Questions)

1. Choose the correct alternatives for **any five** of the following: (5×1 = 5)
- i) Which pile is used to compact loose granular soil?
 - ii) The bearing capacity of a single pile in clay is mainly due to _____.
 - iii) The piles that are used for protecting structures from ships and floating object is _____.
 - iv) Dynamic formulae are best suited for which type of soil?
 - v) For alluvial soil, the normal scour depth can be calculated by _____ formula.
 - vi) The lateral stability of the Well Foundation is done based on which method?

GROUP - B

(Short Answer Type Questions)

Answer **any four** of the following

(4×5 = 20)

2. (a) A timber pile has been driven with a drop hammer weighing 25kN and having a free fall of 1m. The total penetration of pile in the last five blows is 30mm. Find the load-carrying capacity of the pile using the Engineering News formula.
- (b) Skin frictional capacities of a 40cm diameter driven concrete pile for three potions are 17kN, 63kN, and 503kN, respectively, and point load capacity is 11000kN/m² total pile load capacity will be? (2.5-2.5)
3. A single-acting steam hammer drives a 12m long 300mm² square pre-cast concrete pile into a sand stratum. The weight of the C1 hammer ram is 14kN, and the stroke is 750mm. The pile showed a driving resistance of 5 blows/25mm penetration. Estimate the ultimate bearing capacity of the pile based on Hiley's formula. Take $C = 0.00508m$ and hammer efficiency = 80%. The Restitution coefficient for the C1 hammer and pile is 0.45.
4. A pile of 0.50m in diameter and length 10m is embedded in a clay deposit. The undrained strength parameters of the clay are cohesion = 60kN/m² and the angle in internal friction = 0. What is the pile's skin friction capacity (kN) for an adhesion factor of 0.6?
5. Briefly describe the various components of Well Foundation.
6. Name the forces to which the Well Foundations are subjected.

Apurita Das

for J. Chattopadhyay

RAJDIP PAUL

H.O.D.

Civil Engineering

Hooghly Engineering & Technology College

ROLL NO	NAME	25.11.22	30.11.22	02.12.22	14.12.22	15.12.22	16.12.22	19.12.22	23.12.22	03.01.23	16.2.23	21.01.23	28.02.23	25.02.23	16.03.23	08.04.23	9/4/23	6/4/23	11/04/23
1	ARJIT NANDY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2	Apri kumar Sinha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
3	Sagnik Mandal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4	Debdutta Mannu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5	SOHITA CHATTERJEE	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6	SRISHITI GHOSH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7	SOUMYADIP MAJI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8	Sumon Banerjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
9	Shivam Kumar Rao	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
10	SOUMALYA KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11	ANIK MUKHERJEE	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12	SHRUTILEKHA JANA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13	SNIGDHA GHOSHAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14	ANIKESH BHUKTA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
15	Subhodip Jana	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16	Rintu Bera	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
17	Ranveer Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18	RAHUL KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
19	Asoyit halder	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
20	ATANU DIT	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21	SOURENDRAKRISHN PAKHIRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
22	SUDIP MEGDA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
23	ORABOUBI NAHAMAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
24	NIYAM GHOSH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
25	SUMIT PAUL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
26	NITISH KUMAR MAHTO	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
27	ADITI MOHBA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
28	SARAB MAJIK	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
29	WILSON NANOI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
30	SABARIT MOY CHOWDHURY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
31	AARABAYA GANGOPADHYAY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
32	ABHIRUP PAI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
33	SANJAY HIRANANDA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
34	SOMNATH DEB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
35	ABHIRAM KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P



Hooghly Engineering & Technology College

Civil Engineering

Sem: 4th , Year: 2nd , Session : 2021-25 , Subject: Surveying & Geomatics (PC) 403

36	SRUJITA CHATTERJEE	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
37	PLIJA GHOSH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
38	RIFA MONDAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
39	SINCHAN DATTA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
40	SAMRITA DAS	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
41	RISHANK DEBNOTI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
42	SOURAV MALAKAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
43	JEET CHATTERJEE	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
44	SUBHAM DUTTA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
45	PLIJA JANA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
46	SUSOVAN DEY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
47	ABHIRADIP MUKHERJEE	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
48	ANKITA SEAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
49	SOURYADEEP SAKHURHAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
50	DEBDEYUTI ROY ADHICARY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
51	SURAJIT SAHA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
52	ARUNABHA ROYCHOWDHURY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
53	ATANU KARMARAK	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
54	DEBAHOTI PAUL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
55	ARJUN ROY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
56	ASHISH DEBNOTI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
57	NAHUS DAS	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
58	ANKAN CHAKRABORTY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
59	SOURYAJIT SAHA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
60	KRISHNA CHANDER GHOSH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
61	ARJUN ROY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
62	SOURYADEEP BANDYO	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
63	SUMAN MONDAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
64	TONA DAS	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P



HOOGLIYA ENGINEERING AND TECHNOLOGY COLLEGE

DEPARTMENT OF CIVIL ENGINEERING: ROUTINE OF ODD SEM'22 EFFECTIVE FROM: 2ND AUGUST, 2022

Day	SEM	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday	1st	CADD Lab (APPD, IDE, G+D, INT, 2011)						
	5th	Project (All available Faculty)						
Tuesday	7th	Pre-Concrete (A 306) APPD		Introduction to CI (A 107) APPD				
	1st					CADD Lab (APPD, SMD, G+D, INT, 2011)		
Wednesday	5th	Project (All available Faculty)						
	7th	Project (All available Faculty)						
Thursday	1st	Structural analysis (A 105) APPD						
	5th	Structural analysis (A 105) APPD				Hsd. Structure (I) (A 306) APPD/SBD		Seminar (A 306) All Faculty
Friday	1st	Project (All available Faculty)						
	7th	Project (All available Faculty)						
Saturday	5th	Pre-Concrete (A 306) RPP APPD		Hsd. Structure (A 306) APPD				
	7th							

Aspirator Doo.



P

CIVIL ENGINEERING DEPARTMENT

ROUTINE FOR THE EVEN SEMESTER 2023 (EFFECTIVE FROM 03-01-2023)

SEM	09:45-10:35	10:35-11:25	11:25-12:15	12:15-01:05	01:05-01:55	01:55-02:45	02:45-03:35	03:35-04:25		
TUE	4th	CESGI	PROJECT PART II (ALL FACULTY MEMBERS)	Steel Design APD	BREAK					
	6th	APD								
WED	6th	Deep Foundation APD	PROJECT PART II		BREAK	Surveying Lab (Gr -B): APD,SKB				
									4th	Surveying APD
									6th	
THU	8th	PROJECT PART II	PROJECT PART II		BREAK	PROJECT PART II				
									4th	
									6th	
FRI	8th	PROJECT PART II	PROJECT PART II		BREAK	PROJECT PART II				
									5th	
									6th	
SAT	4th	CESGI APD	PROJECT PART II (ALL FACULTY MEMBERS)	Steel Design APD	BREAK	Surveying Lab (Gr -A): APD,SKB				
									5th	
									6th	

Apita Das



(Signature)

formation

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Department of Civil Engineering (Routine for the ODD semester, 2021)

Day	Sem	10:00-11:00	11:15-12:15	12:30-1:30	3:00-4:00	4:30-5:30	5:00-6:00
Monday	BRD		Introduction to Civil Engineering				
			APD				
	STH						
Tuesday	BRD						
	STH						
	PTH		Prestressed Concrete				
			APD				
Wednesday	BRD						
	STH						
	PTH	Hydraulic Structures					
		APD					
Thursday	BRD						
	STH			Structural Analysis - I			
				APD			
PTH							
Friday	BRD				Computer aided Civil Engineering Drawing		
					APD, SMD		
	STH						
Saturday	BRD						
	STH						
	PTH		Class for Competitor				
			Bit available faculty of CE				

Apita Das



hal warning?
 ex.
 ical Inform:

CIVIL ENGINEERING DEPARTMENT							
ROUTINE FOR THE EVEN SEMESTER 2022 (EFFECTIVE FROM 01.02.2022)							
	SEM	10-15-11-15	11-30-12-30	12-45-1-45	2-30-3-30	3-45-4-45	5-00-6-00
MON	4th						
	6th						
	8th						
TUE	4th						Survey Lab (3:00-5:00)
							APD, SKB
	6th	PROJECT					
WED	8th						
	4th						
	6th						
THU	8th						
	4th					Steel Design	
	6th					APD	
FRI	8th	PROJECT					
	4th				Survey		
	6th				APD		
SAT	8th						
	4th			Survey			CESG
	6th			APD			APD

Apita Das



Global warming
Index
Graphical refer

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Department of Civil Engineering (Routine for the even semester, 2021)

Day	Sem	10:30 - 11:30	12:00 - 1:00	1:00 - 4:00	4:30 - 5:30
Monday	4th				
	6th				
	8th				
Tuesday	4th		Comp. Tech APD		
	6th				
	8th				
Wednesday	4th		Social & Global APD		Survey Lab APD
	6th				
	8th				
Thursday	4th				
	6th				
	8th				
Friday	4th	Social & Global APD			
	6th				
	8th				

Aspita Das



HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE
DEPARTMENT OF CIVIL ENGINEERING ROUTINE EFFECTIVE FROM: 17th AUGUST, 2020

Day	SEM	10:30-11:30	12:00-1:00	3:00-4:00	4:30-5:30
Monday	3rd				
	5th				
	7th				
Tuesday	3rd				
	5th			Computer Application in Civil Engineering APD	
	7th				
Wednesday	3rd		Intro to CE APD		
	5th				
	7th				
Thursday	3rd				
	5th				
	7th	Hyd. Structure APD			
Friday	3rd				
	5th				
	7th				
Saturday	3rd				
	5th		Str. Analysis APD		
	7th				

Aspita Das



studies and innovations in Civil E
of Global warming?
Index
000

Civil Engineering Department

Routine for the Odd Semester 2019 (Published on 03.07.2019)

		10-10:50	10:50-11:40	11:40-12:30	12:30-1:20		2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30	
TUESDAY	3rd					B		CAD Lab-Gr. B (APD, TD)			
	5th										
	7th		Hydraulic str APD								
WEDNESDAY	3rd	Intro. CE APD				R		CAD Lab- Gr. A (APD, SMD)			
	5th										
	7th										
THURSDAY	3rd	Intro. CE APD			E						
	5th					Conc Tech APD					
	7th						Project				
FRIDAY	3rd					A					
	5th	Conc Tech APD									
	7th						Hydraulic str. APD	Project (A-B)			
SATURDAY	3rd					K					
	5th										
	7th										

Aspita Das



Civil Engineering Department

Routine for the Odd Semester 2018

		10-10:50	10:50-11:40	11:40-12:30	12:30-1:20		2:10-3:00	3:00-3:50	3:50-4:40	4:40-5:30	
TUESDAY	3rd					B		HDD Lab-Gr. II + APD, SKM)			
	5th										
	7th	Hydraulic str. APD									
WEDNESDAY	3rd	Surveying APD				R		HDD Lab-Gr. A + APD, SKM)			
	5th										
	7th										
THURSDAY	3rd	Surveying APD				E	Surveying(T)				
	5th										
	7th				Hydraulic str. APD			Project			
FRIDAY	3rd					A					
	5th	Cone Tech APD									
	7th							Project			
SATURDAY	3rd				Surveying APD	K					
	5th	Cone Tech APD									
	7th							Project			

Aspita Dan.



Hooghly Engineering & Technology College

Assessment Rubrics of Continuous Evaluation (CA1)

Paper Name: Structural Analysis-II

Paper Code: CE(PE)602B

Component	Marks	Proficient	Acceptable	Needs Improvements
Topic Covered	5	Topic is identified and fully covered.	Topic is mostly identified but not covered fully.	Topic is neither identified nor covered.
Written Communication	5	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow. Diagrams or analyses are clear. Sentences are free from spelling and grammatical errors.	Report is mostly well organized and clearly written. The underlying logic is partially articulated. Diagrams or analyses are mostly clear. Sentences are mostly free from spelling and grammatical errors.	Report lacks an overall organization. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult to understand.
Presentation Visual Aids	5	Slides are error-free and logically present the main contents.	Slides are mostly error-free and almost logically present the main contents.	Slides contain errors and have lack of logic.
Oral Presentation	5	Speakers are audible and fluent on their topic, and do not rely on notes to present or respond.	Speakers are mostly audible and fluent on their topic, and require minimum referral notes.	Speakers are often inaudible or hesitant, often speaking incomplete sentences. Speakers rely heavily on notes.
Body Language	5	Speakers make eye contact with audience and demonstrate a high level of comfort and connection with the audience.	Speakers break eye contact with audience and demonstrate a slight discomfort with the audience.	Speakers make little or no eyecontact with audience, and demonstrate a high degree of discomfort interacting with

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Ploupiri, Hooghly.

Handwritten Signature
Course Academic Committee



Hooghly Engineering & Technology College

Assessment Rubrics of Continuous Assessment 2

Paper Name: Advanced Structural Analysis

Paper Code: CE(PE)704B

Component	Marks	Very Poor Up to 20%	Poor Up to 40%	Average Up to 60%	Good Up to 80%	Very good Up to 100%
Topic Covered	5	Topic is neither identified nor covered.	Topic is partially identified but not covered.	Topic is fully identified but not covered.	Topic is fully identified and partially covered.	Topic is identified and fully covered.
Report writing skill	5	Report lacks an overall organization and is not written clearly.	The report is partially organized but is not written clearly.	The report is partially organized and is partially written clearly.	The report is fully organized and is partially written clearly.	Report is well organized and clearly written.
Inquisitiveness	5	Student has less degree of curiosity and seeks no information.	Student has little degree of curiosity and seeks no information.	Student has little degree of curiosity and seeks some information.	Student has high degree of curiosity and seeks some information.	Student has high degree of curiosity and seeks many additional information.
References	5	Citations are incomplete or missing or inaccurate.	Cited less sources of information and images improperly to demonstrate the report.	Cited most sources of information and images improperly to demonstrate the report.	Cited all sources of information and images partially to demonstrate the report.	Cited all sources of information and images accurately to demonstrate the report.
Execution of assignment	5	Does not execute assignment independently.	Partially execute assignment independently.	Moderately execute assignment independently.	Mostly execute assignment independently.	Fully executes assignment independently.


 Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpat, Hooghly.


 Convener,
 Academic Committee.





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): July 2022 – December 2023			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of Academic Programme	October 14, 2022, Orientation Programme	July 4, 2022
2	Induction Programme for newly admitted students	October 15 to November 3, 2022	N.A.
3	Admission activities (for ensuing new students) to be completed by	November 30, 2022	N.A.
4	Registration activities (for ensuing newly admitted students for the session 2022-23) will be completed by	As per admission dates. Would be notified separately	N.A.
5	Enrolment of students (for 3 rd , 5 th & 7 th semester)	As per university directive	July 7, 2022 to July 15, 2022
6	Enrolment of students (for 1 st & 3 rd semester-Lateral)	Tentatively in the month of December, 2022	N.A.
7	Continuous Assessment 1(CA1) (In the form of Power Point Presentation) (for 3 rd , 5 th & 7 th semester)	As per university directive	August 1, 2022 to August 4, 2022
8	Continuous Assessment 2(CA2) (In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	As per university directive	September 1, 2022 to September 4, 2022
9	A Guest Lecture organised by Mechanical Dept.	3 rd week of September, 2022	
10	Drawing competition on the occasion of World AIDS Day by the NSS unit	1 st week of December, 2022	
11	A sensitization workshop on "Implementation of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013" by the Internal Complaints Committee(ICC)	1 st week of December, 2022	
12	Continuous Assessment 3(CA3)(In the form of Class Test)	As per university directive	October 17, 2022 to October 20, 2022
13	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	As per university directive	November 9, 2022 to November 12, 2022
14	Pre-Examination activities (Form fill-up etc.)	November 16, 2022 to November 24, 2022	November 16, 2022 to November 24, 2022
15	Practical, Sessional and Viva-Voce examinations	November 25, 2022 to November 30, 2022	November 25, 2022 to November 30, 2022
16	Marks submission for Practical, Sessional and Viva-Voce exams	December 1, 2022 to December 5, 2022	December 1, 2022 to December 5, 2022
17	Theory Examinations	December 2, 2022 to December 24, 2022	December 2, 2022 to December 24, 2022
18	Inter Semester Break	December 25, 2022 to January 1, 2023	December 25, 2022 to January 1, 2023
19	Publication of Result	Results will be announced in the Univ. website	

During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.



Sd/L: L/H 02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.

Announcement regarding Special Trainings will be available in the College website/web portal in due course

Announcement regarding other activities of University/ College will be available in the University website/College website in due course

Sd/- H/ 02.07.22





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Odd Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun	M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
July 2022					1	2	3	October 2022	31					1	2
	4	5	6	7	8	9	10		3	4	5	6	7	8	9
	11	12	13	14	15	16	17		10	11	12	13	14	15	16
	18	19	20	21	22	23	24		17	18	19	20	21	22	23
	25	26	27	28	29	30	31		24	25	26	27	28	29	30
Teaching Days: 20								Teaching Days: 12							
August 2022	1	2	3	4	5	6	7	November 2022		1	2	3	4	5	6
	8	9	10	11	12	13	14		7	8	9	10	11	12	13
	15	16	17	18	19	20	21		14	15	16	17	18	19	20
	22	23	24	25	26	27	28		21	22	23	24	25	26	27
	29	30	31						28	29	30				
Teaching Days: 20								Teaching Days: 19							
September 2022				1	2	3	4	December 2022				1	2	3	4
	5	6	7	8	9	10	11		5	6	7	8	9	10	11
	12	13	14	15	16	17	18		12	13	14	15	16	17	18
	19	20	21	22	23	24	25		19	20	21	22	23	24	25
	26	27	28	29	30				26	27	28	29	30	31	
Teaching Days: 21								Teaching Days: 17							



S.L.L. L/L, 09.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE


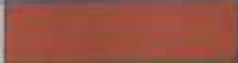

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	



S.D. 44 02.07.22

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hoochly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2023 – June 2023		
Events		For 2 nd , 4 th , 6 th & 8 th Semester
1	Commencement of Academic Programme	January 2, 2023
2	Enrolment of students	January 4, 2023 to January 12, 2023
3	Annual Cultural Fest, UTKARSHA 2023	2 nd week of January, 2023
4	Annual Sports Meet	January 14, 2023
5	Continuous Assessment 1(CA1)(In the form of Power Point Presentation)	February 1, 2023 to February 4, 2023
6	A seminar on "Embedded Systems and its Applications" by Electronics & Communications Engineering Dept.	4 th week of February, 2023
7	A Poster Design Competition on the occasion of International Women's Day by the Women's Cell	March 8, 2023
8	Continuous Assessment 2(CA2)(In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	March 1, 2023 to March 4, 2023
9	Technical Fest TechHetc	3 rd week of March, 2023
10	A 3-Day workshop on "Advanced Surveying Using DGPS and total Station" by Civil Engineering Dept.	Last week of March, 2023
11	Continuous Assessment 3(CA3)(In the form of Class Test)	April 1, 2023 to April 4, 2023
12	A National Conference on "Emerging Technologies in Computer Science and Electronics and Communications" jointly by Computer Science Engineering & Electronics and Communication Depts.	1 st week of April 2023
13	A Blood Donation Camp by NSS unit in collaboration with the Students Health Home, North-Hooghly Regional Centre	3 rd week of April, 2023
14	Examination of the Spoken Tutorial Program	Last week of April, 2023
15	A National Conference on "Recent Trends in Electrical and Mechanical Engineering" jointly by Electrical Engineering & Mechanical Engineering Depts.	Last week of April, 2023
16	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	May 1, 2023 to May 4, 2023
17	Pre-Examination activities (Form fill-up etc.)	May 8, 2023 to May 16, 2023
18	Practical, Sessional and Viva-Voce examinations	May 22, 2023 to May 27, 2023
19	Marks submission for Practical, Sessional and Viva-Voce exams	May 28, 2023 to May 30, 2023
20	Theory Examinations	June 1, 2023 to June 20, 2023
21	Inter Semester Break	Would be notified later
22	Publication of Result	Results will be announced in the Univ. website
23	Last date of reporting on Mentoring (Phase I)	March 31, 2023



Sd/- 44 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

24	Last date of reporting on Mentoring (Phase II)	May 31, 2023
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in July, 2023. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		



S.H.L. 44, 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Even Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
January 2023	30	31					1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
Teaching Days: 18							
February 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28					
Teaching Days: 17							
March 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
Teaching Days: 21							
M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
April 2023						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
Teaching Days: 15							
May 2023	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
Teaching Days: 20							
June 2023				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
Teaching Days: 21							



Sd/- 44, 02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE


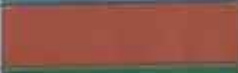

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	

Sd/- Lt. 02.07.22

Dr. Smitadhi Ganguly

Principal in-Charge



Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): August 2021 – January 2022			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of University Registration process online for newly admitted students	August 25, 2021	N.A.
2	Teachers' Day Celebration (Virtual mode)	September 5, 2021	
3	TECHete 2k21 (Annual Technical Festival) (Virtual mode)	2 nd week of September, 2021	
4	Admission activities (for ensuing new students) to be completed by	September 15, 2021	N.A.
5	Commencement of Academic Programme	September 15, 2021	August 31, 2021
6	Orientation program & Fresher's welcome	September 22, 2021	N.A.
7	53rd NSS Day Celebration through Webinar	September 24, 2021	
8	Enrolment of students (for odd semesters)	October 1, 2021 to October 7, 2021	September 1, 2021 to September 10, 2021
9	Gandhiji's Birth Day Celebration(Virtual mode)	October 2, 2021	
10	Last date of continuous evaluation (Phase I)	N.A.	October 4, 2021
11	Induction Programme for newly admitted students	October 23, 2021	N.A.
12	Registration activities (for newly admitted students for the session 2021-22) will be completed by	October 25, 2021	N.A.
13	National Level Entrepreneurship Awareness Programme	Last week of October, 2021	
14	Swachh Bharat Activity in collaboration with MAKAUT NSS Unit (NSS)	Last week of October, 2021	
15	Last date of continuous evaluation (Phase II)	November 4, 2021	
16	SWACHHTA PAKHWADA – Azadi Ka Amrit Mahotsav celebration	December 1, 2021 to December 13, 2021	
17	Last date of continuous evaluation (Phase III)	December 4, 2021	
18	Last date of continuous evaluation (Phase IV)	January 5, 2022	
19	Pre-Examination activities (Form fill-up etc.)	January 6, 2022 to January 14, 2022	
20	Practical Examinations & Viva-Voce	January 15, 2022 to January 25, 2022	
21	Theory Examinations	January 17, 2022 to January 29, 2022	
22	Online Essay Competition (NSS)	Last week of January, 2022	
23	National Girl Child Day Celebration (NSS)	January 24, 2022	
24	73rd Republic Day Celebration (NSS)	January 26, 2022	
25	Alumni Meet	January 30, 2022	
26	Inter Semester Break	To be announced later	
27	Publication of Result	Results will be announced in the University website	
28	Last date of reporting on Mentoring (Phase I)	November 30, 2021	
29	Last date of reporting on Mentoring (Phase II)	January 31, 2022	
During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in March, 2021. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Signature and date: 24.08.21



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. H. L. Ganguly 24.08.21

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpatl, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): February 2022 – June 2022		
Events		For Continuing Batches
1	Commencement of Academic Programme	February 1, 2022
2	Enrolment of students (for each semester)	February 1, 2022 to February 10, 2022
3	International Matribhasha Diwas Celebration (NSS)	February 21, 2022
4	Last date of continuous evaluation (Phase I)	March 4, 2022
5	International Women's day celebration	March 8, 2022
6	Webinar (Organized by NSS) in Google meet	2 nd week of March, 2022
7	Annual Cultural Festival, UTKARSHA 2022	Last week of March, 2022
8	Last date of continuous evaluation (Phase II)	April 4, 2022
9	Blood Donation Camp (NSS)	3 rd week of April, 2022
10	Last date of continuous evaluation (Phase III)	May 4, 2022
11	Last date of continuous evaluation (Phase IV)	June 4, 2022
12	Pre-Examination activities (Form fill-up etc.)	June 5, 2022 to June 18, 2022
13	Practical Examinations & Viva-Voce	June 20, 2022 to June 30, 2022
14	Theory Examinations	June 20, 2022 to June 30, 2022
15	The International Yoga Day Celebration (NSS)	June 21, 2022
16	Inter Semester Break (Summer)	Will be published later
17	Publication of Result (Final Semester)	Results will be announced in the University website in July, 2022
18	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2022
19	Last date of reporting on Mentoring (Phase I)	30th April, 2022
20	Last date of reporting on Mentoring (Phase II)	30th June, 2022
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. S. Ganguly 21.08.23
Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hoochly Engineering & Technology College
Vivekananda Road, Pipulpatl, Hooghly.



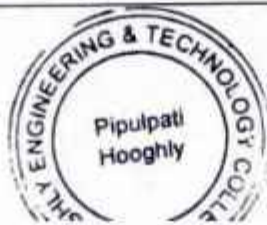
HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): November 2020 – March 2021			
Events		For Ensuing New Batch	For Continuing Batch
1	Admission activities (<i>for ensuing new students</i>) to be completed by	December, 2020	N.A.
2	Commencement of University Registration process online for newly admitted students	2 nd week of January, 2021	N.A.
3	Commencement of Academic Programme	3 rd week of January, 2021	1 st week of November, 2020
4	Induction Programme for newly admitted students	2 nd week of January, 2021 (Virtual Mode)	N.A.
5	Registration activities (<i>for ensuing newly admitted students for the session 2020-21</i>) will be completed by	3 rd week of January, 2021	N.A.
6	Republic Day Celebration	January 26, 2021 (Virtual Mode)	
7	Enrolment of students	Last week of January, 2021	Last week of November, 2020 (Except Lateral entries)
8	Alumni Meet	January 31, 2021 (Virtual Mode)	
9	Last date of Continuous Assessment (CA) I	Last week of January, 2021	
10	Last date of Continuous Assessment (CA) II	1 st week of February, 2021	
11	Practical Examinations & Viva-Voce (PCA I)	Last week of February, 2021	
12	Last date of Continuous Assessment (CA) III	Last week of February, 2021	
13	Last date of Continuous Assessment (CA) IV	2 nd week of March, 2021	
14	Practical Examinations & Viva-Voce (PCA II)	3 rd week of March, 2021	
15	Theory Examinations	Last week of March, 2021 (Online Mode)	
16	Inter Semester Break	Notice will be published later	
17	Publication of Result	Results will be announced in the Univ. website	
18	Last date of reporting on Mentoring	2 nd week of March, 2021	
During Inter-Semester-Break, Practical Training (<i>where applicable</i>) may be conducted.			
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Avijit Maity
03/11/2020



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020

Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103
Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): April 2021 – July 2021		
Events		For Continuing Batches
1	Commencement of Academic Programme	1 st week of April, 2021
2	Enrolment of students (for each semester)	April 20, 2021 to April 24, 2021
3	Last date of Continuous Assessment (CA) I	April 28, 2021 to May 3, 2021
4	Swachh Bharat Activity (NSS)	2 nd week of May, 2021 (Virtual Mode)
5	Last date of Continuous Assessment (CA) II	May 27, 2021 to May 31, 2021
6	Practical Examinations & Viva-Voce (PCA I)	May 27, 2021 to May 31, 2021
7	Last date of Continuous Assessment (CA) III	June 25, 2021 to June 30, 2021
8	Last date of Continuous Assessment (CA) IV	July 21, 2021 to July 24, 2021
9	Practical Examinations & Viva-Voce (PCA II)	July 21, 2021 to July 24, 2021
10	Theory Examinations	July, 2021
11	Semester Break	Notice will be published later
12	Publication of Result (Final Semester)	Results will be announced in the University website
13	Publication of Result (Other than Final Semester)	Results will be announced in the University website
14	Last date of reporting on Mentoring	Last week of June, 2021
During Inter-Semester-Break, Practical Training (<i>where applicable</i>) may be conducted.		
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020

Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2019 – December 2019			
Events		For Ensuing New Batch	For Continuing Batches
1	Commencement of University Registration process online for newly admitted students	July 22, 2019	N.A.
2	Admission activities (for ensuing new students) to be completed by	July 31, 2019	N.A.
3	Commencement of Academic Programme	August 1, 2019, Orientation Programme	July 15, 2019
4	Induction Programme for newly admitted students	August 1 to 21, 2019	N.A.
5	Registration activities (for newly admitted students for the session 2019-20) will be completed by	August 25, 2019	N.A.
6	Enrolment of students (for every semester)	August 14, 2019 to August 30, 2019	
7	Independence Day Celebration	August 15, 2019	
8	Last date of continuous evaluation (Phase I)	August 31, 2019	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2019	
10	Blood Donation Camp (NSS)	3 rd week of September, 2019	
11	Last date of continuous evaluation (Phase II)	September 30, 2019	
12	Last date of reporting on Mentoring (Phase I)	September 30, 2019	
13	Celebration of Gandhi Birthday (Workshop on Solar Lantern)	October 2, 2019	
14	One day Workshop/Seminar (Organized by CSE Dept)	4 th week of October, 2019	
15	Last date of continuous evaluation (Phase III)	October 31, 2019	
16	Entrepreneurship Awareness Programme	1 st week of November, 2019	
17	Last date of continuous evaluation (Phase IV)	November 30, 2019	
18	Practical Examinations & Viva-Voce	November 22 to 30, 2019	
19	Programme on AIDS Awareness (NSS)	December 1, 2019	
20	Theory Examinations	December 4 to 21, 2019	
21	Inter-Semester Break	December 22, 2019 to January 12, 2020	
22	Publication of Result	Results will be announced in the Univ. website in February 2020	
23	Last date of reporting on Mentoring (Phase II)	December 30, 2019	
During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya
Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Even Semester (2 nd , 4 th , 6 th & 8 th Semesters): January 2020 – June 2020		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 13, 2020
2	Annual Sports Meet	3 rd week of January, 2020
3	One day Workshop/Seminar (Organized by ECE Dept)	3 rd week of January, 2020
4	Enrolment of students (for every semester)	January 20, 2020 to January 31, 2020
5	Republic Day Celebration/ Alumni Meet	26 January, 2020 (Last Sunday of January)
6	Last date of continuous evaluation (Phase I)	January 31, 2020
7	Annual Cultural Festival	1 st week of February, 2020
8	Cricket Tournament	2 nd week of February, 2020
9	Badminton Tournament (For Girls)	3 rd week of February, 2020
10	Last date of continuous evaluation (Phase II)	February 28, 2020
11	TECHetc 2k20 (Annual Technical festival)	2 nd week of March, 2020
12	Swaccha Bharat Activity (NSS)	3 rd week of March, 2020
13	Football Tournament	3 rd week of March, 2020
14	Last date of continuous evaluation (Phase III)	March 31, 2020
15	Last date of reporting on Mentoring (Phase I)	March 31, 2020
16	One day Workshop/Seminar (Organized by EE Dept)	2 nd week of April, 2020
17	Last date of continuous evaluation (Phase IV)	April 30, 2020
18	Workshop/Seminar (In Collaboration With HETCAA)	1 st week of May, 2020
19	Practical Examinations & Viva-Voce	May 11 to May 16, 2020
20	Theory Examinations	May 22 to June 9, 2020
21	Inter-Semester Break (Summer)	June 10 to July 14, 2020
22	Publication of Result (Final Semester)	Results will be announced in the University website in July 2020
23	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2020
24	Last date of reporting on Mentoring (Phase II)	June 30, 2020
During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya

Principal

Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

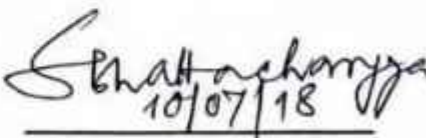
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2018 – December 2018			
Events		For Ensuring New Batch	For Continuing Batch
1	University-Registration process for ensuing newly admitted students process will be started on	June 11, 2018	N.A.
2	Admission activities (<i>for ensuing new students</i>) will be completed by	July 31, 2018	N.A.
3	Commencement of Academic Programme	August 1, 2018 Orientation Programme	July 13, 2018
4	Induction Programme for newly admitted students	August 1 to 21, 2018	N.A.
5	Registration activities (<i>for ensuing newly admitted students for the session 2018-19</i>) will be completed by	September 10, 2018	N.A.
7	Independence Day Celebration	August 15, 2018	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2018	
10	First Test Slot	September 14 to 20, 2018	
11	Annual Football Tournament	2 nd & 3 rd week of October, 2018	
12	Entrepreneurship Awareness Programme	1 st week of November, 2018	
13	Second Test Slot	November 14 to 20, 2018	
14	Practical Examinations & Viva-Voce	November 22 to 30, 2018	
15	Theory Examinations	December 4 to 21, 2018	
16	Inter Semester Break	December 24, 2018 to January 12, 2019	
17	Publication of Result	Results will be announced in the University website in February 2019.	
18	Last date of reporting on Mentoring (Phase I)	30 th September 2019	
19	Last date of reporting on Mentoring (Phase II)	30 th December 2019	
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.			
Separate Supplementary Examination for final year student will be held on September, 2018. Details will be available in the University website in due course.			
Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.			

* Dates of the events are subject to change in accordance with the situation.


10/07/18

Dr. S. Bhattacharyya

Principal, HETC



Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2019 – June 2019		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 14, 2019
2	Enrolment of students (for each semester)	January 20, 2020 to January 31, 2020
3	Annual Cultural Festival	4 th week of January, 2019
4	Annual Sports Meet	4 th week of January, 2019
5	Republic Day Celebration	January 26, 2019
6	Annual Alumni Meet	Last Sunday of January, 2019 (January 27, 2019)
7	Cricket Tournament	2 nd , 3 rd & 4 th Week of February, 2019
8	Badminton Tournament (For Girls)	1 st week of February, 2019
9	Panel Discussion by Magazine Committee	3 rd week of February, 2019
10	First Test Slot	2 nd week of March, 2019
11	TECHetc 2k19 (Annual Technical festival)	3 rd week of March, 2019
12	One Day Seminar by Student Chapter of IE(I)	4 th week of March, 2019
13	Seminar by INTERNSALA	1 st week of April, 2019
14	Second Test Slot	4 th week of April, 2019
15	First Improvement Test Slot	1 st week of May, 2019
16	Second Improvement Test Slot	2 nd week of May, 2019
17	Practical Examinations & Viva-Voce	May 15 to May 23, 2019
18	Theory Examinations	May 28 to June 17, 2019
19	Inter Semester Break (Summer)	June 18 to July 14, 2019
20	Publication of Result (Final Semester)	Results will be announced in the University website in July 2019
21	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2019

During Inter-Semester-Break (Summer), Practical Training (*where applicable*) may be conducted.

Separate Supplementary Examination for final year student will be held on September, 2018.

Details will be available in the University website in due course.

Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharya
18/07/18

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal

Hooghly Engineering & Technology College

Mission & Vision of Computer Science and Engineering Department

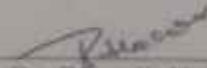
Mission

- To excel in professional carrier and higher education by accruing applied knowledge in Mathematics, Computation, Basic Principles of Science Engineering with capable communication.
- To create a strong teaching and research environment through excellent Computer Science and Engineering education.
- To analyze real life problems and projects in developing economically feasible and socially acceptable solutions.


Vision

Attainment of excellence as a computer engineer so as to prove themselves as outstanding professional with complete expertise and knowledge in Computer Science & Engineering and its applications so that they may prove a valuable resource for industry and society at large, maintaining all moral and ethical values.




Dr. Biswajit Halder
HOD, Department of CSE

H.O.D.
Computer Science and Engineering
Hooghly Engineering & Technology College


Dr. Smitadhi Ganguly
Principal-in-charge, HETC
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Purbati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly West Bengal University of Technology) Syllabus for B. Tech in Computer Science
 & Engineering (Applicable from the academic session 2020-2021)

Data Structure & Algorithm
 Paper Code: PCC-CS301
 Contacts: 3L

Name of the Course:	Data Structure & Algorithm	
Course Code: PCC-CS301	Semester: III	
Duration: 6 months	Maximum Marks: 100	
Teaching Scheme	Examination Scheme	
Theory: 3 hrs./week	Mid Semester exam: 15	
Tutorial: NIL	Assignment and Quiz: 10 marks	
	Attendance: 5 marks	
Practical: hrs./week	End Semester Exam : 70 Marks	
Credit Points:	3	
Objective:		
1	To learn the basics of abstract data types.	
2	To learn the principles of linear and non-linear data structures.	
3	To build an application using sorting and searching	
Pre-Requisite:		
1	CS201 (Basic Computation and Principles of C	
2	M101 & M201 (Mathematics), basics of set theory	

Unit	Content	Hrs/Unit	Marks/Unit
1	Introduction: Basic Terminologies: Elementary Data Organizations, Data Structure Operations :insertion, deletion, traversal etc.; Analysis of an Algorithm, Asymptotic Notations, Time-Space trade off. Searching: Linear Search and Binary Search Techniques and their complexity analysis.	10	
2	Stacks and Queues: ADT Stack and its operations: Algorithms and their complexity analysis, Applications of Stacks: Expression Conversion and evaluation-corresponding algorithms and complexity analysis. ADT queue, Types of Queue: Simple Queue, Circular Queue, Priority Queue; Operations on each type of Queues: Algorithms and their analysis.	9	
3	Linked Lists: Singly linked lists: Representation in memory, Algorithms of several operations: Traversing, Searching, Insertion into, Deletion from linked list; Linked representation of Stack and Queue, Header nodes, Doubly linked list: operations on it and algorithmic analysis; Circular Linked Lists: all operations their algorithms and the complexity analysis.	10	

	Trees: Basic Tree Terminologies, Different types of Trees: Binary Tree, Threaded Binary Tree, Binary Search Tree, AVL Tree; Tree operations on each of the trees and their algorithms with complexity analysis. Applications of Binary Trees. BTree, B+ Tree: definitions, algorithms and analysis		
4.	Sorting and Hashing: Objective and properties of different sorting algorithms: Selection Sort, Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Heap Sort; Performance and Comparison among all the methods, Hashing. Graph: Basic Terminologies and Representations, Graph search and traversal Algorithms and complexity analysis.	9	

Textbook and Reference books:

1. "Data Structures and Program Design in C", 2/E by Robert L. Kruse, Bruce P. Leung.
2. "Data Structure & Algorithms Using C", 5th Ed., Khanna Publishing House (AICTE Recommended -2018)
3. "Fundamentals of Data Structures of C" by Ellis Horowitz, Sartaj Sahni, Susan Anderson-freed.
4. "Data Structures in C" by Aaron M. Tenenbaum.
5. "Data Structures" by S. Lipschutz.
6. "Data Structures Using C" by Reema Thareja.
7. "Data Structure Using C", 2/e by A.K. Rath, A.K. Jagadev.
8. "Introduction to Algorithms" by Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein
9. "Data Structures through C" by Yashwant Kanetkar, BPB Publications.
10. "Expert Data Structures with C++" by R.B Patel, Khanna Publishing House



[Signature]
H.O.D.
 Computer Science and Engineering
 Hooghly Engineering & Technology College

[Signature]
Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpatil, Hooghly.

List of Text and reference books

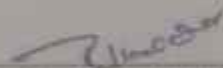
Paper Name: Design and Analysis of Algorithms

Paper Code: PCC-CS404

Text book/Reference books:

1. Introduction to Algorithms, 4TH Edition, Thomas H Cormen, Charles E Lieserson, Ronald C Rivest and Clifford Stein, MIT Press/McGraw-Hill.
2. Fundamentals of Algorithms – E. Horowitz et al.
4. Algorithm Design, 1ST Edition, Jon Kleinberg and EvaTardos, Pearson.
5. Algorithm Design: Foundations, Analysis, and Internet Examples, Second Edition, Michael T Goodrich and Roberto Tamassia, Wiley.
6. Algorithms -- A Creative Approach, 3RD Edition, UdiManber, Addison-Wesley, Reading, MA
7. Design & Analysis of Algorithms, Gajendra Sharma, Khanna Publishing House (AICTE Recommended Textbook – 2018)
8. Algorithms Design and Analysis, Udit Agarwal, Dhanpat Rai




Dr. Biswajit Halder
HOD, Department of CSE

H.O.D.
Computer Science and Engineering
Hooghly Engineering & Technology College

86
Dr. Smitadhi Ganguly
Principal-in-charge, HETC

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Newabadi, Hooghly-

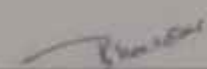
List of Text and reference books

Paper Name: Data Structure & Algorithm


Paper Code: PCC-CS301

Text books/Reference books:

1. "Data Structures and Program Design In C", 2/E by Robert L. Kruse, Bruce P. Leung.
2. "Data Structure & Algorithms Using C", 5th Ed., Khanna Publishing House (AICTE Recommended – 2018)
3. "Fundamentals of Data Structures of C" by Ellis Horowitz, Sartaj Sahni, Susan Andersonfreed.
4. "Data Structures in C" by Aaron M. Tenenbaum.
5. "Data Structures" by S. Lipschutz.
6. "Data Structures Using C" by Reema Thareja.
7. "Data Structure Using C", 2/e by A.K. Rath, A. K. Jagadev.
8. "Introduction to Algorithms" by Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein
9. "Data Structures through C" by Yashwant Kanetkar, BPB Publications.
10. "Expert Data Structures with C++" by R.B Patel, Khanna Publishing House
11. "Data Structure using C" by Udit Agarwal
12. "Data Structure through C" by G.S.Baluja


Dr. Biswajit Halder
HOD, Department of CSE

H.O.D.
Computer Science and Engineering
Hooghly Engineering & Technology College



Dr. Smitadhi Ganguly
Principal-in-charge, HETC

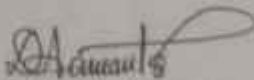
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



COURSE OUTCOMES

Course (Sub)Title : DESIGN & ANALYSIS OF ALGORITHM	
Course (Sub)Code : PCC CS404 Stream : CSE Semester: 4th	
Course (Sub) Outcomes	
CO No.	After completion of the course students will be able to
PCC-CS404.1	For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.
PCC-CS404.2	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms
PCC-CS404.3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Derive and solve recurrence relation
PCC-CS404.4	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it.
PCC-CS404.5	develop the dynamic programming algorithms, and analyze it to determine its computational complexity.
PCC-CS404.6	For a given model engineering problem model it using graph and write the corresponding algorithm to solve the problems
PCC-CS404.7	Explain the ways to analyze randomized algorithms (expected running time, probability of error).
PCC-CS404.8	Explain what an approximation algorithm is. Compute the approximation factor of an approximation algorithm (PTAS and FPTAS).


Dr. Biswajit Halder
HOD, Department of CSE

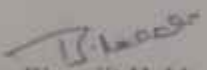

Mr. Dibyendu Samanta
Assistant Professor, Dept. of CSE

H.O.D.
Computer Science and Engineering
H. E. T. C. Hooghly Engineering & Technology P. O. - 741003

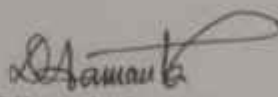


COURSE OUTCOMES

Course (Sub)Title : DATA STRUCTURE & ALGORITHMS	
Course (Sub)Code : PCC-CS301 Stream : CSE Semester:3rd	
Course (Sub) Outcomes	
CO No.	At the end of the course the students will be able to
PCC-CS301.1	Differentiate how the choices of data structure & algorithm methods impact the performance of program.
PCC-CS301.2	Solve problems based upon different data structure & also write programs.
PCC-CS301.3	Identify appropriate data structure & algorithmic methods in solving problem.
PCC-CS301.4	Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing
PCC-CS301.5	Compare and contrast the benefits of dynamic and static data structures implementations.


Dr. Biswajit Halder
HOD, Department of CSE

H.O.D.
Computer Science and Engineering
Hooghly Engineering & Technology College


Mr. Dibyendu Samanta
Assistant Professor, Dept. of CSE



PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:


1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the

engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.


11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOME (PSO)

1. **PSO 1:** Able to apply the knowledge gained during the course of the program from Mathematics, Basic Computing, Basic Sciences and Social Sciences in general and all computer science courses in particular to identify, formulate and solve real life complex engineering problems faced in industries and/or during research work with due consideration for the public health and safety, in the context of cultural, societal, and environmental situations.
2. **PSO 2:** Able to provide socially acceptable technical solutions to complex computer science engineering problems with the application of modern and appropriate techniques for sustainable development relevant to professional engineering practice.
3. **PSO 3:** Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team.
4. **PSO 4:** Able to comprehend and write effective project reports in a multidisciplinary environment in the context of changing technologies.


Dr. Biswajit Halder
HOD, Department of CSE

H.O.D.
Computer Science and Engineering
Hooghly Engineering & Technology College


Dr. Smitadhi Ganguly
Principal-in-charge, HETC
Principal in Charge
Hooghly Engineering & Technology College
17, Mahananda Road, Hooghly.



Mapping of COs with POs and PSOs

Name of the Course: Design and Analysis of Algorithms(PCC-CS-404)

Course Outcomes		Program Outcomes												Program Specific Outcomes			
Course Outcomes with Course Code	Description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3	PSO4
PCC-CS404.1	At the end of the course the students will be able to.... For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.	4	4	4	3	2			1	1	2			3	3		2
PCC-CS404.2	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms	4	4	4	4	2			1	1	2			3	3		2
PCC-CS404.3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Derive and solve recurrence relation.	4	3	4	4	2			1	1	2			3	3		2
PCC-CS404.4	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it.	4	3	4	4	2			1	1	2			3	4		2
PCC-CS404.5	develop the dynamic programming algorithms, and analyze it to determine	4	4	4	4	2			1	1	2			3	4		2

	by computational complexity																			
PCC- CS404.6	For a given model argumenting problem model it using graph and write the corresponding algorithm to solve the problems.	4	3	4	4	3	1	1	2	1	2	1	1	1	1	1	1	1	1	2
PCC- CS404.7	Explain the ways to analyze randomized algorithms (expected running time, probability of error)	6	4	4	4	4	2	1	1	2	1	1	1	1	1	1	1	1	1	2
PCC- CS404.8	Explain what an approximation algorithm is. Compute the approximation factor of an approximation algorithm (PTAS and FPTAS).	6	4	4	4	4	2	1	1	2	1	1	1	1	1	1	1	1	1	2



[Signature]
 Ms. Dibyendu Samanta
 Assistant Professor, Dept. of CSE

[Signature]
 Dr. Biswajit Halder
 HOD, Department of CSE
 H.O.D.
 Computer Science and Engineering
 Hoongly Engineering & Technology College

Mapping of COs with POs and PSOs

Name of the Course: Data Structure & Algorithm(PCC-CS301)

Course Outcomes with Course Code	Course Outcomes Description	Program Outcomes										Program Specific Outcomes						
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3	PSO4	
PCC-CS301.1	At the end of the course the students will be able to..... Differentiate how the choices of data structure & algorithm methods impact the performance of program.	4	4	2	3	3	3	1	1	1	1	2	2	3	3	1	1	2
PCC-CS301.2	Solve problems based upon different data structure & also write programs.	4	4	2	3	3	3	1	1	1	1	2	2	4	4	1	1	2
PCC-CS301.3	Identify appropriate data structure & algorithmic methods in solving problem.	4	4	2	3	3	3	1	1	1	1	2	2	4	4	1	1	2
PCC-CS301.4	Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing	4	4	2	3	3	3	1	1	1	1	2	2	4	4	1	1	2
PCC-CS301.5	Compare and contrast the benefits of dynamic and static data structures implementations.	4	4	2	3	3	3	1	1	1	1	2	2	4	4	1	1	3



Signature
Mr. Dibyendu Samanta
H.E.T.C. Hooghly,
D.C. Dept. of CSE

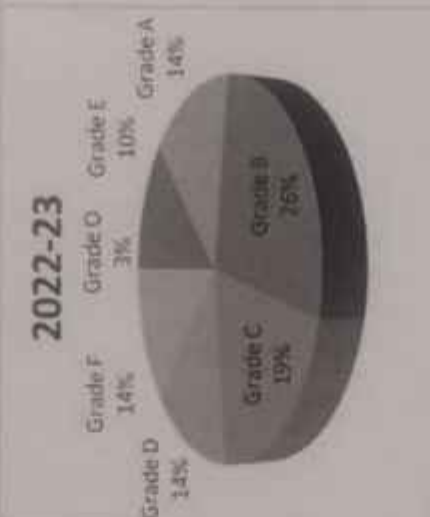
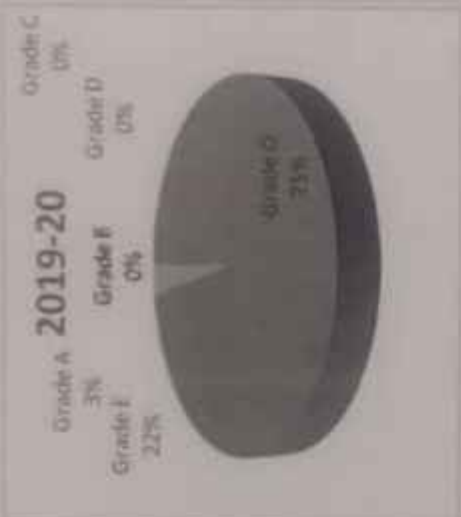
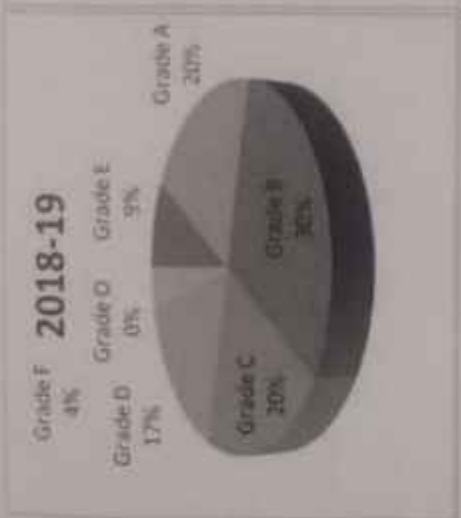
Signature

Mr. Dibyendu Samanta
Assistant Professor, Dept. of CSE

RESULT ANALYSIS

Hooghly Engineering & Technology College Department: Computer Science and Engineering	
Name of Faculty	Mr. Dibyendu Samanta
Name of Course	Formal Language & Automata Theory
Course Code	PCC-CS403
Department	Computer Science and Engineering
Teaching Methodology	Lecture by Faculty , Class Discussion
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade							Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D	F			
70	2018-19	0	6	14	21	14	12	3	6.61	2	
67	2019-20	50	15	2	0	0	0	0	9.72	4	
54	2020-21	39	24	0	0	0	0	1	9.5	4	
103	2021-22	95	7	0	0	0	0	1	9.85	4	
103	2022-23	3	10	15	27	20	14	14	6.28	2	



Dibyendu Samanta
 Mr. Dibyendu Samanta
 Assistant Professor, Department of CSE.

OIC, Examination Cell, HETC

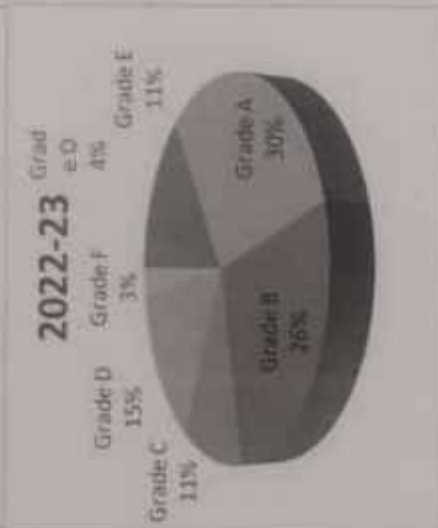
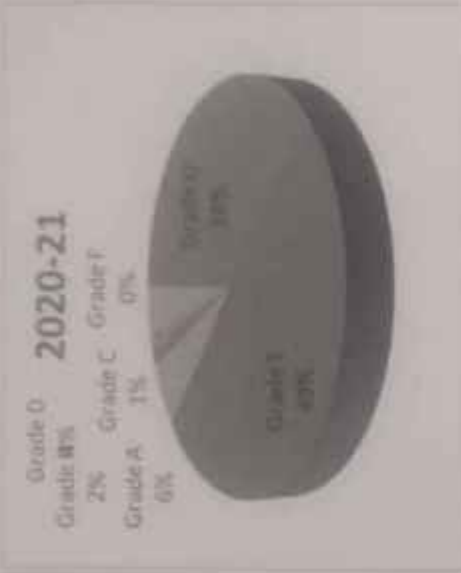
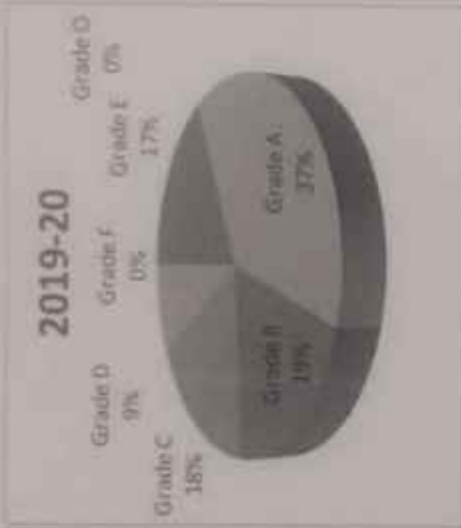
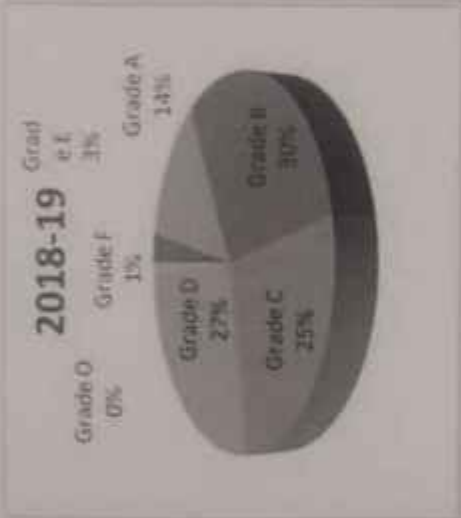
Dibyendu Samanta
 HOD, Department of CSE

H.O.D.
 Computer Science and Engineering
 Hooghly Engineering & Technology College

RESULT ANALYSIS

Hooghly Engineering & Technology College	
Department: Computer Science and Engineering	
Name of Faculty	Mr. Dibyendu Samanta
Name of Course	Data Structure & Algorithm
Course Code	PCC-CS301
Department	Computer Science and Engineering
Teaching Methodology	Lecture by Faculty, Class Discussion.
Assessment Tools	Continuous Assessment, Home Assignment, End Semester Examination

Total no. of students	Academic Session	Grade							Average Grade	Course Attainment	Faculty Acronym
		O	E	A	B	C	D	F			
71	2018-19	0	2	10	21	18	19	1	6.34	2	DBS
68	2019-20	0	12	25	13	12	6	0	7.37	3	DBS
69	2020-21	26	34	4	1	1	3	0	9.07	4	DBS
103	2021-22	79	23	1	0	0	0	0	9.76	4	DBS
104	2022-23	4	12	31	27	11	16	3	7.09	3	DBS



Mr. Dibyendu Samanta

Mr. Dibyendu Samanta
Assistant Professor, Department of CSE

OIC, Examination Cell, HETC

HOD, Department of CSE

HOD, Department of CSE

H.O.D.
Computer Science and Engineering
Hooghly Engineering & Technological College

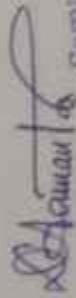
Attainment Calculation

Hooghly Engineering & Technology College	
Name of Faculty	MR. DIBYENDU SAMANTA
Name of Course	DATA STRUCTURE & ALGORITHM
Course Code	PCC-CSD1
Academic Year	2022-23
Total No. of Students in the Course	104
Teaching Methodology	Lecture by Faculty, Class Discussion
Assessment Tools	Power Point Presentation, Assignment, Continuous Assessment 1, Continuous Assessment 2, End Semester Examination

SEMESTER END ASSESSMENT							
Grade Obtained	O	E	A	B	C	D	F
Total no. of Students	4	12	31	27	11	16	3
Average Marks							7.09
Course Outcome Attainment							3

End Semester Assessment




 Mr. Dibyendu Samanta
 DIC, Dept. of CSE
 HETC, Hooghly.



Name of the Course & Course Code	Course Outcomes		Program Outcomes												Program Specific Outcomes				
	Course Outcome Code	Description	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3	PSO4	
Data Structure & Algorithm (PCC-CS301)	PCC-CS301.1	Differentiate how the choices of data structure & algorithm methods impact the performance of program.	4	4	2	3	3					1	1		2	3	3	1	2
	PCC-CS301.2	Solve problems based upon different data structure & also write programs.	4	4	2	3	3					1	1		2	4	4	1	2
	PCC-CS301.3	Identify appropriate data structure & algorithmic methods in solving problem	4	4	2	3	3					1	1		2	4	4	1	2
	PCC-CS301.4	Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing	4	4	2	3	3					1	1		2	4	4	1	2
	PCC-CS301.5	Compare and contrast the benefits of dynamic and static data	4	4	2	3	3					1	1	2	2	4	4	1	3

NAME : SUBHADIP SAMANTA

ROLL : 17600121065

SEM : 3RD SEMESTER

YEAR : 2ND YEAR

**SUB : DATA STRUCTURE &
ALGORITHM**

YEAR : 2022 – 2023

Question :

**WRITE A C PROGRAM TO IMPLEMENT
HEAP SORT METHOD.**

Write a C program to implement heap sort method.

INPUT

```
#include <stdio.h>
void heapify(int a[], int n, int i)
{
    int larg = i;
    int left = 2 * i + 1;
    int right = 2 * i + 2;
    if (left < n && a[left] > a[larg])
    {
        larg = left;
    }
    if (right < n && a[right] > a[larg])
    {
        larg = right;
    }
    if (larg != i)
    {
        int temp = a[i];
        a[i] = a[larg];
        a[larg] = temp;
        heapify(a, n, larg);
    }
}

void heapsort(int a[], int n)
{
    for (int i = n/2 - 1; i >= 0; i--)
    {
        heapify(a, n, i);
    }
    for (int i = n - 1; i >= 0; i--)
    {
        for {
            int temp = a[0];
            a[0] = a[i];
            a[i] = temp;
        }
    }
}
```



```
heapify(a, i, 0);
```

```
void printArr(int arr[], int n)
```

```
for (int i = 0; i < n; i++)
```

```
    printf("%d", arr[i]);
```

```
    printf(" ");
```

```
int main ()
```

```
int a[] = {48, 10, 23, 43, 28, 26, 1};
```

```
int n = sizeof(a) / sizeof(a[0]);
```

```
printf("Before sorting array elements are : \n");
```

```
printArr(a, n);
```

```
heapsort(a, n);
```

```
printf("\n After sorting array elements are : \n");
```

```
printf
```

```
printArr(a, n);
```

```
return 0;
```

OUTPUT

Before sorting array elements are :

48 10 23 43 28 26 1

After sorting array elements are :

1 10 23 28 26 43 48

NAME: SRIJA MAZUMDER
DEPARTMENT: CSE
YEAR: 2nd (3rd SEM)
UNIV ROLL: 17600121040
CLASS ROLL: 40

Data Structure & Algorithm
Laboratory
Assignment for PCA-2

Program 4: Program to find the maximum and minimum value from a singly linked list.

```
→ #include <stdio.h>
#include <stdlib.h>
struct node
{
    int info;
    struct node * link;
} *start = NULL;
int i, count, n, c, m;
char ch;
void create (int);
void maximum ();
void minimum ();
int main ()
{
    printf ("Enter the no of nodes = ");
    scanf ("%d", &n);
    for (i=0; i < n; i++)
    {
        printf ("Enter item = ");
        scanf ("%d", &m);
        create (m);
    }
    maximum ();
    minimum ();
    return 0;
}
void create (int m)
{
    struct node *temp, *q;
    temp = (struct node *) malloc (sizeof (struct node));
    temp->info = m;
    temp->link = NULL;
    if (start == NULL)
        start = temp;
}
```

Srija Mazumder

```

else
{
    q = start;
    while (q → link != NULL)
    {
        q = q → link;
    }
    q → link = temp;
}
}

void maximum()
{
    struct node *current = start;
    int max;
    if (start == NULL)
        printf("List is empty\n");
    else
    {
        max = start → info;
        while (current != NULL)
        {
            if (max < current → info)
                max = current → info;
            current current = current → link;
        }
        printf("Maximum value in this singly linked list is: %d", max);
    }
}

void minimum()
{
    struct node *current = start;
    int min;
    if (start == NULL)
        printf("List is empty\n");
    else
    {
        min = current start → info;
        while (current != NULL)
        {
            if (min > current → info)
                min = current → info;
            current = current → link;
        }
        printf("Minimum value in this singly linked list is: %d", min);
    }
}
}
}

```

Sujei Hazjunder

Output

Enter no of nodes = 5

Enter item = 2

Enter item = 1

Enter item = 9

Enter item = 6

Enter item = 3.

Maximum value in this singly linked list is : 9

Minimum value in this singly linked list is : 1

Suiza Mozumder

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

PCA 2

Dept: Computer Science & Engineering

Name:Adrija Chatterjee

UniversityRoll No: 17600121030

Subject: Data Structure & Algorithm

Subject Code: PCC-CS391

Year: 2nd

Semester: 3rd

Academic Session: 2022-2023

Program 3: write a C Program to Sort an array using merge sort technique.

Solution:

```
#include <stdio.h>
#include <stdlib.h>
void merge (int *a, int low, int mid, int high) {
    int temp[20], i, j, k;
    i = low;
    j = mid + 1;
    k = low;
    while (i <= mid && j <= high) {
        if (a[i] < a[j])
            temp[k++] = a[i++];
        else
            temp[k++] = a[j++];
    }
    while (i <= mid) {
        temp[k++] = a[i++];
    }
    while (j <= high) {
        temp[k++] = a[j++];
    }
    for (i = low; i <= high; i++)
        a[i] = temp[i];
}
```

```

void mergesort (int *a, int low, int high) {
    int mid;
    if (low < high) {
        mid = (low + high) / 2;
        mergesort (a, low, mid);
        mergesort (a, mid + 1, high);
        merge (a, low, mid, high);
    }
}

```

```

int main() {
    int a[10], n, i;
    printf ("Enter the size of the array (n)");
    scanf ("%d", &n);
    printf ("Enter the Array elements (n)");
    for (i = 0; i < n; i++) {
        scanf ("%d", &a[i]);
    }
    mergesort (a, 0, n - 1);
    printf ("The sorted Array is: (n)");
    for (i = 0; i < n; i++)
        printf ("%d\t", a[i]);
    return 0;
}

```

Output

Enter the size of the array

4

Enter the array elements

5

8

3

6

The sorted array is:

3 5 6 8

STACK

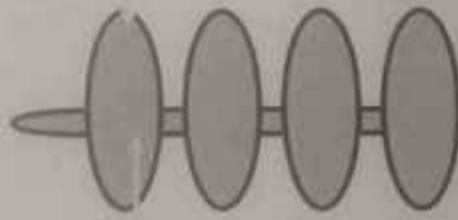
Mr. Dibyendu Samanta
Assistant Professor, Department of CSE



Introduction

- A stack is a linear data structure with the property that the elements in a stack are added (push) and removed (pop) only from one end (top)
- A stack is called a LIFO (Last-In First-Out) data structure as the element that is inserted last is the first one to be taken out
- Stacks can be implemented either using an array or a linked list

Example



Another plate will be added on top of this plate

The topmost plate will be removed first

Stack Operations

1. Push – add an element to a stack
2. Pop -- remove the top element from stack, return or not return the data of top element
3. Display – get the data of top element of stack, return the value of the top element

All operations work at the top of a stack

Array Representation

- Use an element array of MAX size to represent a stack.
- Use a variable TOP to represent the index/or address of the top element of the stack in the array. It is this position from where the element will be added or removed
- $TOP = -1$ indicates that the stack is empty
- $TOP = MAX - 1$ indicates that the stack is full

PUSH operation

- The push operation is used to insert an element in to the stack.
- The new element is added at the topmost position of the stack.
- First check if $TOP == MAX - 1$.
If true, then it means the stack is full and no more insertions can further be added, an OVERFLOW message is printed.
- If not true, increase TOP by 1, then add the element at TOP position

PUSH Algorithm

Algorithm to PUSH an element in a stack

Step 1: IF $TOP = MAX - 1$, then

PRINT "OVERFLOW"

else

Step 2: Read VALUE

Step 3: SET $TOP = TOP + 1$

Step 4: SET $STACK[TOP] = VALUE$

End if

Step 4: END

Example

A	B	C	D	E					
---	---	---	---	---	--	--	--	--	--

0 1 2 3 4 5 6 7 8 9

A	B	C	D	E	F				
---	---	---	---	---	---	--	--	--	--

0 1 2 3 4 5 6 7 8 9

POP operation

- The pop operation is used to delete the topmost element from the stack.

- First check if $TOP == -1$.

If true then it means the stack is empty so no more deletions can further be done, an UNDERFLOW message is printed.

If not true, get the value of the top element, decrease TOP by one.

Example

A	B	C	D	K						
---	---	---	---	---	--	--	--	--	--	--

0 1 2 3 TOP=4 5 6 7 8 9

A	B	C	D							
---	---	---	---	--	--	--	--	--	--	--

0 1 2 TOP=3 4 5 6 7 8 9

POP Algorithm

• Algorithm to POP an element from a stack

Step 1: IF TOP = -1, then

PRINT "UNDERFLOW"

else

Step 2: SET VAL = STACK[TOP]

Step 3 : Print 'Popped element is', VAL

Step 4: SET TOP = TOP - 1

[End if]

Step 4: END

Display

• Algorithm for Display Operation

Step 1: IF TOP = -1, then

PRINT "STACK IS EMPTY"

else

Step 2: Repeat for $i=TOP$ down to 0

Step 3: Print STACK[i]

End if

Step 4: END

Applications of Stack

1. Reversing a list
2. Parentheses checker
3. Conversion of an infix expression into a postfix expression
4. Evaluation of a postfix expression
5. Conversion of an infix expression into a prefix expression
6. Evaluation of a postfix expression
7. Recursion
8. Tower of Hanoi

AVL Tree

AVL Tree is invented by GM Adelson - Velsky and EM Landis in 1962. AVL Tree can be defined as height balanced binary search tree in which each node is associated with a balance factor which is calculated by subtracting the height of its right sub-tree from that of its left sub-tree.

Tree is said to be balanced if balance factor of each node is in between -1 to 1, otherwise, the tree will be unbalanced and need to be balanced.

$$\text{BalanceFactor} = \text{height}(\text{left-sutree}) - \text{height}(\text{right-sutree})$$

AVL Rotations

To balance itself, an AVL tree may perform the following four kinds of rotations –

- Left rotation
- Right rotation
- Left-Right rotation
- Right-Left rotation

The first two rotations are single rotations and the next two rotations are double rotations. To have an unbalanced tree, we at least need a tree of height 2. With this simple tree, let's understand them one by one.

LL Rotation

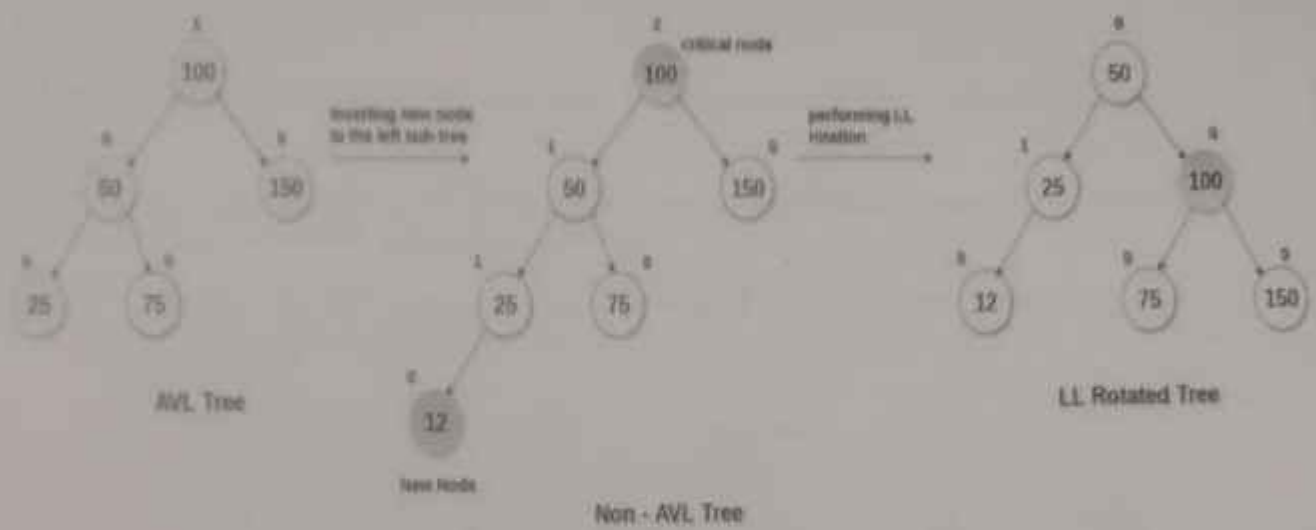
The tree shown in following figure is an AVL Tree, however, we need to insert an element into the left of the left sub-tree of A, the tree can become unbalanced with the presence of the critical node A.

The node whose balance factor doesn't lie between -1 and 1, is called critical node.

In order to rebalance the tree, LL rotation is performed as shown in the following diagram.

The node B becomes the root, with A and T3 as its left and right child. T1 and T2 becomes the left and right sub-trees of A.

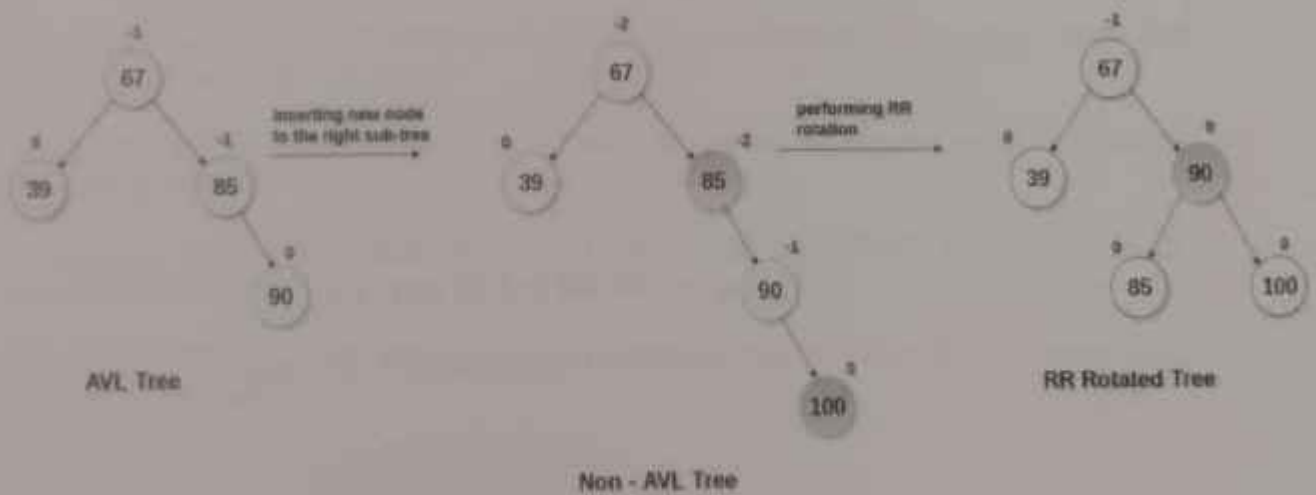




RR Rotation

90 is inserted in to the right of the right sub-tree. In this case, critical node A will be 85, which is the closest ancestor to the new node, whose balance factor is disturbed. Therefore, we need to rebalance the tree by applying RR rotation onto it.

The node B will be the node 90, which will become the root node of this sub-tree. The critical node 85 will become its left child, in order to produce the rebalanced tree which is now an AVL tree.

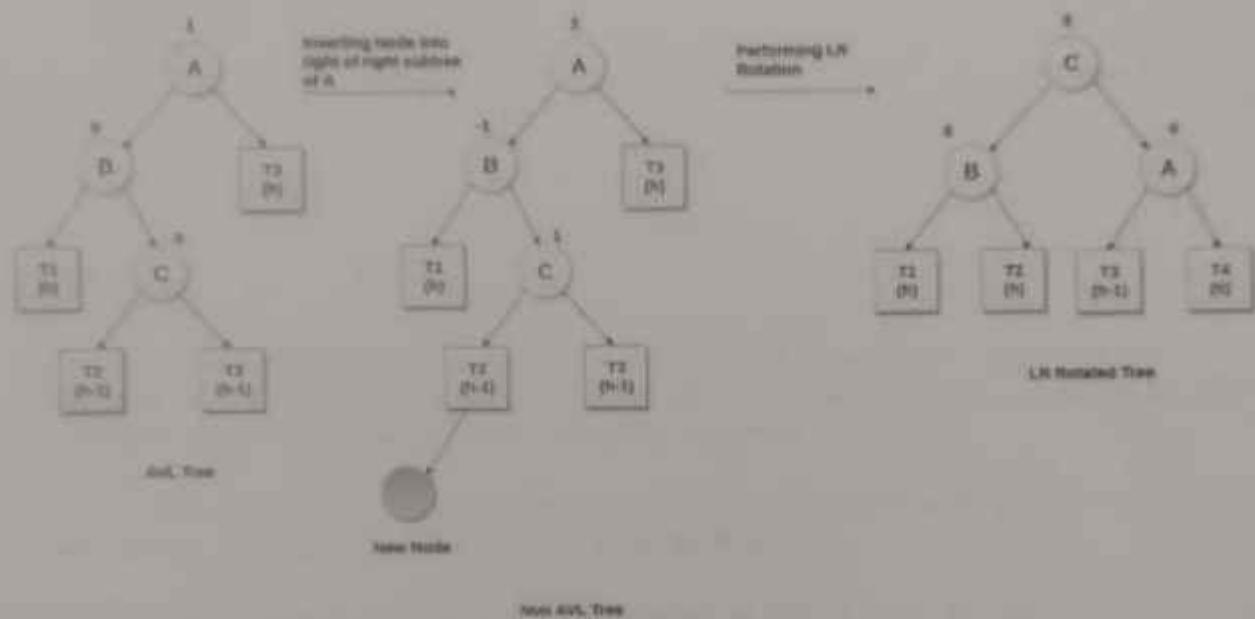


LR Rotation

LR rotation is to be performed if the new node is inserted into the right of the left sub-tree of node A.

In LR rotation, node C (as shown in the figure) becomes the root node of the tree, while the node B and A becomes its left and right child respectively.

T1 and T2 becomes the left and right sub-tree of Node B respectively whereas, T3 and T4 becomes the left and right sub-tree of Node A.



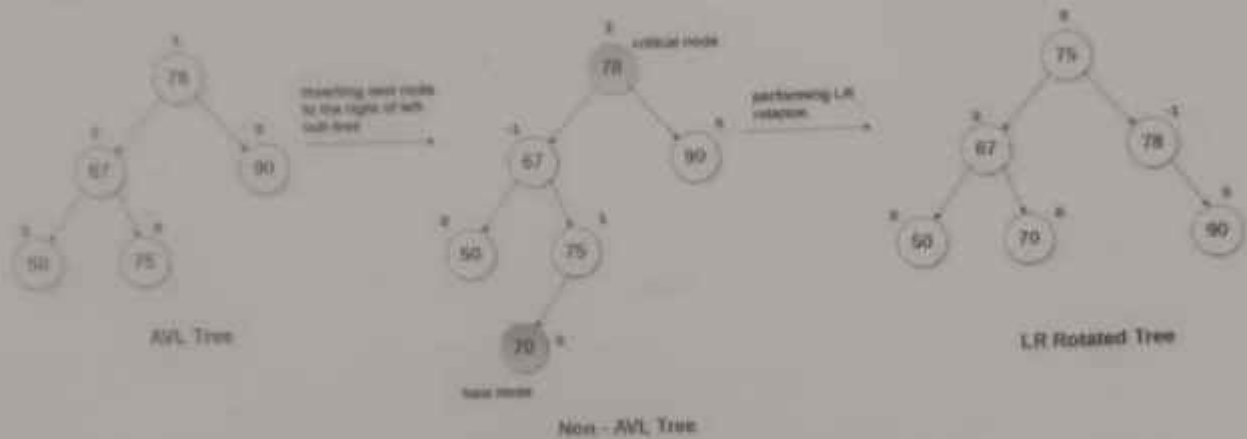
According to the property of binary search tree, the node with value 70 is inserted into the right of the left sub-tree of the root of tree.

As shown in the figure, the balance factor of the root node disturbed upon inserting 70 and this becomes the critical node A.

To rebalance the tree, LR rotation is to be performed. Node C i.e. 75 will become the new root node of the tree with B and A as its left and right child respectively.

Sub-trees T1, T2 become the left and right sub-tree of B while sub-trees T3, T4 become the left and right sub-tree of A.

The procedure is shown in the following figure.



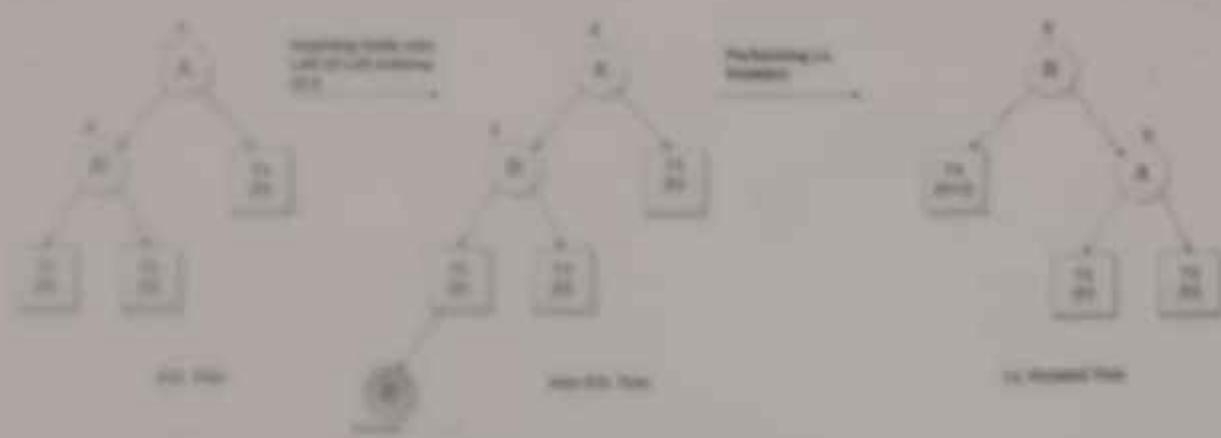
RL Rotation :

RL rotations is to be performed if the new node is inserted into the left of right sub-tree of the critical node A. Let us consider, Node B is the root of the right sub-tree of the critical node, Node C is the root of the sub-tree in which the new node is inserted.

Let T1 be the left sub-tree of the critical node A, T2 and T3 be the left and right sub-tree of Node C respectively, sub-tree T4 be the right sub-tree of Node B.

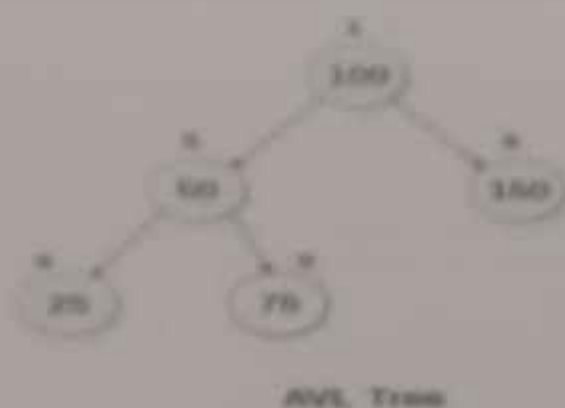
Since, RL rotation is the mirror image of LR rotation. In this rotation, the node C becomes the root node of the tree with A and B as its left and right children respectively. Sub-trees T1 and T2 becomes the left and right sub-trees of A whereas, T3 and T4 becomes the left and right sub-trees of B.

The process of RL rotation is shown in the following image.



Example :

Insert the node with value 12 into the tree shown in the following figure.



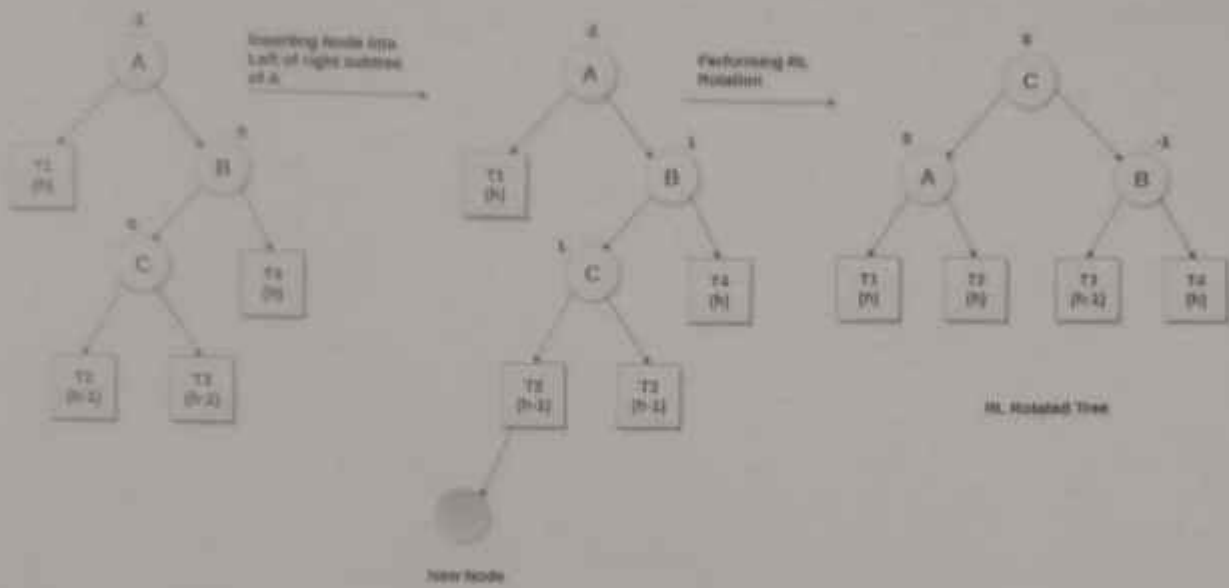
Solution:

12 will be inserted to the left of 25 and therefore, it disturbs the AVLness of the tree. The tree needs to be rebalanced by rotating it through LL rotation.

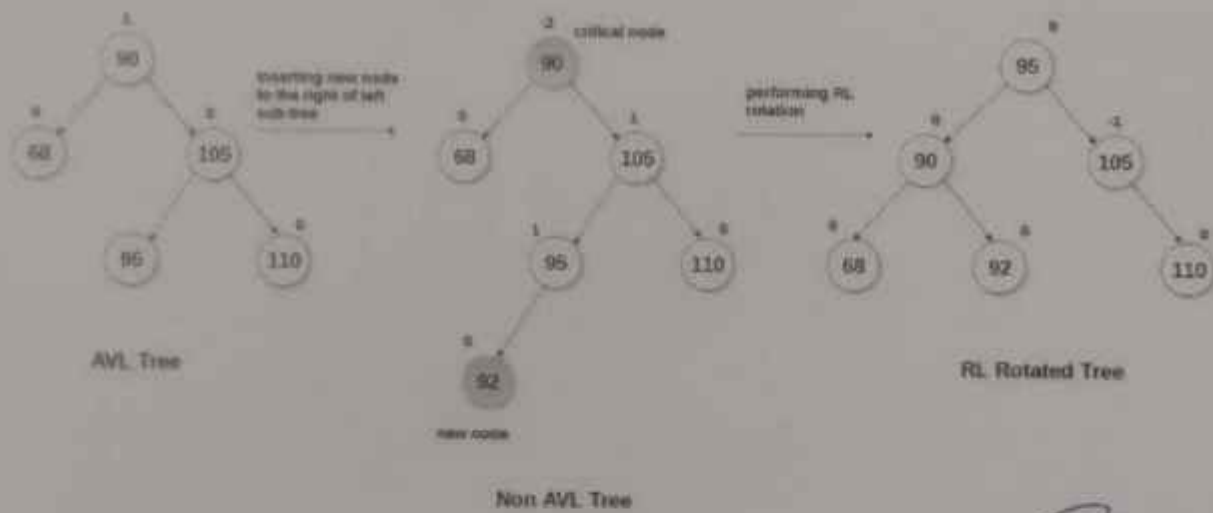
Here, the critical node 100 will be moved to its right, and the root of its left sub-tree (B) will be the new root node of the tree.

The right sub-tree of B i.e. T2 (with root node 75) will be placed to the left of Node A (with value 100).

By following this procedure, the tree will be rebalanced and therefore, it will be an AVL tree produced after inserting 12 into it.



Inserting 92 disturbs the balance factor of the node 92 and it becomes the critical node A with 105 as the node B and 95 with



Signature



Network Flow Problems

Given the flow network $G = (V, E)$ the maximum flow problem is to find a flow with maximum value.

Residual network consists of edges that can admit more net flow.

The amount of additional net flow we can push from u to v before exceeding the capacity $c(u, v)$ is the residual capacity of (u, v) given by

$$c_f(u, v) = c(u, v) - f(u, v)$$

~~Given a flow network $G = (V, E)$ and a flow f , the residual network of G induced by f is $G_f = (V, E_f)$ where~~

$$E_f = \{ (u, v) \in V \times V : c_f(u, v) > 0 \}$$

Each edge ~~in~~ of residual ~~a~~ network or residual edge can admit a strictly positive net flow.

Given a flow network $G = (u, v)$ and a flow f , an augmenting path p is a simple path s to t in the residual network G_f .

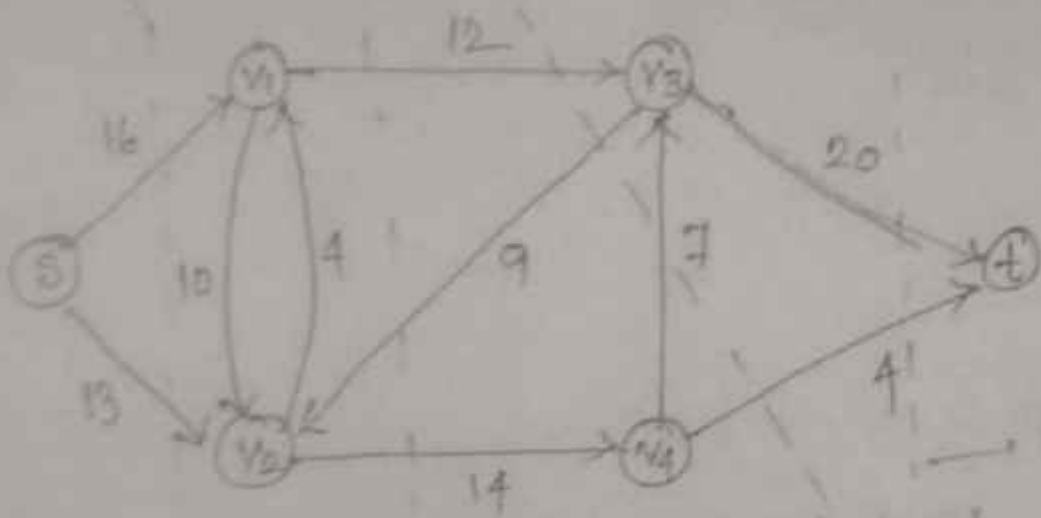
Residual capacity of an augmenting path p is

$$c_f(p) = \min \{ c_f(u, v) : (u, v) \text{ is in } p \}$$

Max-flow Min-cut Theorem.

If f is a flow network $G = (V, E)$ with source s and sink t , then the following conditions are equivalent:

1. f is a maximum flow in G
2. The residual network G_f contains no augmenting paths.
3. $|f| = c(s, T)$ for some cut (S, T) of G .



Capacity
 $= 12 + 13 + 14$
 $= 29$

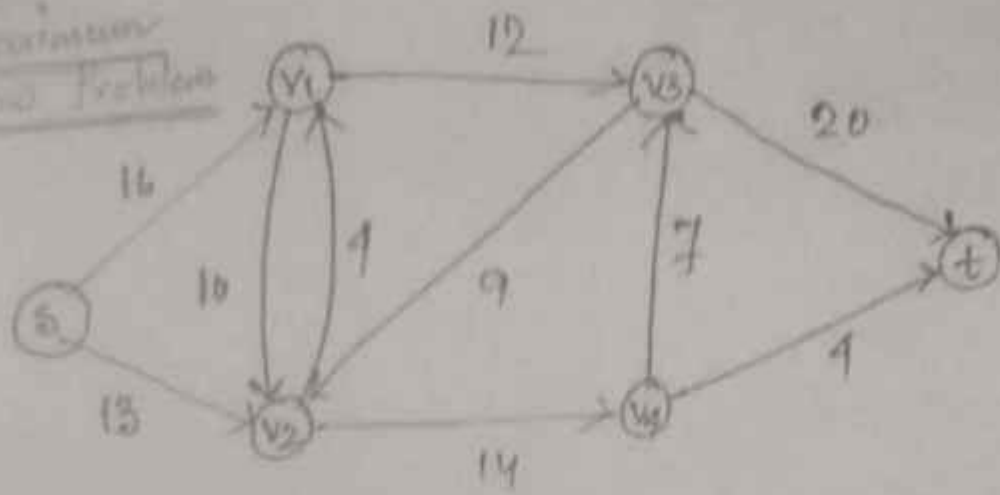
$(20+4) = 24$

↓ min-cut
 Capacity of the cut $= 12 + 0 + 7 + 4$
 $= 23$

0 is reverse direction

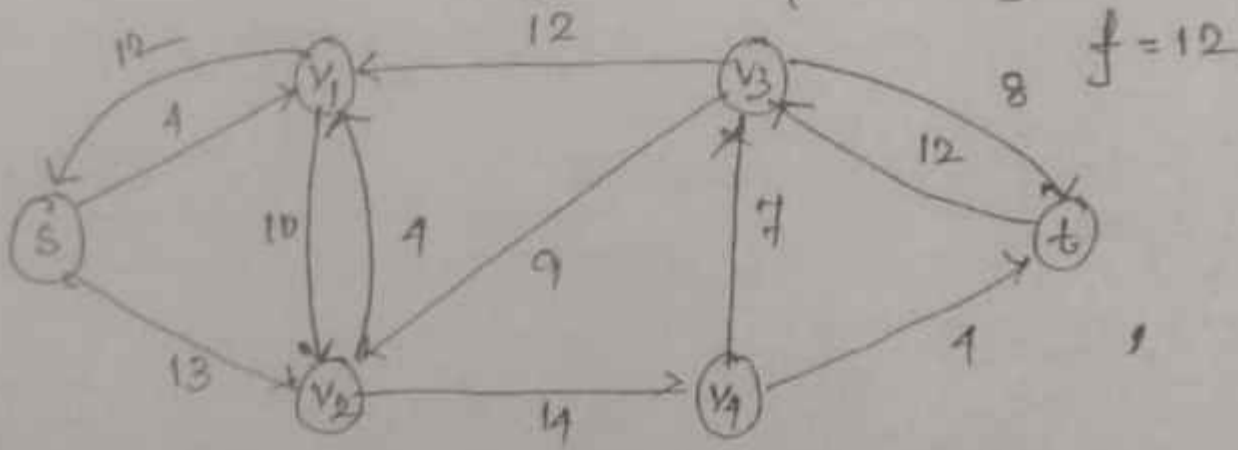
Cut with minimum capacity will be the max flow

Maximum Flow Problem



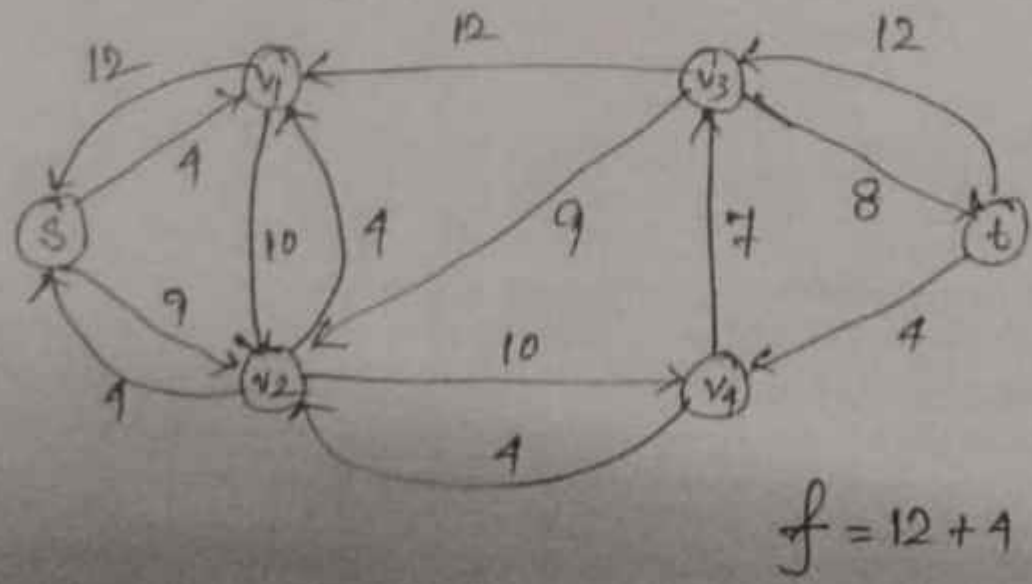
Consider the augmenting path $s \rightarrow v_1 \rightarrow v_3 \rightarrow t$

$$C_f(p) = \min \{16, 12, 20\} = 12.$$



$s \rightarrow v_2 \rightarrow v_4 \rightarrow t$

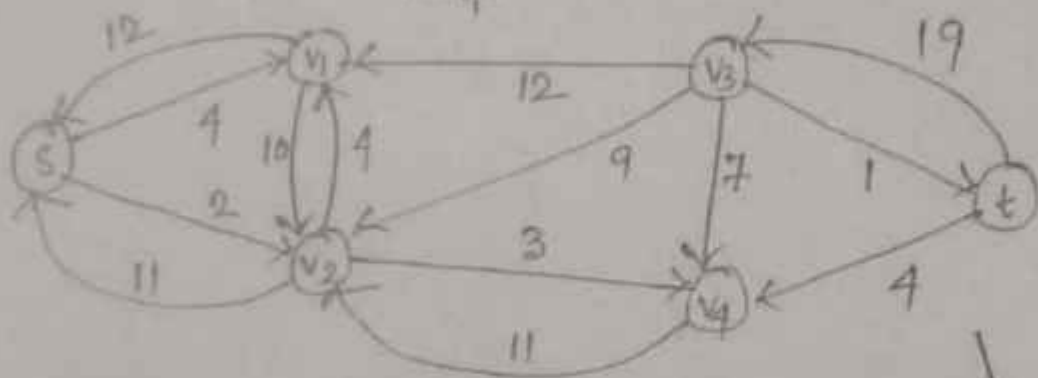
$$C_f(p) = 1$$



$$s \rightarrow v_2 \rightarrow v_4 \rightarrow v_3 \rightarrow t$$

$$C_f(p) = \min \{ 9, 10, 7, 8 \}$$

$$= 7$$



$$f = 12 + 1 + 7$$

$$= 23$$

There is no augmenting path

Manank

Data Structure & Algorithm (PCC-CS301)
Academic Session: 2022-23
Power Point Presentation Topics for CA1

Class Roll	Topic	Class Roll	Topic	Class Roll	Topic
1	Array	32	Introduction to Data Structure & Algorithm	63	Polish Notation
2	Asymptotic Notations	33	Linear Queue	64	Array
3	Stack	34	Circular Queue	65	Asymptotic Notations
4	Address Calculation of 1D & 2D array	35	Double Ended Queue	66	Stack
5	Introduction to Data Structure & Algorithm	36	Polish Notation	67	Address Calculation of 1D & 2D array
6	Linear Queue	37	Array	68	Introduction to Data Structure & Algorithm
7	Circular Queue	38	Asymptotic Notations	69	Linear Queue
8	Double Ended Queue	39	Stack	70	Circular Queue
9	Polish Notation	40	Address Calculation of 1D & 2D array	71	Double Ended Queue
10	Array	41	Introduction to Data Structure & Algorithm	72	Polish Notation
11	Asymptotic Notations	42	Linear Queue	73	Array
12	Stack	43	Circular Queue	74	Asymptotic Notations
13	Address Calculation of 1D & 2D array	44	Double Ended Queue	75	Stack
14	Introduction to Data Structure & Algorithm	45	Polish Notation	76	Address Calculation of 1D & 2D array
15	Linear Queue	46	Array	77	Introduction to Data Structure & Algorithm
16	Circular Queue	47	Asymptotic Notations	78	Linear Queue
17	Double Ended Queue	48	Stack	79	Circular Queue
18	Polish Notation	49	Address Calculation of 1D & 2D array	80	Double Ended Queue
19	Array	50	Introduction to Data Structure & Algorithm	81	Stack
20	Asymptotic Notations	51	Linear Queue	82	Polish Notation
21	Stack	52	Circular Queue	83	Array
22	Address Calculation of 1D & 2D array	53	Double Ended Queue	84	Asymptotic Notations
23	Introduction to Data Structure & Algorithm	54	Polish Notation	85	Stack
24	Linear Queue	55	Array	86	Address Calculation of 1D & 2D array

Handwritten signature

25	Circular Queue	56	Asymptotic Notations	87	Introduction to Data Structure & Algorithm
26	Double Ended Queue	57	Stack	88	Linear Queue
27	Polish Notation	58	Address Calculation of 1D & 2D array	89	Circular Queue
28	Array	59	Introduction to Data Structure & Algorithm	90	Double Ended Queue
29	Asymptotic Notations	60	Linear Queue	91	Polish Notation
30	Stack	61	Circular Queue	92	Array
31	Address Calculation of 1D & 2D array	62	Double Ended Queue	93	Asymptotic Notations



Signature

Data Structure & Algorithm (PCC-CS301)

CSE 2nd Year

Academic Session: 2022-23

Topics for CA2

Class Roll	Topic	Class Roll	Topic
1	Stack (Definition, operations,algorithm)	51	Stack (Definition, operations,algorithm)
2	Applications of stack(Infix to postfix, Postfix expression evaluation etc)	52	Applications of stack(Infix to postfix, Postfix expression evaluation etc)
3	Linear Queue (Operations,algorithm,applications)	53	Linear Queue (Operations,algorithm,applications)
4	Circular Queue (Operations,algorithm,applications)	54	Circular Queue (Operations,algorithm,applications)
5	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)	55	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)
6	Single Linked List deletions(examples,from beginning, from end, from intermediate position)	56	Single Linked List deletions(examples,from beginning, from end, from intermediate position)
7	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)	57	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)
8	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)	58	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)
9	Binary Tree (Definition, Representation, different types of binary tree)	59	Binary Tree (Definition, Representation, different types of binary tree)
10	Binary Tree Traversals(Examples, recursive algorithms)	60	Binary Tree Traversals(Examples, recursive algorithms)
11	Stack (Definition, operations,algorithm)	61	Stack (Definition, operations,algorithm)
12	Applications of stack(Infix to postfix, Postfix expression evaluation etc)	62	Applications of stack(Infix to postfix, Postfix expression evaluation etc)
13	Linear Queue (Operations,algorithm,applications)	63	Linear Queue (Operations,algorithm,applications)
14	Circular Queue (Operations,algorithm,applications)	64	Circular Queue (Operations,algorithm,applications)
15	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)	65	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)
16	Single Linked List deletions(examples,from beginning, from end, from intermediate position)	66	Single Linked List deletions(examples,from beginning, from end, from intermediate position)
17	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)	67	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)
18	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)	68	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)

19	Binary Tree (Definition, Representation, different types of binary tree)	69	Binary Tree (Definition, Representation, different types of binary tree)
20	Binary Tree Traversals(Examples, recursive algorithms)	70	Binary Tree Traversals(Examples, recursive algorithms)
21	Stack (Definition, operations,algorithm)	71	Stack (Definition, operations,algorithm)
22	Applications of stack(Infix to postfix, Postfix expression evaluation etc)	72	Applications of stack(Infix to postfix, Postfix expression evaluation etc)
23	Linear Queue (Operations,algorithm,applications)	73	Linear Queue (Operations,algorithm,applications)
24	Circular Queue (Operations,algorithm,applications)	74	Circular Queue (Operations,algorithm,applications)
25	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)	75	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)
26	Single Linked List deletions(examples,from beginning, from end, from intermediate position)	76	Single Linked List deletions(examples,from beginning, from end, from intermediate position)
27	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)	77	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)
28	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)	78	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)
29	Binary Tree (Definition, Representation, different types of binary tree)	79	Binary Tree (Definition, Representation, different types of binary tree)
30	Binary Tree Traversals(Examples, recursive algorithms)	80	Binary Tree Traversals(Examples, recursive algorithms)
31	Stack (Definition, operations,algorithm)	81	Stack (Definition, operations,algorithm)
32	Applications of stack(Infix to postfix, Postfix expression evaluation etc)	82	Applications of stack(Infix to postfix, Postfix expression evaluation etc)
33	Linear Queue (Operations,algorithm,applications)	83	Linear Queue (Operations,algorithm,applications)
34	Circular Queue (Operations,algorithm,applications)	84	Circular Queue (Operations,algorithm,applications)
35	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)	85	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)
36	Single Linked List deletions(examples,from beginning, from end, from intermediate position)	86	Single Linked List deletions(examples,from beginning, from end, from intermediate position)
37	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)	87	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)
38	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)	88	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)
39	Binary Tree (Definition, Representation, different types of binary tree)	89	Binary Tree (Definition, Representation, different types of binary tree)
40	Binary Tree Traversals(Examples, recursive algorithms)	90	Binary Tree Traversals(Examples, recursive algorithms)

41	Stack (Definition, operations,algorithm)	91	Stack (Definition, operations,algorithm)
42	Applications of stack(Infix to postfix, Postfix expression evaluation etc)	92	Applications of stack(Infix to postfix, Postfix expression evaluation etc)
43	Linear Queue (Operations,algorithm,applications)	93	Linear Queue (Operations,algorithm,applications)
44	Circular Queue (Operations,algorithm,applications)		
45	Single Linked List Insertions (examples, at beginning, at end, at intermediate position)		
46	Single Linked List deletions(examples,from beginning, from end, from intermediate position)		
47	Circular Linked List Insertions (examples,at beginning, at end, at intermediate position)		
48	Circular Linked List deletions(examples, from beginning, from end, from intermediate position)		
49	Binary Tree (Definition, Representation, different types of binary tree)		
50	Binary Tree Traversals(Examples, recursive algorithms)		

For Lateral entry & Stream Change students

Name	Topics for CA2	Name	Topics for CA2
Debjani Roy	Stack (Definition, operations,algorithm)	Debanjan Mukherjee	Circular Queue (Operations,algorithm,applications)
Anushka Roy	Applications of stack(Infix to postfix, Postfix expression evaluation etc)	Ritika Ghosh	Stack (Definition, operations,algorithm)
Abhrajit Saha	Linear Queue (Operations,algorithm,applications)	Nilanjana Bairagi	Applications of stack(Infix to postfix, Postfix expression evaluation etc)
Adrija Gupta	Circular Queue (Operations,algorithm,applications)	Nilanjana Kundu	Linear Queue (Operations,algorithm,applications)
Shuvadip Ghosh	Stack (Definition, operations,algorithm)	Suman Mondal	Circular Queue (Operations,algorithm,applications)
Shrestha Banerjee	Applications of stack(Infix to postfix, Postfix expression evaluation etc)	Utsab Saha	Stack (Definition, operations,algorithm)
Arkadip Bepari	Linear Queue (Operations,algorithm,applications)		



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
Continuous Evaluation (CA3), September' 2022
Department: Computer Science & Engineering

Year: 2nd
Subject: Data Structure & Algorithms
Time : 1 Hr

Semester: 3rd
Paper Code: PCC-CS301
Full Marks : 25

Group A
(Multiple Choice Questions)
(Answer any five questions)

1. Choose the correct alternative of the following: 5 x 1 = 5.
- i) Which of the following information is stored in a doubly-linked list's nodes?
- a) Value of node b) Address of next node
c) Address of the previous node d) All of the above
- ii) Reverse polish notation is often known as
- a) Infix b) Postfix
c) Prefix d) None of these
- iii) The evaluation of the postfix expression
3, 5, 7, *, +, 12, % is
- a) 2 b) 3
c) 0 d) 3.17
- iv) _____ of binary search tree starts by visiting the current node's left child, then its right child and finally the current node itself.
- a) Preorder b) In-order
c) Post-order d) None of these
- v) $f(n) = O(g(n))$ is
- a) $g(n)$ is asymptotic upper bound for $f(n)$ b) $g(n)$ is asymptotic lower bound for $f(n)$
c) $g(n)$ is asymptotic tight bound for $f(n)$ d) None of these
- vi) A binary search tree whose left sub-tree and right sub-tree differ in height by at most 1 unit is called
- a) AVL tree b) Threaded Binary Tree
c) B-Tree d) None of these

Group B
(Answer any four questions of the following)

2. a) Evaluate the following postfix expression: 4 x 5 = 5
4, 5, 4, 2, ^, +, *, 2, 2, ^, 9, 3, /, *, -
- b) Write an algorithm for evaluating postfix expression. 2+3
3. Write down the function code for deletion from a circular linked list. 5

Signature

4. Convert the infix expression into its equivalent postfix expression using stack.

$$(A + B) * C - (D - E) / (F + G)$$

5

5. Construct a Binary Search Tree for the following sequence of numbers

45, 36, 76, 23, 89, 115, 98, 39, 41, 56, 69, 48

3+2=5

Draw the resultant tree after deleting 76.

b. Insert the following keys in the order given below to build them into an AVL tree

12, 11, 13, 10, 09, 15, 14, 18, 7, 6, 5, 4

5

Clearly mention different rotations used and balance factor of each node.

7. Construct a binary tree from the given in-order and post-order traversal sequences:

In-order : HDBIEAFJCKGL

5

Post-order : HDIEBJFKLGCA



Aamanta



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): July 2022 – December 2023			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of Academic Programme	October 14, 2022, Orientation Programme	July 4, 2022
2	Induction Programme for newly admitted students	October 15 to November 3, 2022	N.A.
3	Admission activities (for ensuing new students) to be completed by	November 30, 2022	N.A.
4	Registration activities (for ensuing newly admitted students for the session 2022-23) will be completed by	As per admission dates. Would be notified separately	N.A.
5	Enrolment of students (for 3 rd , 5 th & 7 th semester)	As per university directive	July 7, 2022 to July 15, 2022
6	Enrolment of students (for 1 st & 3 rd semester-Lateral)	Tentatively in the month of December, 2022	N.A.
7	Continuous Assessment 1(CA1) (In the form of Power Point Presentation) (for 3 rd , 5 th & 7 th semester)	As per university directive	August 1, 2022 to August 4, 2022
8	Continuous Assessment 2(CA2) (In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	As per university directive	September 1, 2022 to September 4, 2022
9	A Guest Lecture organised by Mechanical Dept.	3 rd week of September, 2022	
10	Drawing competition on the occasion of World AIDS Day by the NSS unit	1 st week of December, 2022	
11	A sensitization workshop on "Implementation of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013" by the Internal Complaints Committee(ICC)	1 st week of December, 2022	
12	Continuous Assessment 3(CA3)(In the form of Class Test)	As per university directive	October 17, 2022 to October 20, 2022
13	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	As per university directive	November 9, 2022 to November 12, 2022
14	Pre-Examination activities (Form fill-up etc.)	November 16, 2022 to November 24, 2022	November 16, 2022 to November 24, 2022
15	Practical, Sessional and Viva-Voce examinations	November 25, 2022 to November 30, 2022	November 25, 2022 to November 30, 2022
16	Marks submission for Practical, Sessional and Viva-Voce exams	December 1, 2022 to December 5, 2022	December 1, 2022 to December 5, 2022
17	Theory Examinations	December 2, 2022 to December 24, 2022	December 2, 2022 to December 24, 2022
18	Inter Semester Break	December 25, 2022 to January 1, 2023	December 25, 2022 to January 1, 2023
19	Publication of Result	Results will be announced in the Univ. website	

During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.



Sd/-: 4/02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.

Announcement regarding Special Trainings will be available in the College website/web portal in due course

Announcement regarding other activities of University/ College will be available in the University website/College website in due course

Sd/- H/ 02.07.22





HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Odd Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
July 2022					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
Teaching Days: 20							
August 2022	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
Teaching Days: 20							
September 2022				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
Teaching Days: 21							
October 2022	31					1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
Teaching Days: 12							
November 2022		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				
Teaching Days: 19							
December 2022				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	
Teaching Days: 17							



Sd/- L/L, 09.07.22



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE


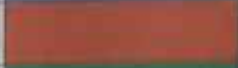

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	



S.D. 44 02.07.22

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2023 – June 2023		
Events		For 2 nd , 4 th , 6 th & 8 th Semester
1	Commencement of Academic Programme	January 2, 2023
2	Enrolment of students	January 4, 2023 to January 12, 2023
3	Annual Cultural Fest, UTKARSHA 2023	2 nd week of January, 2023
4	Annual Sports Meet	January 14, 2023
5	Continuous Assessment 1(CA1)(In the form of Power Point Presentation)	February 1, 2023 to February 4, 2023
6	A seminar on "Embedded Systems and its Applications" by Electronics & Communications Engineering Dept.	4 th week of February, 2023
7	A Poster Design Competition on the occasion of International Women's Day by the Women's Cell	March 8, 2023
8	Continuous Assessment 2(CA2)(In the form of Report Writing) & Continuous Assessment for Practical 1(PCA 1)	March 1, 2023 to March 4, 2023
9	Technical Fest TechHetc	3 rd week of March, 2023
10	A 3-Day workshop on "Advanced Surveying Using DGPS and total Station" by Civil Engineering Dept.	Last week of March, 2023
11	Continuous Assessment 3(CA3)(In the form of Class Test)	April 1, 2023 to April 4, 2023
12	A National Conference on "Emerging Technologies in Computer Science and Electronics and Communications" jointly by Computer Science Engineering & Electronics and Communication Depts.	1 st week of April 2023
13	A Blood Donation Camp by NSS unit in collaboration with the Students Health Home, North-Hooghly Regional Centre	3 rd week of April, 2023
14	Examination of the Spoken Tutorial Program	Last week of April, 2023
15	A National Conference on "Recent Trends in Electrical and Mechanical Engineering" jointly by Electrical Engineering & Mechanical Engineering Depts.	Last week of April, 2023
16	Continuous Assessment 4(CA4)(In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2(PCA 2)	May 1, 2023 to May 4, 2023
17	Pre-Examination activities (Form fill-up etc.)	May 8, 2023 to May 16, 2023
18	Practical, Sessional and Viva-Voce examinations	May 22, 2023 to May 27, 2023
19	Marks submission for Practical, Sessional and Viva-Voce exams	May 28, 2023 to May 30, 2023
20	Theory Examinations	June 1, 2023 to June 20, 2023
21	Inter Semester Break	Would be notified later
22	Publication of Result	Results will be announced in the Univ. website
23	Last date of reporting on Mentoring (Phase I)	March 31, 2023



Sd/- 44 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

24	Last date of reporting on Mentoring (Phase II)	May 31, 2023
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in July, 2023. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		



S.H.L. 44, 02.07.22



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

Teaching Days in Even Semester of Academic Year 2022-2023

M/D	Mon	Tue	Wed	Thu	Fri	Sat	Sun
January 2023	30	31					1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
Teaching Days: 18							
February 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28					
Teaching Days: 17							
March 2023			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
Teaching Days: 21							
April 2023						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
Teaching Days: 15							
May 2023	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
Teaching Days: 20							
June 2023				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
Teaching Days: 21							



Sd/- 44, 02.07.22



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE


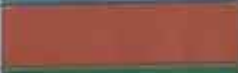

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2022-2023

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.

Colour Representation:

TEACHING DAYS	
OFF DAYS / HOLY DAYS	
NO TEACHING DAYS	

S.P.L. L.H. 02.07.22

Dr. Smitadhi Ganguly

Principal in-Charge



Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): August 2021 – January 2022			
Events		For Ensuring New Batch	For Continuing Batch
1	Commencement of University Registration process online for newly admitted students	August 25, 2021	N.A.
2	Teachers' Day Celebration (Virtual mode)	September 5, 2021	
3	TECHete 2k21 (Annual Technical Festival) (Virtual mode)	2 nd week of September, 2021	
4	Admission activities (for ensuing new students) to be completed by	September 15, 2021	N.A.
5	Commencement of Academic Programme	September 15, 2021	August 31, 2021
6	Orientation program & Fresher's welcome	September 22, 2021	N.A.
7	53rd NSS Day Celebration through Webinar	September 24, 2021	
8	Enrolment of students (for odd semesters)	October 1, 2021 to October 7, 2021	September 1, 2021 to September 10, 2021
9	Gandhiji's Birth Day Celebration(Virtual mode)	October 2, 2021	
10	Last date of continuous evaluation (Phase I)	N.A.	October 4, 2021
11	Induction Programme for newly admitted students	October 23, 2021	N.A.
12	Registration activities (for newly admitted students for the session 2021-22) will be completed by	October 25, 2021	N.A.
13	National Level Entrepreneurship Awareness Programme	Last week of October, 2021	
14	Swachh Bharat Activity in collaboration with MAKAUT NSS Unit (NSS)	Last week of October, 2021	
15	Last date of continuous evaluation (Phase II)	November 4, 2021	
16	SWACHHTA PAKHWADA – Azadi Ka Amrit Mahotsav celebration	December 1, 2021 to December 13, 2021	
17	Last date of continuous evaluation (Phase III)	December 4, 2021	
18	Last date of continuous evaluation (Phase IV)	January 5, 2022	
19	Pre-Examination activities (Form fill-up etc.)	January 6, 2022 to January 14, 2022	
20	Practical Examinations & Viva-Voce	January 15, 2022 to January 25, 2022	
21	Theory Examinations	January 17, 2022 to January 29, 2022	
22	Online Essay Competition (NSS)	Last week of January, 2022	
23	National Girl Child Day Celebration (NSS)	January 24, 2022	
24	73rd Republic Day Celebration (NSS)	January 26, 2022	
25	Alumni Meet	January 30, 2022	
26	Inter Semester Break	To be announced later	
27	Publication of Result	Results will be announced in the University website	
28	Last date of reporting on Mentoring (Phase I)	November 30, 2021	
29	Last date of reporting on Mentoring (Phase II)	January 31, 2022	
During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in March, 2021. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Signature and date: 24.08.21



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. D. L. Ganguly 24.08.21

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpatl, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2021-2022

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): February 2022 – June 2022		
Events		For Continuing Batches
1	Commencement of Academic Programme	February 1, 2022
2	Enrolment of students (for each semester)	February 1, 2022 to February 10, 2022
3	International Matribhasha Diwas Celebration (NSS)	February 21, 2022
4	Last date of continuous evaluation (Phase I)	March 4, 2022
5	International Women's day celebration	March 8, 2022
6	Webinar (Organized by NSS) in Google meet	2 nd week of March, 2022
7	Annual Cultural Festival, UTKARSHA 2022	Last week of March, 2022
8	Last date of continuous evaluation (Phase II)	April 4, 2022
9	Blood Donation Camp (NSS)	3 rd week of April, 2022
10	Last date of continuous evaluation (Phase III)	May 4, 2022
11	Last date of continuous evaluation (Phase IV)	June 4, 2022
12	Pre-Examination activities (Form fill-up etc.)	June 5, 2022 to June 18, 2022
13	Practical Examinations & Viva-Voce	June 20, 2022 to June 30, 2022
14	Theory Examinations	June 20, 2022 to June 30, 2022
15	The International Yoga Day Celebration (NSS)	June 21, 2022
16	Inter Semester Break (Summer)	Will be published later
17	Publication of Result (Final Semester)	Results will be announced in the University website in July, 2022
18	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2022
19	Last date of reporting on Mentoring (Phase I)	30th April, 2022
20	Last date of reporting on Mentoring (Phase II)	30th June, 2022
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2022. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



S. S. Ganguly 21.08.23
Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hoochly Engineering & Technology College
Vivekananda Road, Pipulpatl, Hooghly.



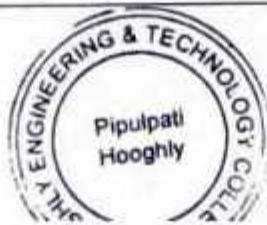
HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): November 2020 – March 2021			
Events		For Ensuing New Batch	For Continuing Batch
1	Admission activities (for ensuing new students) to be completed by	December, 2020	N.A.
2	Commencement of University Registration process online for newly admitted students	2 nd week of January, 2021	N.A.
3	Commencement of Academic Programme	3 rd week of January, 2021	1 st week of November, 2020
4	Induction Programme for newly admitted students	2 nd week of January, 2021 (Virtual Mode)	N.A.
5	Registration activities (for ensuing newly admitted students for the session 2020-21) will be completed by	3 rd week of January, 2021	N.A.
6	Republic Day Celebration	January 26, 2021 (Virtual Mode)	
7	Enrolment of students	Last week of January, 2021	Last week of November, 2020 (Except Lateral entries)
8	Alumni Meet	January 31, 2021 (Virtual Mode)	
9	Last date of Continuous Assessment (CA) I	Last week of January, 2021	
10	Last date of Continuous Assessment (CA) II	1 st week of February, 2021	
11	Practical Examinations & Viva-Voce (PCA I)	Last week of February, 2021	
12	Last date of Continuous Assessment (CA) III	Last week of February, 2021	
13	Last date of Continuous Assessment (CA) IV	2 nd week of March, 2021	
14	Practical Examinations & Viva-Voce (PCA II)	3 rd week of March, 2021	
15	Theory Examinations	Last week of March, 2021 (Online Mode)	
16	Inter Semester Break	Notice will be published later	
17	Publication of Result	Results will be announced in the Univ. website	
18	Last date of reporting on Mentoring	2 nd week of March, 2021	
During Inter-Semester-Break, Practical Training (where applicable) may be conducted.			
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			



Avijit Maity
03/11/2020



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020

Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103
Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2020-2021

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): April 2021 – July 2021		
Events		For Continuing Batches
1	Commencement of Academic Programme	1 st week of April, 2021
2	Enrolment of students (for each semester)	April 20, 2021 to April 24, 2021
3	Last date of Continuous Assessment (CA) I	April 28, 2021 to May 3, 2021
4	Swachh Bharat Activity (NSS)	2 nd week of May, 2021 (Virtual Mode)
5	Last date of Continuous Assessment (CA) II	May 27, 2021 to May 31, 2021
6	Practical Examinations & Viva-Voce (PCA I)	May 27, 2021 to May 31, 2021
7	Last date of Continuous Assessment (CA) III	June 25, 2021 to June 30, 2021
8	Last date of Continuous Assessment (CA) IV	July 21, 2021 to July 24, 2021
9	Practical Examinations & Viva-Voce (PCA II)	July 21, 2021 to July 24, 2021
10	Theory Examinations	July, 2021
11	Semester Break	Notice will be published later
12	Publication of Result (Final Semester)	Results will be announced in the University website
13	Publication of Result (Other than Final Semester)	Results will be announced in the University website
14	Last date of reporting on Mentoring	Last week of June, 2021
During Inter-Semester-Break, Practical Training (<i>where applicable</i>) may be conducted.		
Details of separate Supplementary Examinations for final year student will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

- ❖ The respective SPOC (Single Points of Contact) is responsible to upload documents related to MOOCs & MAR activities to the University portal from time to time throughout the semester.
- ❖ The calendar is prepared on the basis of information and guidelines of our affiliating University MAKAUT, West Bengal and the college. It may change as and when required based on the instruction / requirements of the university and the college.



Avijit Maity 03/11/2020

Dr. Avijit Maity
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2019 – December 2019			
Events		For Ensuing New Batch	For Continuing Batches
1	Commencement of University Registration process online for newly admitted students	July 22, 2019	N.A.
2	Admission activities (for ensuing new students) to be completed by	July 31, 2019	N.A.
3	Commencement of Academic Programme	August 1, 2019, Orientation Programme	July 15, 2019
4	Induction Programme for newly admitted students	August 1 to 21, 2019	N.A.
5	Registration activities (for newly admitted students for the session 2019-20) will be completed by	August 25, 2019	N.A.
6	Enrolment of students (for every semester)	August 14, 2019 to August 30, 2019	
7	Independence Day Celebration	August 15, 2019	
8	Last date of continuous evaluation (Phase I)	August 31, 2019	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2019	
10	Blood Donation Camp (NSS)	3 rd week of September, 2019	
11	Last date of continuous evaluation (Phase II)	September 30, 2019	
12	Last date of reporting on Mentoring (Phase I)	September 30, 2019	
13	Celebration of Gandhi Birthday (Workshop on Solar Lantern)	October 2, 2019	
14	One day Workshop/Seminar (Organized by CSE Dept)	4 th week of October, 2019	
15	Last date of continuous evaluation (Phase III)	October 31, 2019	
16	Entrepreneurship Awareness Programme	1 st week of November, 2019	
17	Last date of continuous evaluation (Phase IV)	November 30, 2019	
18	Practical Examinations & Viva-Voce	November 22 to 30, 2019	
19	Programme on AIDS Awareness (NSS)	December 1, 2019	
20	Theory Examinations	December 4 to 21, 2019	
21	Inter-Semester Break	December 22, 2019 to January 12, 2020	
22	Publication of Result	Results will be announced in the Univ. website in February 2020	
23	Last date of reporting on Mentoring (Phase II)	December 30, 2019	

During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.

Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.

Announcement regarding Special Trainings will be available in the College website/web portal in due course

Announcement regarding other activities of University/ College will be available in the University website/College website in due course

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya
Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2019-20

Even Semester (2 nd , 4 th , 6 th & 8 th Semesters): January 2020 – June 2020		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 13, 2020
2	Annual Sports Meet	3 rd week of January, 2020
3	One day Workshop/Seminar (Organized by ECE Dept)	3 rd week of January, 2020
4	Enrolment of students (for every semester)	January 20, 2020 to January 31, 2020
5	Republic Day Celebration/ Alumni Meet	26 January, 2020 (Last Sunday of January)
6	Last date of continuous evaluation (Phase I)	January 31, 2020
7	Annual Cultural Festival	1 st week of February, 2020
8	Cricket Tournament	2 nd week of February, 2020
9	Badminton Tournament (For Girls)	3 rd week of February, 2020
10	Last date of continuous evaluation (Phase II)	February 28, 2020
11	TECHetc 2k20 (Annual Technical festival)	2 nd week of March, 2020
12	Swaccha Bharat Activity (NSS)	3 rd week of March, 2020
13	Football Tournament	3 rd week of March, 2020
14	Last date of continuous evaluation (Phase III)	March 31, 2020
15	Last date of reporting on Mentoring (Phase I)	March 31, 2020
16	One day Workshop/Seminar (Organized by EE Dept)	2 nd week of April, 2020
17	Last date of continuous evaluation (Phase IV)	April 30, 2020
18	Workshop/Seminar (In Collaboration With HETCAA)	1 st week of May, 2020
19	Practical Examinations & Viva-Voce	May 11 to May 16, 2020
20	Theory Examinations	May 22 to June 9, 2020
21	Inter-Semester Break (Summer)	June 10 to July 14, 2020
22	Publication of Result (Final Semester)	Results will be announced in the University website in July 2020
23	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2020
24	Last date of reporting on Mentoring (Phase II)	June 30, 2020
During Inter-Semester Break (Summer), Practical Training (where applicable) may be conducted.		
Separate Supplementary Examinations for final year student will be held tentatively in September, 2019. Details will be available in the University website in due course.		
Announcement regarding Special Trainings will be available in the College website/web portal in due course		
Announcement regarding other activities of University/ College will be available in the University website/College website in due course		

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharyya
09/07/19

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya

Principal

Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

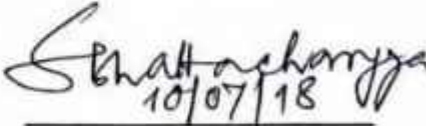
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Odd Semester (1 st , 3 rd , 5 th & 7 th Semesters): July 2018 – December 2018			
Events		For Ensuring New Batch	For Continuing Batch
1	University-Registration process for ensuing newly admitted students process will be started on	June 11, 2018	N.A.
2	Admission activities (<i>for ensuing new students</i>) will be completed by	July 31, 2018	N.A.
3	Commencement of Academic Programme	August 1, 2018 Orientation Programme	July 13, 2018
4	Induction Programme for newly admitted students	August 1 to 21, 2018	N.A.
5	Registration activities (<i>for ensuing newly admitted students for the session 2018-19</i>) will be completed by	September 10, 2018	N.A.
7	Independence Day Celebration	August 15, 2018	
9	Thalassaemia Awareness and Detection Camp (NSS)	1 st week of September, 2018	
10	First Test Slot	September 14 to 20, 2018	
11	Annual Football Tournament	2 nd & 3 rd week of October, 2018	
12	Entrepreneurship Awareness Programme	1 st week of November, 2018	
13	Second Test Slot	November 14 to 20, 2018	
14	Practical Examinations & Viva-Voce	November 22 to 30, 2018	
15	Theory Examinations	December 4 to 21, 2018	
16	Inter Semester Break	December 24, 2018 to January 12, 2019	
17	Publication of Result	Results will be announced in the University website in February 2019.	
18	Last date of reporting on Mentoring (Phase I)	30 th September 2019	
19	Last date of reporting on Mentoring (Phase II)	30 th December 2019	
During Inter-Semester-Break (Summer), Practical Training (<i>where applicable</i>) may be conducted.			
Separate Supplementary Examination for final year student will be held on September, 2018. Details will be available in the University website in due course.			
Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.			

* Dates of the events are subject to change in accordance with the situation.


10/07/18

Dr. S. Bhattacharyya

Principal, HETC



Prof. (Dr.) Sumanta Bhattacharyya
Principal
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2018-19

Even Semester (2 nd , 4 th , 6 th & 8 th semesters): January 2019 – June 2019		
Events		For Continuing Batches
1	Commencement of Academic Programme	January 14, 2019
2	Enrolment of students (for each semester)	January 20, 2020 to January 31, 2020
3	Annual Cultural Festival	4 th week of January, 2019
4	Annual Sports Meet	4 th week of January, 2019
5	Republic Day Celebration	January 26, 2019
6	Annual Alumni Meet	Last Sunday of January, 2019 (January 27, 2019)
7	Cricket Tournament	2 nd , 3 rd & 4 th Week of February, 2019
8	Badminton Tournament (For Girls)	1 st week of February, 2019
9	Panel Discussion by Magazine Committee	3 rd week of February, 2019
10	First Test Slot	2 nd week of March, 2019
11	TECHetc 2k19 (Annual Technical festival)	3 rd week of March, 2019
12	One Day Seminar by Student Chapter of IE(I)	4 th week of March, 2019
13	Seminar by INTERNSALA	1 st week of April, 2019
14	Second Test Slot	4 th week of April, 2019
15	First Improvement Test Slot	1 st week of May, 2019
16	Second Improvement Test Slot	2 nd week of May, 2019
17	Practical Examinations & Viva-Voce	May 15 to May 23, 2019
18	Theory Examinations	May 28 to June 17, 2019
19	Inter Semester Break (Summer)	June 18 to July 14, 2019
20	Publication of Result (Final Semester)	Results will be announced in the University website in July 2019
21	Publication of Result (Other than Final Semester)	Results will be announced in the University website in August 2019

During Inter-Semester-Break (Summer), Practical Training (*where applicable*) may be conducted.

Separate Supplementary Examination for final year student will be held on September, 2018.

Details will be available in the University website in due course.

Announcement regarding Registration & Examinations activities, will be available in the University websites in due course.

* Dates of the events are subject to change in accordance with the situation.



S. Bhattacharya
18/07/18

Dr. S. Bhattacharyya

Principal, HETC

Prof. (Dr.) Sumanta Bhattacharyya
Principal

Hooghly Engineering & Technology College

MECHANICAL ENGINEERING

VISION

The Department strives to be recognized as a centre of excellence in the field of Mechanical Engineering by imparting high class education and research facilities with well experienced faculty and staff members of proven ability and administrative skills leading to professionally competent and broadly educated mechanical engineers having the capability to design, plan, administer and manage the latest technologies in the field of mechanical engineering and to face future challenges.

MISSION

- Prepare effective and responsible Mechanical Engineers for global requirements by providing quality education.
- Promote the intellectual growth of the students by integrating academic programs with practical knowledge and co-curricular activities.
- Respond effectively to meet the needs of the industry and changing world.
- Conduct basic and applied research to motivate and inspire students to take up higher studies and research.
- Provide consultancy to the neighborhood and cultivate the spirit of entrepreneurship

88
H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

88
Principal in Charge
Hooghly Engineering & Technology College
Ananda Road, Pitulpali, Hooghly.

List of Text & Reference Books

Strength of Materials ME-302 & PC-ME403

Fundamentals of Strength of Materials by Nag & Chanda, Wiley India

6. Strength of Materials by R. Subramanian, 2nd Ed., Oxford Univ. Press

ME-402 Mechanisms & PC-ME 503 Kinematics and Theory of Machines

Theory of Machines, V.P.Singh, Dhanpat Rai & Co

Theory of Machines – S S Rattan, Tata McGraw Hill

Theory of Mechanisms & Machines – A.Ghosh & A.K.Mallik, Affiliated East-West Publication A.

Heat Transfer ME-502 & PC-ME501 Heat Transfer

P.K. Nag, Heat & Mass Transfer, TMH.

Kreith, Principles of Heat Transfer, Cengage learning.

N.V. Suryanarayana, Engineering Heat Transfer, Penram International.

ME-601 & PE ME 601A IC Engines & Gas Turbines

V. Ganesan, Internal Combustion Engines, The McGraw-Hill Companies.

2. M.L. Mathur and R.P. Sharma, A course in Internal Combustion Engines, Dhanpat Rai & Sons.

PE ME 802B & ME 701 Power Plant Engineering

P.K. Nag, "Power plant Engineering," Tata McGraw - Hill.

2. Arora and Domkundwar, "A course in Power plant Engineering" Dhanpat Rai & Sons.

ME703B Renewable Energy Systems & OE ME 701D Non-Conventional Energy Resources

Non-Conventional Energy Resources- B.H. Khan, T M H, 2010.

Non-Conventional Energy Sources- G.D. Rai, Khanna Publishers.

ME705C

Operations Research

Kanti Swarup, P.K. Gupta and Man Mohan, Operations Research, Sultan Chand & Sons, New Delhi.

F.S. Hillier and G.J. Lieberman, Introduction to Operations Research, The McGraw Hill Companies.

ME802D

Quality & Reliability Engineering

S. K. Mondal –Total Quality Management Principles and Practice –Vikas Publishing House Pvt. Ltd.

Bhadury and Basu- Terotechnology: Reliability Engineering and Maintenance Management, Asian Books Pvt. Ltd.

89
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Mechanical Engineering Department

COURSE OUT COMES OF KINEMATICS AND THEORY OF MACHINES (PC ME 503)

Subject Code: PC-ME503	Category: Professional Core courses	Course Outcomes
Subject Name: Kinematics and Theory of Machines	Semester: Fifth	After completing this course, the students 1. can design various types of linkage mechanisms for obtaining specific motion and analyse them for optimal functioning. 2. Compute the unbalanced forces on reciprocating and rotating masses. 3. can understand the motion of linked mechanisms in terms of the displacement, velocity and acceleration at any point in a rigid link. 4. can be able to design some linkage mechanisms and cam systems to generate specified output motion. 5. can understand the kinematics of gear trains and the control mechanisms of governor and gyroscope with their applications.
L-T-P: 3-1-0	Credit: 4	
Pre-Requisites: Engineering Mechanics		

A. Ghosh

88

H.O.D.
Mechanical Engineering
HooGly Engineering & Technology College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Mechanical Engineering Department

COURSE OUT COMES OF STRENGTH OF MATERIALS (PC-ME 403)

Subject Code: PC-ME403	Category: Professional Core courses	Course Outcomes
Subject Name: Strength of Materials	Semester: Fourth	After completing this course, the students should be able to <ol style="list-style-type: none">1. recognise various types of loads applied on machine components of simple geometry and understand the nature of internal stresses that will develop within the components.2. evaluate the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading.3. evaluate principal stresses, maximum shearing stress, and the stresses acting on a structural member. Understand Mohr's circle and be able to determine principal stresses.4. evaluate the deflections and rotations produced by the three fundamental types of loads: axial, torsional, and flexural.5. analyse slenderness ratio, long columns and short columns subjected to axial loads, and Euler buckling load calculation
L-T-P: 3-1-0	Credit: 4	
Pre-Requisites: No-prerequisite		

A. Ghosh

89

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

- 1. Engineering knowledge:** Apply the knowledge of Mathematics, Science, Engineering fundamentals and as engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions using first principals id mathematics, natural science and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal and environment considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
- 5. Modern tools usage:** Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

89

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

89
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipitban, Hooghly.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognizing the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

29

29

Program Specific Outcomes (PSOs)

- PSO 1:* To excel in professional career & higher education by acquiring knowledge in mathematical computing and engineering principles.
- PSO 2:* Analyze real life problem in developing economically feasible and socially acceptable solutions of engineering problems.
- PSO 3:* To excel in professionalism, ethical and moral conduct and interpersonal skills and communication adaptable to current trends in technology as well as change in technology.

88
H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

88
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpat, Hooghly.

CO-PO-PSO Mapping and Attainment for Mechanical Engineering

Name of the Course & Course Code	Course Outcomes		Programme Outcomes (PC-ME403)										Programme Specific Outcomes				
	Course Outcome with Course Code	Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Strength of Materials PCME 403	PC ME403-CO1	Recognize various types of loads applied on machine components of simple geometry and understand the nature of internal stresses that will develop within the components.	2	1	3	1	1	0	0	1	2	1	1	2	1	2	2
	PC ME403-CO2	Evaluate the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading.	1	2	2	2	2	2	1	2	1	2	0	1	2	1	1
	PC ME403-CO3	Evaluate principal stresses, maximum shearing stress, and the stresses acting on a structural member. Mohr's circle and be able to determine principal stresses	2	2	1	1	2	1	0	1	0	1	0	3	2	1	0
	PC ME403-CO4	Evaluate the deflections and rotations produced by the three fundamental types of loads: axial, torsional, and flexural.	1	1	1	2	1	1	1	0	0	0	0	1	2	0	1
	PC ME403-CO5	Analyze slenderness ratio, long columns and short columns subjected to axial loads, and Euler buckling load calculation	3	1	2	1	3	0	1	0	1	1	1	2	2	3	2
	Average		1.80	1.40	1.80	1.40	1.80	0.80	0.80	0.80	1.00	0.40	1.80	1.80	1.40	1.20	

Academic year: 2018-19; Final result: O: 0, E: 2, A: 4, B: 9, C: 15, D: 25, F: 1.

S. S. S. S.

88/10.09.23

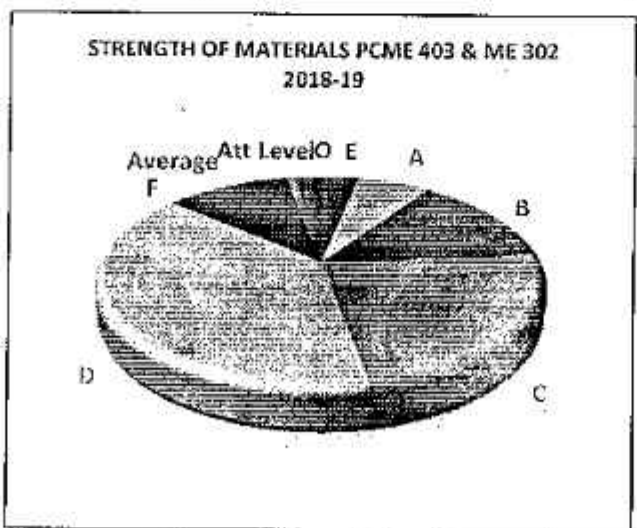
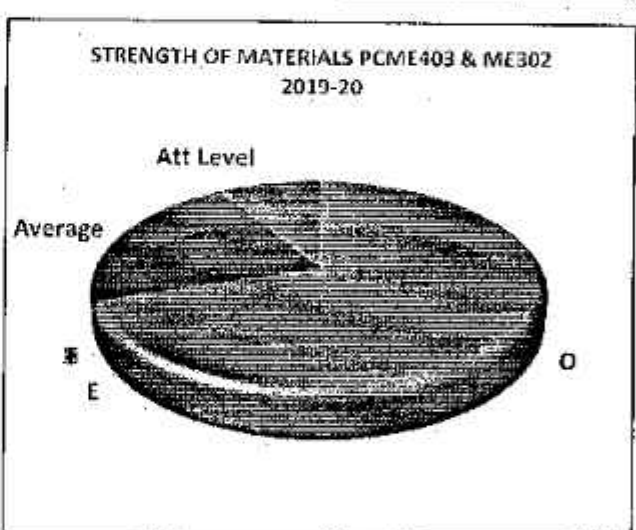
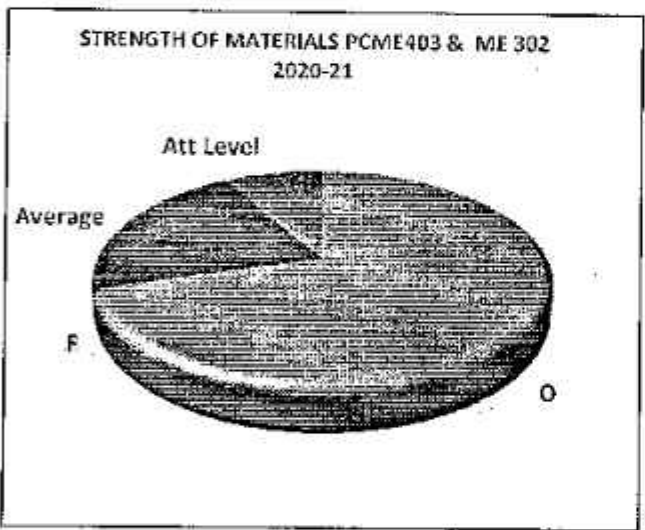
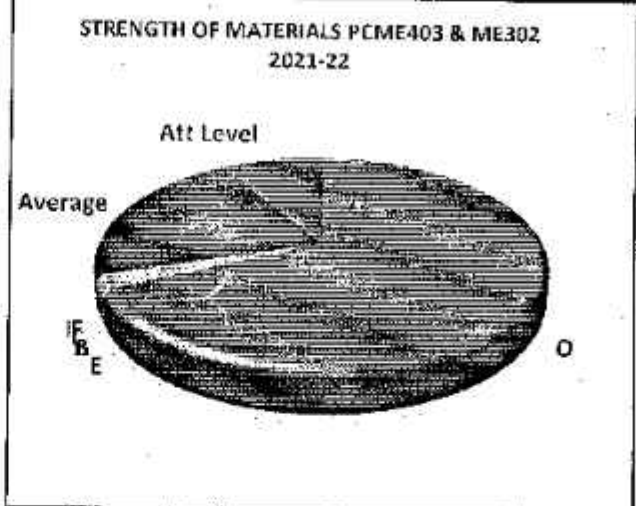
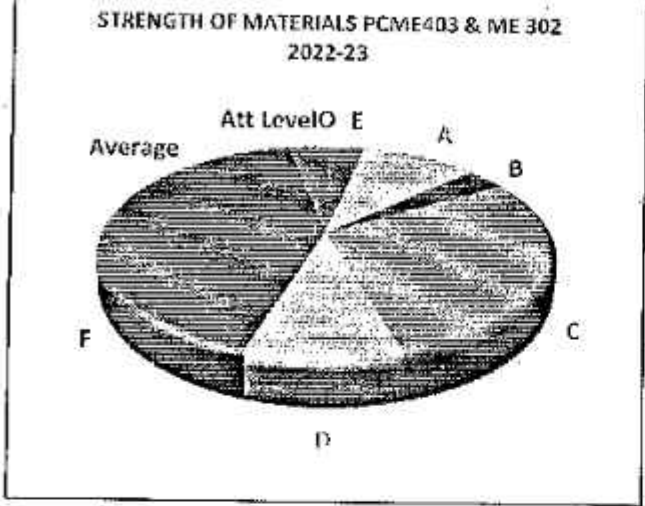
H.O.D.
Mechanical Engineering
Branch Engineering & Technology Centers

	Average Grade: $(2 \times 9 + 4 \times 8 + 9 \times 7 + 15 \times 6 + 25 \times 5 + 2 \times 1) / 56 = 5.89$ Course attainment level: 2														
Attainment	0.9	0.7	0.9	0.7	0.9	0.4	0.3	0.4	0.4	0.5	0.2	0.9	0.9	0.7	0.6
	Academic year: 2022-23: Final result: O: 0, E: 1, A: 3, B: 1, C: 9, D: 3, F: 8.														
	Average grade: $(0 \times 10 + 1 \times 9 + 3 \times 8 + 1 \times 7 + 6 \times 9 + 3 \times 5 + 8 \times 2) / 25 = 5$; Course attainment level: 1														
Attainment	0.45	0.35	0.45	0.35	0.45	0.2	0.15	0.2	0.2	0.25	0.1	0.45	0.45	0.35	0.3
	Academic year: 2021-22: Final result: O: 29, E: 2, A: 0, B: 0, C: 1, D: 0, F: 0.														
	Average grade: $(29 \times 10 + 2 \times 9 + 0 \times 8 + 7 \times 0 + 6 \times 1) / 32 = 9.81$; Course attainment level: 4														
Attainment	1.8	1.4	1.8	1.4	1.8	0.8	0.6	0.8	0.8	1	0.4	1.8	1.8	1.4	1.2
	Academic year: 2020-21: Final result: O: 33, E: 0, A: 0, B: 0, C: 0, D: 0, F: 0.														
	Average grade: $(33 \times 10 + 0 \times 9 + 0 \times 0 + 7 \times 0 + 6 \times 0) / 33 = 10$; Course attainment level: 4														
Attainment	1.8	1.4	1.8	1.4	1.8	0.8	0.6	0.8	0.8	1	0.4	1.8	1.8	1.4	1.2
	Academic year: 2019-20: Final result: O: 28, E: 4, A: 0, B: 0, C: 0, D: 0, F: 0.														
	Average grade: $(28 \times 10 + 4 \times 9 + 8 \times 0 + 7 \times 0 + 6 \times 0) / 32 = 9.875$; Course attainment level: 4														
Attainment	1.8	1.4	1.8	1.4	1.8	0.8	0.6	0.8	0.8	1	0.4	1.8	1.8	1.4	1.2

Handwritten signature
 8/11/2023

Mechanical Engineering Department

Grade	O	E	A	B	C	D	F	Average	Att Level
2022-23	0	1	3	1	9	3	8	5	1
2021-22	29	2	0	0	1	0	0	9.81	4
2020-21	33	0	0	0	0	0	0	10	4
2019-20	28	4	0	0	0	0	0	9.875	4
2018-19	0	2	4	9	15	25	1	5.89	2



88 14.09.23

H.O.D.
Mechanical Engineering
Ronghly Engineering & Technology College

S. Ghosh
14/9/23
Ronghly Engineering & Technology College
Mechanical Engineering
Ronghly Engineering & Technology College
Ronghly Engineering & Technology College

SAMPLE RULE FOR COURSE ATTAINMENT LEVEL

Correlation levels 1, 2, 3 and 4 as defined below:

Level 1: Low

Level 2: Medium

Level 3: High

Level 4: Very High

Attainment calculation of COs

Step 1: Find the weighted average marks from the published semester result for a course in terms of credit point.

Step 2: Calculate the attainment by using the following rule:

Attainment Level 1: If $4 \leq \text{Weighted average marks} \leq 5.5$

Attainment Level 2: If $5.5 < \text{Weighted average marks} \leq 7$

Attainment Level 3: If $7 < \text{Weighted average marks} \leq 8.5$

Attainment Level 4: If $8.5 < \text{Weighted average marks} \leq 10$

Attainment calculation of POs and PSOs

Step 1: Create the correlation table (with the correlated values 1-4 and '-' for no correlation) with

Step 2: Calculate the attainment value of POs and PSOs for a course in reference with obtained

Step 3: Consolidate the attainment values for all courses to obtain the final attainment value for

Example:

For Course 1 the details of the final result is:

Grade Point	Credit Point	No. of students
O	10	6
E	9	7
A	8	23
B	7	10
C	6	5
D	5	2
F	2	0
Total		53

Average marks = $(10 \times 6 + 9 \times 7 + 8 \times 23 + 7 \times 10 + 6 \times 5 + 5 \times 2) / 53 = 7.86$

So the course attainment level is 3

89

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



FIRST HOME ASSIGNMENT, 2021 (CA-II)

Paper Name: Kinematics and Theory of Machines

Discipline: ME

Paper Code: PC-ME 503

Semesters: 5th

Last Date of Submission: 30th Oct' 2021

Full Marks: 25

1. a) Determine the degrees of freedom of the linkage shown in fig 1. [5]

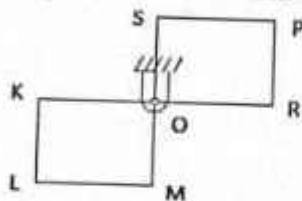


Fig.1

b) Determine the degrees of freedom of the mechanism in fig.2 with one of the links fixed. Also identify which links are binary and which are ternary.

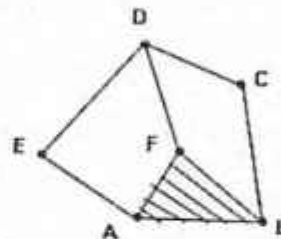
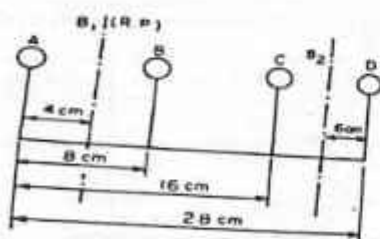


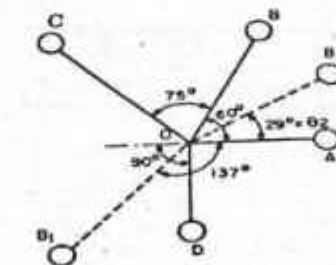
Fig.2

2. The lengths of the upper and lower arms of a porter governor are 20 cm and 25 cm respectively. Both the arms are pivoted on the axis of rotation. The central load is 150 N, the weight of each ball is 20 N and the friction of the sleeve together with the resistance of the operating gear is equivalent to a force of 30 N at the sleeve. If the limiting inclinations of the upper arms to the vertical are 30° and 40°, determine the range of speed of the governor. [10]

3. A rotating shaft carries four unbalanced masses 20 kg, 16 kg, 18 kg and 14 kg at radii 6 cm, 7 cm, 8 cm and 7 cm respectively. The locations and angular positions of revolving masses are shown in fig.3. The shaft is dynamically balanced by two masses, both located at 5 cm radii and located midway between A and B, and midway between mass C and D. Determine magnitude and angular positions of masses. [10]



(a) Position of planes



(b) Angular position of masses

Fig. 3

[Handwritten signature]

Faculty Name: Smitadhi Ganguly								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30 -1:20	1:20 -2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday	F. Mech & F.M		Machine Design	BREAK		Graphics Lab (Gr-B) (CSE)		
Wednesday	Design Practice II Lab (Gr A)				BREAK			
Thursday	F. Mech & F.M	Design Practice II (Gr B)			BREAK			
Friday	Machine Drawing II (Gr. B)			Machine Design	BREAK		F. Mech & F.M	
Saturday			Machine Design	BREAK	Graphics Lab (Gr) (CE+ME)			
Theory Load: 7			Practical Load: 19			Total Load: 26		

Dr. Smitadhi Ganguly

Faculty Name: Sandip Basu								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30 -1:20	1:20 -2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday			Materials Engg. (SDB)		BREAK	Training		
Wednesday	Machining & Machine Tools Lab (Gr B)			General Aptitude	Workshop (Gr B) (ECE)			
Thursday	M/C Principles & M/C Tools		Materials Engg. (SDB)		BREAK			
Friday					BREAK	M/C Principles & M/C Tools	Machining & Machine Tools	
Saturday	M/C Principles & M/C Tools			Materials Engg.	BREAK			
Theory Load: 7			Practical Load: 11			Total Load: 18		

Dr. Smitadhi Ganguly

Faculty Name: Shamik Ghosh								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30 -1:20	1:20 -2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday		Applied Thermo		Air Cond & Refrigeration	BREAK	Air Conditioning & Refrigeration		
Wednesday		Applied Thermo			BREAK	Air Conditioning & Refrigeration		
Thursday		Applied Thermo		Metrology & Instru.	BREAK	Prctice of Manufac. & System Lab (Gr. A+B)		
Friday		Air Cond & Refrigeration			BREAK			
Saturday	Metrology & Instru.			Air Cond & Refrigeration				
Theory Load: 11			Practical Load: 9			Total Load: 20		

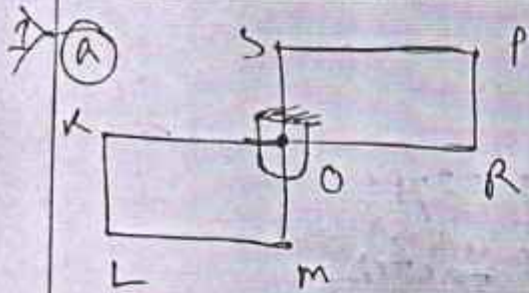
Dr. Smitadhi Ganguly

Faculty Name: Rajib Mandal								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30 -1:20	1:20 -2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday	Thermal Power (EE)				BREAK	Materials Handling		
Wednesday			Automobile Engg.	Materials Handling	BREAK	Thermal Power (EE)		
Thursday		Automobile Engg.			BREAK	Thermal Power (EE)		
Friday	Materials Handling	Thermal Power Lab (Gr B)			Workshop (Gr A)(Sec B)			
Saturday					BREAK	Thermal Power Lab (Gr A)		
Theory Load: 9			Practical Load: 11			Total Load: 20		

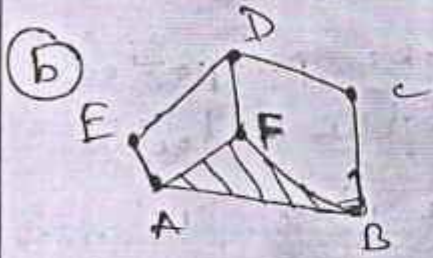
Dr. Smitadhi Ganguly

Faculty Name: Samir Ghosh								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30 -1:20	1:20 -2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday		IC Engine		Strength of Materials	BREAK	Dynamics of Machine Lab		
Wednesday	Strength of Materials			Quality & Reliability	BREAK	IC Engine	Dynamics of Machine Lab	

Re-print



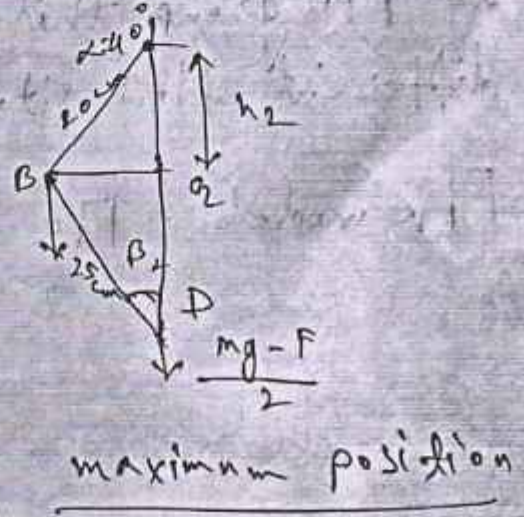
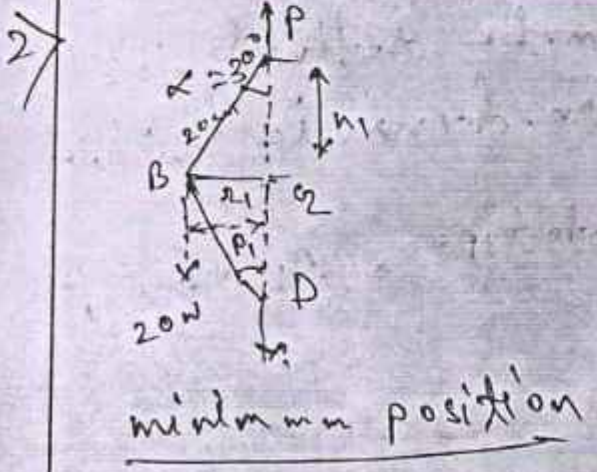
$$\begin{aligned}
 \text{DOF} &= 3(l-1) - 2j - h \\
 &= 3(4-1) - 2 \times 4 \\
 &= 15 - 14 \\
 &= 1
 \end{aligned}$$



$$\begin{aligned}
 \text{DOF} &= 3(l-1) - 2j - h \\
 &= 3(4-1) - 2 \times 4 \\
 &= 15 - 14 \\
 &= 1
 \end{aligned}$$

∴ The degrees of freedom of the mechanism is 1.

Joint A, E, F, C and B are binary joints.
Joint D is ternary joint.



S. Ghosh

②

Given :-

$$BP = 20 \text{ cm} = 0.2 \text{ m}$$

$$BD = 25 \text{ cm} = 0.25 \text{ m}$$

$$mg = 150 \text{ N}$$

$$mg = 20 \text{ N}$$

$$F = 30 \text{ N}$$

$$\alpha_1 = 30^\circ$$

$$\alpha_2 = 40^\circ$$

N_1 = minimum speed N_2 = maximum speed

minimum radius of rotation $B_1 = B_2 = BP \sin 30^\circ$

$$B_1 = B_2 = BP \cos 30^\circ = 0.2 \times 0.866 = 0.1732 \text{ m}$$

$$h_1 = PG = BP \cos 30^\circ = 0.2 \times 0.866 = 0.1732 \text{ m}$$

$$D_2 = \sqrt{(BD)^2 - (B_2)^2}$$

$$= \sqrt{(0.25)^2 - (0.1)^2} = 0.23 \text{ m}$$

$$\tan \beta_1 = \frac{B_2}{D_2} = \frac{0.1}{0.23} = 0.4348$$

$$\tan \alpha = \tan 30^\circ = 0.5774$$

$$\therefore \frac{2i}{\tan \alpha_1} = \frac{0.4348}{0.5774} = 0.753$$

When speed is minimum she moves downwards, so, friction force acts upwards

$$\therefore N_2 = \frac{mg + \left(\frac{\mu g - F}{2}\right)(1+2i)}{mg} \times \frac{89.5}{h_1}$$

$$= \frac{20 + \left(\frac{150-30}{2}\right)(1+0.753)}{20} \times \frac{895}{0.1732}$$

$\therefore N_1 = 179.84 \text{ DPM}$

maximum radius of rotation $r_2 = BG$

$= BP \sin 40^\circ = 0.2 \times 0.643$

$= 0.1286 \text{ m}$

$h_2 = PG = BP \cos 40^\circ = 0.2 \times 0.766 = 0.1532 \text{ m}$

$DG = \sqrt{(BP)^2 - (BG)^2} = \sqrt{(0.25)^2 - (0.1286)^2} = 0.21044 \text{ m}$

$\therefore \tan \beta_2 = \frac{BG}{DG} = \frac{0.1268}{0.2144} = 0.59$

and $\tan \alpha_2 = \tan 40^\circ = 0.839$

$\therefore Z_2 = \frac{\tan \beta_2}{\tan \alpha_2} = \frac{0.59}{0.839} = 0.704$

When sleeve moves upward, frictional force acts down w.o. rods

$$\therefore N_2 = \frac{mg + \left(\frac{W_2 + F}{2}\right)(1 + Z_2)}{mg} \times \frac{895}{h_2}$$

$$= \frac{20 + \left(\frac{150+30}{2}\right)(1+0.704)}{20} \times \frac{895}{0.1532}$$

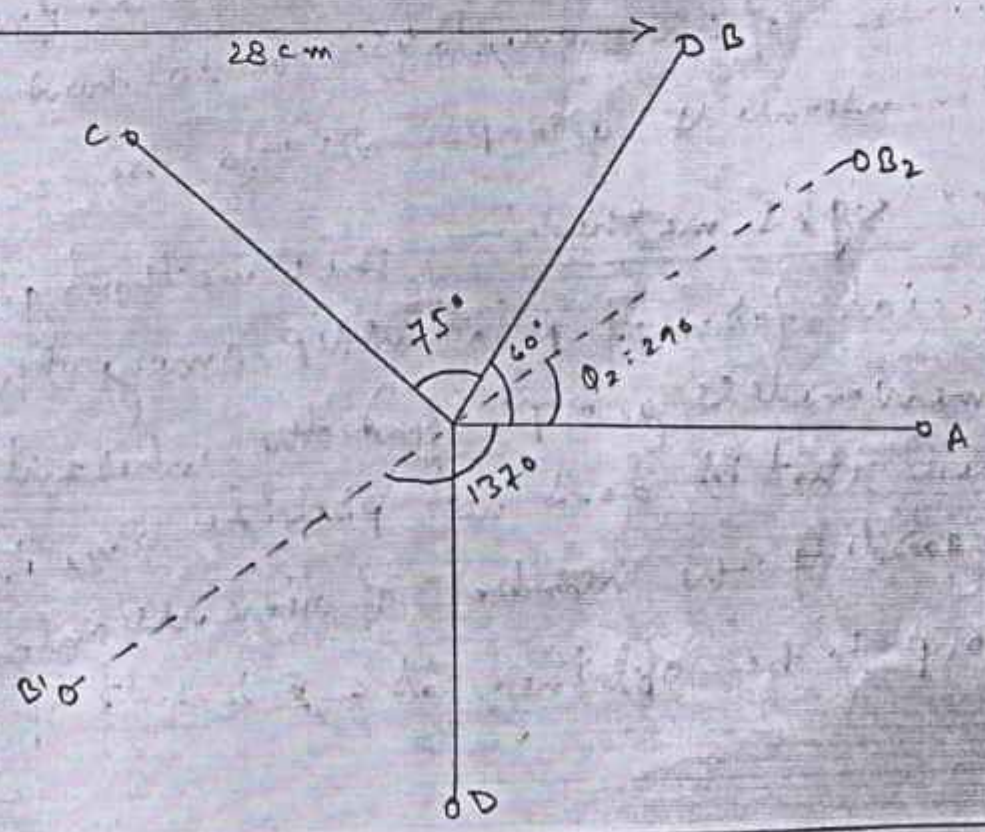
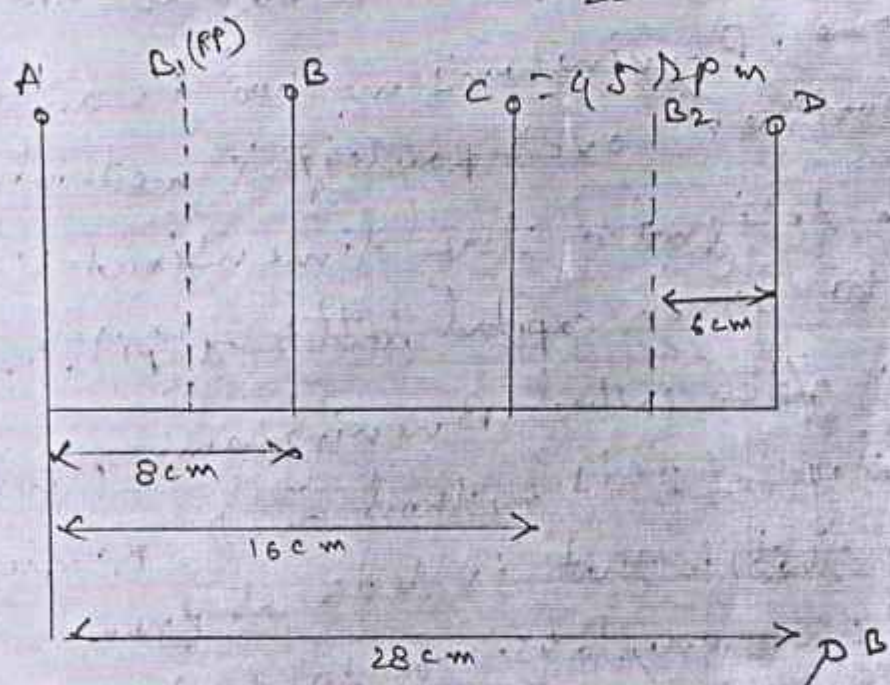
J. Khan

$\therefore N_2 = 224.97 \text{ rpm} \approx 225 \text{ rpm}$

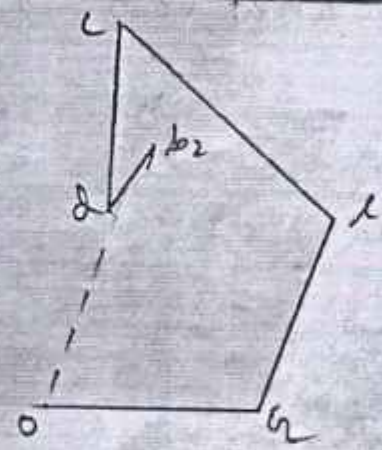
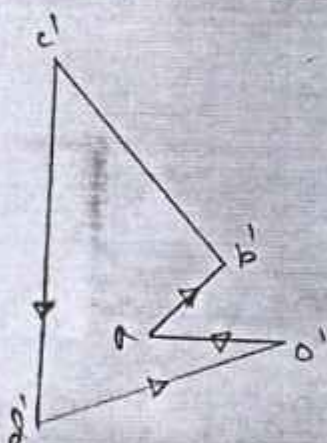
$N_1 = 179.89 \approx 180 \text{ rpm}$

$\therefore \text{Range of speed} = N_2 - N_1$
 $= 225 - 180$

33



Plane	Mass (m) kg	Radius (r) m	(m-r) kg-m	Distance from R.P. (z) m	m r z kg-m ²
A	20	0.06	1.20	-0.09	= 0.0480
B ₁	m _x	0.05	0.05m _x	0	0
B	16	0.07	1.12	0.04	0.0448
C	18	0.08	1.44	0.12	0.1728
B ₂	m _y	0.05	0.05m _y	0.18	0.009m _y
D	14	0.07	0.98	0.24	0.2352



$\therefore O'd' = 0.1875 \text{ kg-m}^2 = 0.009m_y$

$\therefore m_y = 20 \text{ kg}$

From the diagram, the angular position of m_y is 29° in anti-clockwise w.r.t mass m_a

$\therefore O'd_2 = 1.64 \text{ kg-m} = 0.05 m_x$

as, $m_x = 32.8 \text{ kg}$

From the diagram the angular position of m_x is 137° clockwise from m_a .

A. Ghosh

Dr. Smitadhi Ganguly

T.A. Name: Shantabrata Pal								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30 -1:20	1:20 -2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday					BREAK		Dynamics of Machine Lab	
Wednesday	Machining & Machine Tools Lab (Gr B)				BREAK		Dynamics of Machine Lab	
Thursday					BREAK			
Friday					BREAK		Machining & Machine Tools	
Saturday					BREAK			

Total Load: 12

Dr. Smitadhi Ganguly

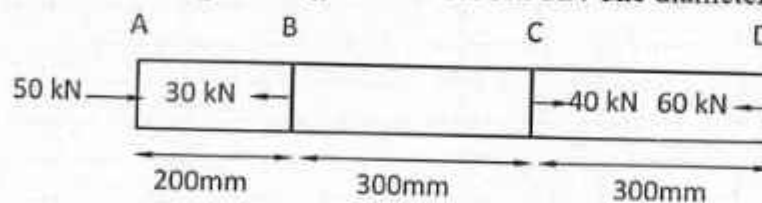
Hooghly Engineering & Technology College

Home Assignment (APRIL 2021)

Strength of Materials (PC-ME-403)

Full Marks-25

1. A solid cone of height 'h' and base diameter 'd' is suspended vertically. If W = total weight of the cone and E = Young's modulus of the cone material. Determine the elongation of the cone due to its self weight. [7]
2. A steel bar is subjected to loads as shown in fig. If $E = 200 \text{ kN/mm}^2$ for the bar material, determine the change in length of the bar ABCD. The diameter of the bar = 200 mm [10]



3. A brass rod 2 m long is fixed at both ends. If the thermal stress is not to exceed 76.5 MPa calculate the temperature through which the rod may be heated. Take $E = 90 \text{ GPa}$ and $\alpha = 17 \times 10^{-6} /\text{K}$. [8]

A. Ghosh

T.A. Name: Uttam Kumar Samanta								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday					BREAK			
Wednesday	Machining & Machine Tools Lab (Gr B)			BREAK	Workshop (Gr B) (Sec B)			
Thursday					BREAK	Practice of Manufac. & System Lab (Gr. A+B)		
Friday				BREAK	Workshop (Gr A) (Sec B)			
Saturday					BREAK			
Total Load: 16								

Dr. Smitadhi Ganguly

T.A. Name: Dipanwita Biswas								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday					BREAK		Dynamics of Machine Lab	
Wednesday					BREAK		Dynamics of Machine Lab	
Thursday						Practice of Manufac. & System Lab (Gr. A+B)		
Friday	Machine Drawing I (Gr. A+ B)							
Saturday				BREAK	Graphics Lab (Sec C) (CE+ME)			
Total Load: 17								

Dr. Smitadhi Ganguly

T.A. Name: Tathagata Mallick								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday				BREAK	Graphics Lab (Gr B) (CSE)			
Wednesday	Design Practice II (Gr A)				BREAK			
Thursday		Design Practice II (Gr B)				Graphics Lab (Gr A) (CSE)		
Friday	Machine Drawing I (Gr. A+ B)				BREAK			
Saturday					BREAK			
Total Load: 19								

Dr. Smitadhi Ganguly

T.A. Name: Saikat Banerjee								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday					BREAK			
Wednesday				BREAK	Workshop (Gr B) (Sec B)			
Thursday		IC Engine Lab (Gr A)			BREAK			
Friday		Thermal power Lab (Gr. B)				Workshop (Gr A) (Sec B)		
Saturday					BREAK	Thermal power Lab (Gr. A)		
Total Load: 19								

Dr. Smitadhi Ganguly

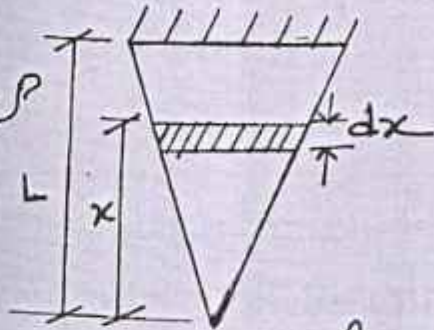
T.A. Name: Goutam Banerjee								
Day	10:00-10:50	10:50-11:40	11:40-12:30	12:30-1:20	1:20-2:10	2:10-3:00	3:00-3:50	3:50-4:40
Tuesday					BREAK		Air Conditioning & Refrigeratio	
Wednesday					BREAK		Air Conditioning & Refrigeratio	
Thursday		IC Engine Lab (Gr A)			BREAK			
Friday		Thermal power Lab (Gr. B)			BREAK		IC Engine Lab (Gr E)	
Saturday					BREAK	Thermal Power Lab (Gr A) (EE)		
Total Load: 18								

1. A solid cone of height 'h' and base diameter 'd' is suspended vertically. If W = total weight of the cone and E = Young's modulus of the cone material. Determine the elongation of the cone due to its self weight.

Ans - Total length = L

Mass per unit volume = ρ

$$\rho = \frac{m}{V}$$



Let's take an elementary area dx from (x) distance of the lower portion, at assume the radius of conical section at dx is rx .

$$\text{Mass of } dx = \rho V$$

$$= \rho \times \frac{1}{3} \pi r^2 x \cdot x$$

$$\text{Stress } (\sigma) = \frac{F}{A} = \frac{mg}{A} = \frac{\rho \times \frac{1}{3} \pi r^2 x \cdot g}{\pi r^2 x}$$

$$= \frac{1}{3} \rho x g$$

$$\epsilon = \frac{\sigma}{E}$$

$$\therefore \Delta L = \frac{1}{3} \frac{L \times \rho \times g}{E} = \frac{1}{3} \times \frac{\rho g \times L^2}{E}$$

Integrating with limit 0 to L [\because Length of elementary strip dx]

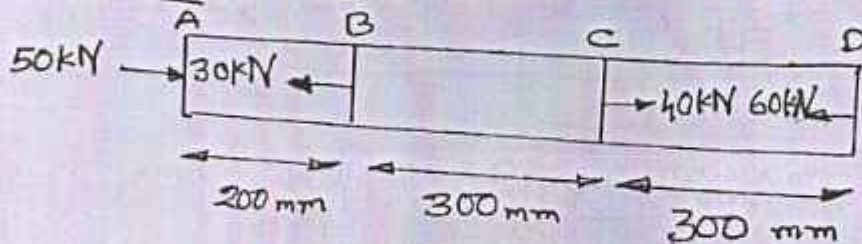
A. K. K.

$$\Delta L = \int_0^L \frac{1}{3} \frac{Pgx}{E} dx = \frac{Pg}{E} \int_0^L x dx$$

$$= \frac{Pg}{E} \left[\frac{x^2}{2} \right]_0^L = \frac{PgL^2}{2 \cdot 3E} = \frac{P \cdot g L^2}{6E}$$

$$\therefore \boxed{\Delta L = \frac{PgL^2}{6E}}$$

2. A steel bar is subjected to loads as shown in fig. If $E = 200 \text{ kN/mm}^2$ for the bar material, determine the change in length of the bar ABCD. The diameter of the bar = 200 mm.



Ans - Now,



$$\therefore \text{Change in length } (\delta l) = \frac{Pl}{AE}$$

$$\therefore \delta l = -\delta l_1 - \delta l_2 - \delta l_3$$

$$= -(\delta l_1 + \delta l_2 + \delta l_3)$$

$$\therefore \delta l_1 = \frac{Pl}{AE} = \frac{50 \times 200 \times 4}{\pi \times 200^2 \times 200} = 1.592 \times 10^{-3} \text{ mm}$$

$$\therefore \delta l_2 = \frac{Pl}{AE} = \frac{20 \times 300 \times 4}{\pi \times 200^2 \times 200} = 9.554 \times 10^{-4} \text{ mm}$$

$$\delta l_3 = \frac{Pl}{AE} = \frac{60 \times 300 \times 4}{\pi \times 200^2 \times 200} = 2.866 \times 10^{-3} \text{ mm},$$

$$\therefore \delta l = -(\delta l_1 + \delta l_2 + \delta l_3)$$

$$= (1.592 \times 10^{-3} + 9.554 \times 10^{-4} + 2.866 \times 10^{-3}) \text{ mm}$$

$$= -5.4134 \times 10^{-3} \text{ mm}$$

$$= -0.0054 \text{ mm (Ans).}$$

3. A brass rod 2 m long is fixed at both ends. If the thermal stress is not to exceed 76.5 MPa calculate the temperature through which the rod may be heated.

Take $E = 90 \text{ GPa}$ and $\alpha = 17 \times 10^{-6} / \text{K}$.

Ans - Given,

$$\text{Length } (L) = 2 \text{ m}$$

$$\text{max}^m \text{ thermal stress } (6 \text{ mm}) = 76.5 \times 10^6 \text{ N/m}^2$$

$$\alpha = 17 \times 10^{-6} / \text{K}$$

$$E = 90 \times 10^9 \text{ N/m}^2$$

$$t = ?$$

We know that,

$$\sigma_{\text{max}} = \alpha \cdot t \cdot E$$

$$\text{or, } 76.5 \times 10^6 = (17 \times 10^{-6}) \times t \times (90 \times 10^9)$$

$$t = \frac{76.5 \times 10^6}{17 \times 10^{-6} \times 90 \times 10^9} = 50 \text{ K}$$

$$\therefore \boxed{t = 50 \text{ K}} \text{ Ans.}$$

d. Ghosh

4:40-5:30

4:40-5:30
(Gr B)
(Gr A)

4:40-5:30

4:40-5:30

4:40-5:30
n Lab (Gr A)
n Lab (Gr A)
1)

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Hooghly

TECHNOLOGY COLLEGE

Hooghly

at the CDD 2nd Year
Subject: Strength of Materials (M307) Semester: 3rd

Teacher's Name :-

Attendance for the month

2023-24

No.	Name of Student	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	Remarks
1	Tadib Kr Ghoshal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
2	Tanmay Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
3	Sunny Kurni	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
4	Subirani Day	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
5	Subhayan Chaki	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
6	Subhadip Sankar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
7	Souvik Monna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
8	Souvik Bhadra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
9	Soumyadip Mondal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
10	Soumali Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
11	Souvik Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
12	Souyenjan Sengupta	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
13	Souyenjan Chatterjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
14	Souyenjan Bhattacharya	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
15	Souvik Kr Maitra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
16	Saptarshi Kundu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
17	Sayan Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
18	Rohan Roy	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

P. Ghosh
12-11-23

19-11-23

H.O.D.

Mechanical Engineering
Hooghly Engineering College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Hooghly
at the _____ Year

Teacher's Name :-

Subject :-

Semester :-

No	Name of Student	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Remarks
55	Sreeniv Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
56	Sreeniv Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
57	Shankar Pal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
58	Souven Sanyal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
59	Saikat Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
60	Prasen Patra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
61	Pradip Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
62	Kaustik Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
63	Kaustik Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
64	Jayanta Rajbanshi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
65	Dipal Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
66	Balrajit Adhikary	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
67	Rohit Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
68	Arun Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
69	Anirban Choudhury	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
70	Alip Kumar Singh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			

12.11.18
 12.11.18
 12.11.18

HOOGLY ENGINEERING &

Vivekananda Road,

Attendance for the month

TECHNOLOGY COLLEGE

Hooghly

at the EVEN 2022 Year

Subject :- Strengths of Materials (PGME403) Semester :- 4th

Teacher's Name :-

No.	Name of Student	8.2.22	9.2.22	10.2.22	12.2.22	15.2.22	16.2.22	17.2.22	19.2.22	21.2.22	22.2.22	23.2.22	24.2.22	25.2.22	26.2.22	27.2.22	28.2.22	1.3.22	2.3.22	3.3.22	4.3.22	5.3.22	6.3.22	7.3.22	8.3.22	9.3.22	10.3.22	12.3.22	13.3.22	14.3.22	15.3.22	16.3.22	17.3.22	18.3.22	19.3.22	20.3.22	21.3.22	22.3.22	23.3.22	24.3.22	25.3.22	26.3.22	27.3.22	28.3.22	29.3.22	30.3.22	31.3.22	Remarks			
19	Sandip Hara	.	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
20	Saikat Sarkar	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
21	Hir Saif Alam	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
22	Kinkar Sarkar	P	P	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
23	Debasish Pal	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
24	Chandan Das	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
25	Sukalpa Kato	P	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
26	Tapas Swarnakar	.	P	P	P	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
27	Tina Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
28	Arnab Koley	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
29	Sayan Sen	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
30	Arnab Hom	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
31	Surbhosh Murren	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
32	Arkuh Das	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
33	Seeman Bhosmick	.	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		

D. Ghosh
 12.05.22
 89
 17.05.22
M.O.D.
 Mechanical Engineering
 Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
CONTINUOUS ASSESMENT III (March 2023)
Department: Mechanical Engineering

Year: 2nd

Sub: Strength of Materials

Time: 1 Hr

Semester: 4th

Code: PC-ME 403

Full Marks- 25

GROUP A

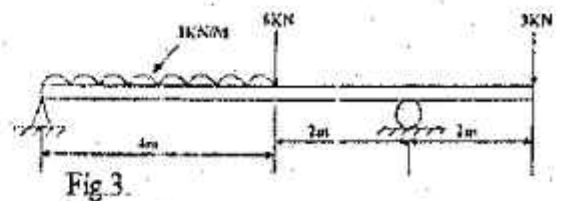
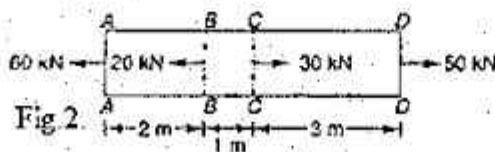
- Choose the correct answer from the given alternatives any five from the following questions. [5×1= 5]
 - Modulus of elasticity E , modulus of rigidity G and Poisson's ratio μ are related as:
 - $E = G(1 + \mu)$
 - $E = \frac{G}{2(1 + \mu)}$
 - $G = \frac{E}{2(1 + \mu)}$
 - $G = E(1 + \mu)$
 - At a section where the shear force becomes zero or changes sign
 - BM is zero
 - BM is unpredictable
 - BM is negative
 - BM is maximum or minimum
 - A circular beam of 10.5 cm dia is subjected to a shear force of 500 N. The maximum shear stress will be
 - 5.77 N/cm²
 - 7.69 N/cm²
 - 7.5 N/cm²
 - 5.5 N/cm²
 - The BM at the centre of a simply supported beam carrying uniformly distributed load is
 - wl
 - $\frac{wl}{2}$
 - $\frac{wl^2}{4}$
 - $\frac{wl^2}{8}$
 - The section modulus of a circular section of diameter d is
 - $\frac{\pi d^2}{32}$
 - $\frac{\pi d^3}{32}$
 - $\frac{\pi d^3}{64}$
 - $\frac{\pi d^4}{64}$
 - Elongation of a conical bar under its own weight is _____ that of a rectangular section of the same length
 - two-third
 - one-third
 - half
 - equal to
 - A load of 10000 N applied to a copper cylinder 200 mm long, 50 mm in diameter causes the length to increase by 0.4mm and diameter to decrease by 0.04 mm. The Poisson's ratio for copper will be
 - 0.4
 - 0.36
 - 0.24
 - 0.22

GROUP B

Answer any 4 from the following questions

[4×5=20]

- Prove that $E = 2G(1 + \nu)$ where E = Young's Modulus of Elasticity, G = Modulus of Rigidity and ν = Poisson's Ratio.
- A uniformly taper plate of uniform thickness is loaded as shown in Fig1. find the elongation of the plate.
- Derive the bending equation $\frac{M}{I} = \frac{\sigma}{y} = \frac{E}{R}$ where the symbols have their usual meaning.
- A steel bar of 25 mm diameter is acted upon by forces as shown in figure 2. What is the elongation of the bar? $E = 190$ GPa.
- Compute the maximum bending stress in a simply supported beam of 4 m length and of 10 cm × 20 cm (depth) cross-section loaded with UDL load of 10 kN/m.
- Draw shear force diagram (SFD) and bending moment diagram (BMD) for the beam loading shown in fig. 3. Also find the maximum BM, maximum SF and contra-flexure point if any.



[Handwritten signature]

89

HOOGLHY ENGINEERING AND TECHNOLOGY COLLEGE
Department of Mechanical Engineering
Assignment (CA-III)
IC Engine & Gas Turbine (PE-ME601)

(Last date of submission 25/06/2021) Full marks-25

1. A gas turbine plant operates in the Brayton cycle and the air at the inlet is 27°C and 0.1 MPa . The pressure ratio is 6.25 and the maximum temperature is 800°C . The turbine and the compressor efficiencies are each 80% . Find the following:

(i) The compressor work per kg of air (ii) The turbine work per kg of air (iii) The heat supplied per kg of air (iv) The cycle efficiency (v) The turbine exhausts temperature [10]

2. A four stroke, four cylinder petrol engine is running at 3000 rpm . The bore of each cylinder is 60 mm , stroke is 90 mm . The clearance volume per cylinder is 60 c.c. Net brake load is 16 kg , torque arm is 350 mm . The fuel consumption per hour is 5 kg . Calorific value of diesel is 43000 kJ / kg . Calculate the following: (i) Brake power (ii) Brake thermal efficiency (iii) Indicated thermal efficiency if mechanical efficiency is 88% (iv) Indicated mean effective pressure (v) Relative efficiency (vi) Brake specific fuel consumption. [10]

3. (a) What are the advantages and disadvantages of gas turbine over I.C. engines? [5]
(b) What are the fields of application for gas turbine?

86

S. Ghosh

PE-ME
Mechanical Engineering
Hooghly Engineering & Technology College

HOOGLY ENGINEERING AND TECHNOLOGY COLLEGE

Department of Mechanical Engineering

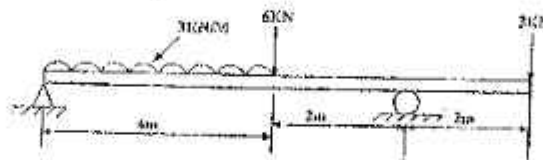
Assignment (CA-III)

Strength of Materials (PC-ME-403)

(Last date of submission 25/06/2021) Full marks-25

1. Two closed coil concentric helical springs of equal length are made out of the same wire of 12 mm diameter and support a compressive load of 1.2 kN. The outer spring consists of 20 turns of 240 mm mean diameter and the inner spring has 24 turns of 200 mm diameter. Determine the maximum stress produced in each spring. [8]

2. Draw shear force diagram (SFD) and bending moment diagram (BMD) for the beam loading shown in figure. Also find the maximum BM, maximum SF and contra-flexure point if any. [10]



3. Two shafts AB and BC are connected in series. The diameters of AB and BC are respectively 100 mm and 50 mm and their lengths are 2 m and 3 m respectively. Both the shafts are made of the same material having modulus of rigidity as $8 \times 10^4 \text{ N/mm}^2$. Determine i) shear stress set up in each shaft and ii) the angle of twist. Take torque applied at one end is 104 Nm. [7]

A. Ghosh

86
Mechanical Engineering
Hooghly Engineering & Technology College



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

CA I

(ODD 2022 JULY)

Last Date of Submission 28/07/2022

Subject: Kinematics & Theory of Machines (PC-ME-503) Semester: 5 th	
Roll Numbers	Topics for PowerPoint Presentation
1	Links and types of link
2	Machine and structure
3	Kinematic Pair and its Classification
4	Types of Constrained Motion
5	Kinematic Chain
6	Types of Joints in a Kinematic Chain
7	Mechanism
8	Degrees of Freedom for plane Mechanisms
9	Application of Kutzbach Criterion to plane Mechanisms
10	Kutzbach Criterion
11	Inversion of Mechanism
12	Four bar Chain
13	Single slider crank chain
14	Double slider crank Chain
15	Inversions of four bar chain
16	Inversions of single slider crank chain
17	Inversions of double slider chain
18	Crank and slotted lever quick return motion mechanism
19	Whitworth quick return motion mechanism
20	Oldham's coupling
21	Governors and flywheel
22	Types of Governors
23	Centrifugal governors
24	Watt Governor
25	Porter Governor
26	Proell Governor
27	Wilson Hartnell Governor
28	Sensitiveness of Governor
29	Stability of Governors
30	Isochronous Governors
31	Hunting
32	Effort of a Governor
33	Power of a Governor

A. Ghosh

89
Mechanical Engineering
Hoochly Engineering & Technology College



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

CA II

(ODD 2022 August)

Last Date of Submission 30/08/2022

CA-II	Subject: Kinematics & Theory of Machines (PC-ME-503)	Semester: 5 th
Roll Numbers	Topics for Report Writing	
1	Types of Belt and its Function	
2	Materials used for Belt	
3	Types of Flat Belt Drive	
4	Velocity Ratio of Belt Drive	
5	Velocity Ratio of Compound Belt Drive	
6	Causes and Effects of Slip of Belt	
7	Power transmitted by a Belt	
8	Ratio of Driving Tensions for the Flat Belt Drive	
9	Centrifugal Tension in flat Belt Drive, Causes and Effects	
10	Condition for the Transmission of Maximum Power	
11	Fluctuation of Energy in Turning Moment Diagram	
12	Maximum Fluctuation of Energy	
13	Function and working principle of Flywheel	
14	Coefficient of Fluctuation of Energy and Speed	
15	Energy Stored in a Flywheel	
16	Balancing of Rotating Masses	
17	Balancing of Reciprocating Masses	
18	Static and Dynamic Balancing	
19	Balancing of Several Masses Rotating in the Same Plane	
20	Balancing of Several Masses Rotating in Different Planes	
21	Partial Balancing of Unbalanced Primary Forces in a Reciprocating Engine	
22	Variation of Tractive Force, Causes and Effects	
23	Partial Balancing of Two Cylinders Locomotives and its Effect	
24	Swaying Couple and Hammer Blow	
25	Maximum Fluctuation of Energy	
26	Function and working principle of Flywheel	
27	Coefficient of Fluctuation of Energy and Speed	
28	Energy Stored in a Flywheel	
29	Balancing of Rotating Masses	
30	Balancing of Reciprocating Masses	
31	Static and Dynamic Balancing	
32	Balancing of Several Masses Rotating in the Same Plane	

J. Ghosh

88

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE



Continuous Evaluation (CA-I), MARCH

2022



Department: ME

Year: 2nd

Sub: Strength of Materials

Semester: 4th

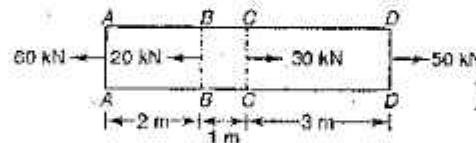
Code: PC-

ME 403

Submission Date: 28/02/22

Full Marks-25

1. Deduce relation between Young's modulus (E), modulus of rigidity (G) and Poisson's ratio (ρ). [5]
2. An aluminum bar 1.8 m long has a 2.5 cm-square cross-section over 0.6 m of its length and 2.5 cm diameter circular cross section over the other 1.2 m. How much will the bar elongate under a tensile load $P = 1750$ kg if $E = 75 \times 10^4$ kg/cm²? [7]
3. A steel bar of 25 mm diameter is acted upon by forces as shown in figure. What is the elongation of the bar? $E = 190$ GPa. [5]



4. A bar of brass 25 mm diameter is enclosed in a steel tube of 50 mm external diameter and 25 mm internal dia. The bar and the tube are both 1.5 m long and rigidly fastened at both ends. Find the stress in brass and steel when temperature rises from 30°C to 100°C. Take, $E_s = 200$ GPa, $E_b = 100$ GPa, $\alpha_s = 11.6 \times 10^{-6}/^\circ\text{C}$ & $\alpha_b = 18.7 \times 10^{-6}/^\circ\text{C}$. [8]

A. Ghosh

8/3
28/02/22
Mechanical Engineering
Hoopty Engineering & Technology College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation (CA-II), APRIL 2022

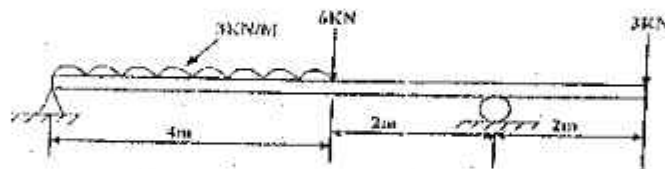
Department: ME



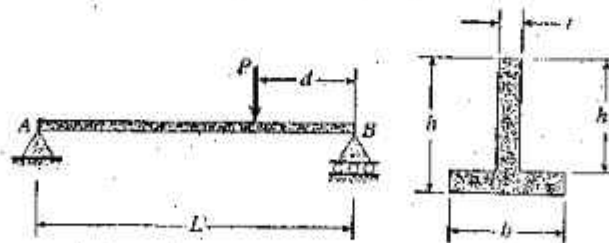
Year: 2nd
Sub: Strength of Materials
Submission Date: 31/03/22

Semester: 4th
Code: PC- ME 403
Full Marks-25

1. What is point of contra flexure? Derive the relationship between load intensity, shear force and bending moment. [5]
2. With assumptions, derive the bending equation $\frac{M}{I} = \frac{\sigma}{y} = \frac{E}{R}$ where the symbols have their usual meaning. [7]
3. Draw shear force diagram (SFD) and bending moment diagram (BMD) for the beam loading shown in figure. Also find the maximum BM, maximum SF and contra-flexure point if any. [7]



4. Determine the maximum tensile stress σ_t and maximum compressive stress σ_c due to load P acting on simple T-section beam AB (see fig.). Given: $P = 5.4$ kN, $L = 30$ m, $d = 1.2$ m, $b = 75$ mm, $t = 25$ mm, $h = 100$ mm and $h_1 = 75$ mm. [6]



Subhor

86

HOOGLY
Mechanical Engineering
Hooghly Engineering & Technology College

Hooghly Engineering & Technology College
Mechanical Engineering 3RD Year 2022-23
I.C. Engine & Gas Turbine (PE-ME601A)
CAI
Even 2023 February

Sl. No.	Topic for Power Point Presentation	Roll Numbers
1	Heat Engine	1,2,3
2	Development of I.C. Engines	4,5,6
3	Classification of I.C. Engines	7,8,9
4	I.C. Engine and its Components	10,11,12
5	Basic Engine Nomenclature	13,14,15
6	Working of 4 Stroke I.C. Engines	16,17,18
7	Thermodynamic Analysis of I.C. Engines	19,20,21
8	Working of 2 Stroke I.C. Engines	22,23,24
9	Valve timing Diagram for 4- stroke Petrol Engine	25,26,27
10	Valve timing Diagram for 4- stroke Diesel Engine	28,29,30,31

A. Ghosh

86

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

Hooghly Engineering & Technology College

Mechanical Engineering 3RD Year 2022-23

I.C. Engine & Gas Turbine (PE-ME601A)

CAII

EVEN 2023 February

Last Date of Submission 26/02/2023

Sl. No.	Topic for Report Writing	Roll Numbers
1	Theoretical and actual p-v diagrams for 4-stroke petrol engine	1-5
2	Volumetric efficiency of an engine limits the power output and the factors affect it.	6-10
3	Theoretical and actual p-v diagrams for 4-stroke Diesel engine	11-15
4	Working, theoretical and actual valve timing diagram for 4-stroke Diesel engine	16-20
5	Comparison between and CI & SI engine with respect to working cycle, method of ignition, method of fuel injection and method of governing	21-25
6	Effects of the factors BP, RPM, CV, BSFC on the brake thermal efficiency of an engine	26-31

Instructions:

1. Write name of the Institute top of the paper
2. Then topic name
3. Your Name
4. University Roll No.
5. Class Roll No.
6. During submission write University Roll No_Name (For Example, 17600719001_ Sayanik Dhali)

A. Ghosh

89

2023
Mechanical Engineering
Hooghly Engineering & Technology College



SECOND HOME ASSIGNMENT, 2021 (CA-IV)

Paper Name: Kinematics and Theory of Machines

Paper Code: PC-ME 503

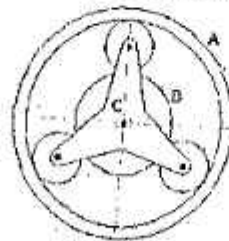
Last Date of Submission: 29th December' 2021

Discipline: ME

Semesters: 5th

Full Marks: 25

1. A body of mass 5kg is supported on a spring of stiffness 200N/m and has dashpot connected to it which produces a resistance of 0.002 N at a velocity of 1 cm/sec. In what ratio will the amplitude of vibration be reduced after 5 cycles? [8]
2. The turbine rotor of a ship has a mass of 900 kg and radius of gyration 600 mm. It rotates at 1800 r.p.m, clockwise when looking from the stern. Determine the gyroscopic couple and its effect when:
 - (i) The ship is travelling at 40 km/hr and steers to the left in a curve of 100m radius.
 - (ii) The ship is pitching and the bow is descending with maximum velocity. The pitching is simple harmonic, the periodic time being 30 seconds and the total angular moment between the extreme positions is 12°[9]
3. In an epicyclic gear of the sun and planet as shown in fig, the annular gear A has 48 teeth cut and meshes internally. Three planet wheels of equal size mesh with annular gear A and the sun wheel B. When gear A is stationary, the spider C which carries the planet wheels is to make one revolution for every five rotations of the spindle carrying the sun wheel B. Determine the number of teeth for all the wheels. [8]



A. Ghosh

86
Hooghly Engineering & Technology College



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
CONTINUOUS ASSESMENT III (March 2023)
Department: Mechanical Engineering

Year: 4th
Sub: Power Plant Engineering
Time: 1 Hr

Semester: 8th
Code: PE-ME 801B
Full Marks- 25

GROUP A

1. Choose the correct answer from the given alternatives any five from the following questions. [5×1= 5]
- i. The main function of economizer of a boiler plant is to
(a) increase steam production. (b) reduce fuel consumption.
(c) increase steam pressure. (d) increase life of the boiler.
- ii. In a steam power plant heat from the flue gases is recovered in
(a) a condenser. (b) a chimney. (c) economizer and air preheated. (d) a de-super-heater.
- iii. The effect of considering friction in steam nozzles for the same pressure ratio leads to
(a) increase in dryness fraction of exit steam. (b) decrease in exit velocity from the nozzle.
(c) no change in exit velocity from the nozzle and quality of exit steam. (d) both (a) and (b).
- iv. Calorific value of coal largely depends upon
(a) ash content. (b) size of coal particles. (c) moisture content. (d) volatile matter.
- v. Which of the following equipment is installed in steam power plants to reduce air pollution?
(a) De-super-heater. (b) Air filter. (c) Air electrostatic precipitator. (d) Stack.
- vi. For the same draught produced the power of forced draught fan, in comparison to that of induced draught fan, is
(a) more. (b) less. (c) the same. (d) may be more or less.
- vii. The pressure at the furnace is minimum in case of
(a) induced draught. (b) forced draught (c) balanced draught. (d) natural draught.

GROUP B

Answer any 4 from the following questions [4×5=20]

2. Enumerate the advantages of a water tube boiler over a fire tube boiler.
3. Estimate the height of a chimney to produce a draught of 20mm of water column when 20 kg of air is supplied per kg of coal burnt. The mean temperature of gases within the chimney is 300°C and the temperature of outside air is 25°C.
4. State the function and describe the working principle of (a) Feed check valve and (b) Fusible plug.
5. What do you mean by accessory? Name four important accessories of a boiler and state their functions.
6. What do you mean by boiler draught? Describe Induced draught system with neat sketch.
7. Deduce an expression for the height of a chimney required to produce draught in mm of water.

J. Ghosh

86

H.O.D.
Mechanical Engineering
Hoochly Engineering & Technology College

Hooghly Engineering & Technology College

Home Assignment (APRIL 2021)

Quality & Reliability Engineering (ME-802D)

Full Marks-25

1. What is the meaning of quality of conformance? Explain the factors which influence the quality of conformance. [8]
2. Differentiate between Quality and Inspection. [5]
3. What is the meaning of quality of design? Explain the factors which influence the quality of design. [7]
4. What are the objectives of Quality control? [5]

S. Ghosh

88
H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

1st CLASS TEST, SEPTEMBER 2018

Department: ME

Year: 2nd

Sub: Strength of Materials

Time: - 1 Hrs

Semester: 3rd

Code: ME 302

Full Marks- 30

GROUP-A

1. Choose the Correct Alternatives for the following:

10×1=10

i) The bending moment becomes a maximum or a minimum where

- a) Shear force is maximum b) Shear force is zero
c) Shear force changes sign d) Both b) and c)

ii) The flexural rigidity of a beam is given by:

- a) EI b) E/I c) GI d) GJ

Where I is the moment of inertia about the neutral axis

iii) At a section where the shear force becomes zero

- a) BM is zero b) BM is unpredictable
c) BM is negative d) BM is maximum or minimum

iv) If the diameter of a solid shaft is doubled, its torque carrying capacity will

- a) Become double b) become four times
c) become eight times d) remain same

v) A circular beam of 10.5 cm diameter is subjected to a shear force of 500 N. The maximum shear stress will be

- a) 5.77 N/cm² b) 7.69 N/cm² c) 7.5 N/cm² d) 5.5 N/cm²

vi) The spring index m for a helical spring is given by:

- a) $m = d/n$ b) $m = D/d$ c) $m = d/D$ d) $m = D/(dn)$

vii) If a composite bar is cooled, then the nature of stress in the part with high coefficient of thermal expansion will be

- a) Tensile b) Zero c) Compressive d) None of these

viii) The bulk modulus of a body is equal to

- a) $\frac{mE}{3(m-2)}$ b) $\frac{mE}{3(m+2)}$ c) $\frac{mE}{2(m-2)}$ d) $\frac{mE}{2(m+2)}$ where $1/m$ is poisson's ratio

ix) The section modulus of a circular section of diameter d is

- a) $\frac{\pi d^2}{32}$ b) $\frac{\pi d^3}{32}$ c) $\frac{\pi d^3}{64}$ d) $\frac{\pi d^4}{64}$

89

J. Ghosh

Mechanical Engineering
Hooghly Engineering & Technology College

x) Elongation of a conical bar under its own weight is _____ that of a rectangular section of the same length

- a) two-third b) one-third c) half d) equal to

Group B

Short answer type question

Attempt any one (1×5)

2. With assumptions, derive the torsion equation $\frac{T}{J} = \frac{\tau}{R} = \frac{G\theta}{l}$, where, the symbols have their usual meanings

3. A closely coiled helical spring is required to carry a load of 150 N. If the mean coil diameter is to be 8 times that of wire, calculate these diameters. Take maximum shear stress as 100 MPa.

Group C

Long answer type question

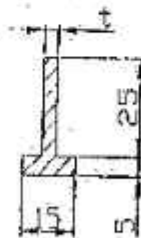
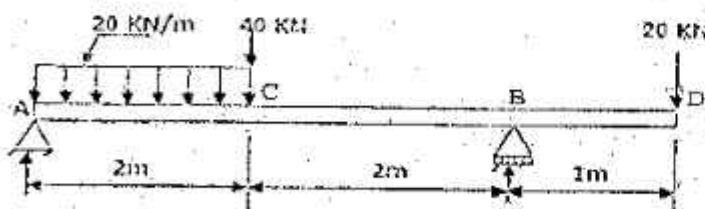
Attempt any one (1×15)

4. a) A steel tube 45 mm external diameter and 2.5 mm thick encloses centrally a solid copper rod of 30 mm diameter. The rod and the tube are rigidly connected together at the ends at a temperature of 30°C. Find the stress in each metal, when heated to 180°C. Given: $E_s = 2 \times 10^5 \text{ N/mm}^2$, $E_c = 1 \times 10^5 \text{ N/mm}^2$, $\alpha_s = 1.08 \times 10^{-5} \text{ per } ^\circ\text{C}$ and $\alpha_c = 1.7 \times 10^{-5} \text{ per } ^\circ\text{C}$.

b) A solid shaft of 200 mm diameter has the same cross-sectional area as a hollow shaft of the same material with inside diameter 150 mm. Find the ratio of i) powers transmitted by both the shafts at the same angular velocity ii) angles of twist in equal lengths of these shafts, when stressed to the same intensity [8+7]

5. a) Draw the shear force and bending moment diagrams for the beam shown in figure 1.

b) A simply supported CI beam is to have inverted T section as shown in the figure 2. If the allowable stresses for cast iron in tension is 280 kg/cm² and in compression is 650 kg/cm², calculate the proper stem thickness t of the section. [9+6]



89

H.O.D.
Mechanical Engineering
Hogshi Engineering & Technology College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

2nd CLASS TEST, November 2018

Department: ME

Year: 2nd

Sub: Strength of Materials

Time: - 1 Hrs

Semester: 3rd

Code: ME 302

Full Marks- 50

GROUP-A

1. Choose the Correct Alternatives for the following:

10×2=20

i) The deflection of a closely coiled helical spring under an axial load is given by

- a) $\frac{WR^3n}{Gr^4}$ b) $\frac{2WR^3n}{Gr^4}$ c) $\frac{4WR^3n}{Gr^4}$ d) $\frac{8WR^3n}{Gr^4}$

ii) In a thin cylindrical shell closed at ends and experiencing internal fluid pressure the ratio of hoop stress and the axial stress is

- a) 3:1 b) 4:1 c) 2:1 d) 1:2

iii) When a closely coiled spring is subjected to an axial load, it is said to be under

- a) Bending b) Shear c) Torsion d) All of these

iv) A body is subjected to two normal stresses 20 MPa (tensile) and 10 MPa (compressive) acting perpendicular to each other. The maximum shear stress is

- a) 5 MPa b) 10 MPa c) 15 MPa d) none of these

v) The buckling load will be maximum for a column if

- a) One end fixed and other end free b) Both end fixed
c) Both ends are hinged d) one end hinged and other end is fixed

vi) For a simply supported beam of length L having a concentrated load P at the centre the maximum deflection is given by:

- a) $PL^3/(3EI)$ b) $PL^3/(16EI)$ c) $PL^3/(24EI)$ d) none of the above

vii) A column has a rectangular cross-section of 10mm × 20mm and length of 1 m. The slenderness ratio of the column is close to

- a) 200 b) 346 c) 477 d) 1000

viii) The spring index m for a helical spring is given by:

- a) $m = d/n$ b) $m = D/d$ c) $m = d/D$ d) $m = D/(dn)$

ix) The coordinates of the origin of the Mohr's circle is

- a) $(\sigma_x - \sigma_y)/2, 0$ b) $(\sigma_x + \sigma_y)/2, 0$ c) $(\sigma_x - \sigma_y), 0$ d) $(\sigma_x + \sigma_y), 0$

x) In a Mohr's circle, the radius gives the value of

- a) Minimum shear stress b) maximum shear stress
c) Minimum normal stress d) maximum normal stress

Signature

88
R.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

Group B

Short answer type question

Attempt any one

(1×10)

- For a thin walled cylindrical pressure vessel deduce the expressions for circumferential stress and longitudinal stress.
- Deduce the expression for Euler's critical load for a uniform column having one end fixed and the other end hinged.

Group C

Long answer type question

Attempt any one

(1×20)

4. a) Two closed coiled helical springs wound from the same wire, but with different core ratio & equal no. of coils are compressed between rigid plates at their ends. Calculate the maximum shear stress induced in each spring, if the wire diameter is 10 mm and the load applied between the rigid plates is 500. The core radius of the springs is 100 mm and 75 mm respectively.

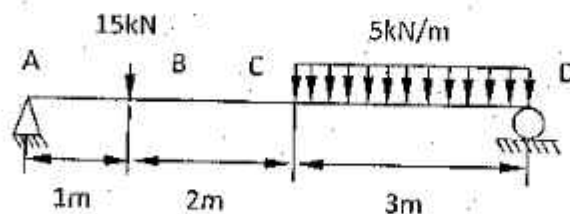
b) Calculate the critical load for a 1500 mm long strut that is pin-jointed at both ends in the landing gear mechanism of a small aircraft. The cross-section of the strut is circular. The same strut when arranged as a simply supported beam produces a maximum deflection of 5 mm under a load of 800 N at its mid-span.

[10+10]

5. a) The state of stress at a point is given; $\sigma_{xx} = 150$ MPa, $\sigma_{yy} = -50$ MPa and $\tau_{xy} = 25$ MPa. Determine:
i) Principal stresses and their directions ii) Maximum shear stresses and their directions iii) Normal and shear stresses if the plane is inclined at 50° with X axis.

b) Draw the S.F and the B.M. diagram for the beam as shown in the following figure.

[10+10]



88

A. f. l. o. d.

F.O.D.
Mechanical Engineering
Bochali Engineering & Technology College

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Hooghly

TECHNOLOGY COLLEGE

Hooghly

at the CDD 2nd Year
Subject: Strength of Materials (M307) Semester: 3rd

Teacher's Name :-

2020

2021

2022

2023

2024

2025

2026

2027

2028

2029

2030

2031

2032

2033

2034

2035

2036

2037

2038

2039

2040

No.	Name of Student	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Remarks
1	Tadib Kr Ghoshal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
2	Tanmay Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
3	Sunny Kurni	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
4	Subirani Day	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
5	Subhayan Chaki	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
6	Subhadip Sankar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
7	Souvik Monna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
8	Souvik Bhadra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
9	Soumyadip Mondal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
10	Somenath Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
11	Souvik Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
12	Sayantan Sanyal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
13	Sayantan Chatterjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
14	Sayantan Bhattacharya	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
15	Souvik Kr Maitra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
16	Saptarshi Kundu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
17	Sayan Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
18	Rohan Roy	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

P. Ghosh
12-11-21

1985
12-11-21

H.O.D.
1985

HooGLHY ENGINEERING & TECHNOLOGY COLLEGE
Hooghly

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Attendance for the month
Hoogly
at the 05/24/24 year

Teacher's Name :-

Subject :- Strength of Materials (M305) Semester :- 3rd

No.	Name of Student	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	Remarks
19	Rik Chatterjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
20	Prasenjit Dasg	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
21	Raktib Kundu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
22	Gyem Roy	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
23	Nirish kr Chakr	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
24	Nishit Anandaram	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
25	Nigam kr Sharma	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
26	Nuzrat kr Sana	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
27	Mr. Anish Anand	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
28	Ms. Saikat Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
29	Kuntal Bhowan	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
30	Krishananda Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
31	Krishanu Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
32	Kousik kr Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
33	Kousik Bhowan	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
34	Indrajit Karmika	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
35	Shubam Anam	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
36	Debarshi Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

05/24/24

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Hooghly
Attendance for the month _____ at the _____ Year

Teacher's Name :-

Subject :-

Semester :-

No	Name of Student	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Remarks
55	Sreeniv Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
56	Sreeniv Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
57	Shankar Pal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
58	Souven Sanyal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
59	Saikat Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
60	Prasen Patra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
61	Pradip Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
62	Kaustik Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
63	Kaustik Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
64	Jayanta Ray	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
65	Dipal Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
66	Balrajit Adhikary	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
67	Bhaktar Sarker	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
68	Arun Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
69	Anirban Choudhury	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
70	Alip Kumar Singh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			

12.11.18
 12.11.18
 12.11.18

HOOGLY ENGINEERING &

Vivekananda Road,

Attendance for the month

TECHNOLOGY COLLEGE

Hooghly

at the EVEN 2022 Year

Subject :- Strengths of Materials (PGME403) Semester :- 4th

Teacher's Name :-

No.	Name of Student	8.2.22	9.2.22	10.2.22	12.2.22	15.2.22	16.2.22	17.2.22	19.2.22	21.2.22	22.2.22	23.2.22	24.2.22	25.2.22	26.2.22	27.2.22	28.2.22	29.2.22	30.2.22	31.2.22	1.3.22	2.3.22	3.3.22	4.3.22	5.3.22	6.3.22	7.3.22	8.3.22	9.3.22	10.3.22	12.3.22	13.3.22	14.3.22	15.3.22	16.3.22	17.3.22	18.3.22	19.3.22	20.3.22	21.3.22	22.3.22	23.3.22	24.3.22	25.3.22	26.3.22	27.3.22	28.3.22	29.3.22	30.3.22	31.3.22	Remarks		
19	Sandip Hara	.	P	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
20	Saikat Sarkar	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
21	Hir Saif Alam	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
22	Kinkar Sarkar	P	P	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
23	Debasish Pal	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
24	Chandan Das	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
25	Sukalpa Kato	P	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
26	Tapas Swarnakar	.	P	P	P	P	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
27	Tina Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
28	Arnab Koley	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
29	Sayan Sen	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
30	Arnab Hom	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
31	Surbhosh Murnu	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
32	Arka Das	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
33	Seeman Bhosmick	.	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

D.K. Das
 12.05.22
 89
 17.05.22
 H.O.D.
 Mechanical Engineering
 Hooghly Engineering & Technology College

HOOGHLY ENGINEERING &

Vivekananda Road,
Attendance for the month

TECHNOLOGY COLLEGE

Hooghly
at the EVEN 2023 Year

Teacher's Name :-

Subject :- Strength of Materials (PCME403)

Semester :- 4th

No.	Name of Student	Attendance for the month																				Remarks														
		16-23	17-23	21-23	3-23	21-23	23-23	28-23	4-23	11-23	15-23	24-23	24-23	31-23	1-23	2-23	3-23	5-23	6-23	10-23	12-23		13-23	17-23	19-23	20-23	26-23	27-23	31-23	20-23	10-23	12-23	13-23	15-23	15-23	17-23
19	Aruni Nandi	.	P	P	P	P	P	P	P	P	P	P	.	P	.	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	.	P
20	Suman Saha	P	P	P	P	P	P	P	.	P	P	.	P	.	P	.	P	P	P	P	P	P	P	P	P	P	P	.	P	P	.	P	P	.		
21	Sayon Ghosh	.	P	P	P	P	P	.	P	P	P	P	.	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
22	Sayon Munshi	P	.	P	P	.	P	P	P	P	.	P	P	P	P	.	.	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
23	Sanjit Pandit	.	P	P	P	P	.	P	.	P	P	P	P	P	.	P	.	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
24	Nilkamal Das	.	P	P	P	P	.	P	P	P	.	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	.
25	Mintu Sarkar	P	.	.	P	P	P	P	P	P	.	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

D. Ghosh
17.05.23

18.05.23

H.O.D.
Mechanical Engineering
Hooghly Engineering & Technology College

Hooghly Engineering & Technology College

Assessment Rubrics of Continuous Evaluation (CA1)

Paper Name: Strength of Material

Paper Code: PC-ME 403

Component	Marks	Proficient	Acceptable	Needs Improvements
Topic Covered	5	Topic is identified and fully covered.	Topic is mostly identified but not covered fully.	Topic is neither identified nor covered.
Written Communication	5	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow. Diagrams or analyses are clear. Sentences are free from spelling and grammatical errors.	Report is mostly well organized and clearly written. The underlying logic is partially articulated. Diagrams or analyses are mostly clear. Sentences are mostly free from spelling and grammatical errors.	Report lacks an overall organization. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult to understand.
Presentation Visual Aids	5	Slides are error-free and logically present the main contents.	Slides are mostly error-free and almost logically present the main contents.	Slides contain errors and have lack of logic.
Oral Presentation	5	Speakers are audible and fluent on their topic, and do not rely on notes to present or respond.	Speakers are mostly audible and fluent on their topic, and require minimum referral notes.	Speakers are often inaudible or hesitant, often speaking incomplete sentences. Speakers rely heavily on notes.
Body Language	5	Speakers make eye contact with audience and demonstrate a high level of comfort and connection with the audience.	Speakers break eye contact with audience and demonstrate a slight discomfort with the audience.	Speakers make little or no eyecontact with audience, and demonstrate a high degree of discomfort interacting with the audience.

S. S. Saha
H.O.D.
 Computer Science and Engineering
 Hooghly Engineering & Technology College

SS
 Principal in Charge
 Hooghly Engineering & Technology College
 Hooghly Engineering & Technology College

ASSESSMENT RUBRICS

Mechanical Engineering		2 nd Year					Semester: 4 th
Paper Name: Strength of Materials		CA-II					Paper Code: (ES-ME 403)
Component	Marks	Very Poor Up to 20%	Poor Up to 40%	Average Up to 60%	Good Up to 80%	Very good Up to 100%	
Topic Covered	5	Topic is neither identified nor covered.	Topic is partially identified but not covered.	Topic is fully identified but not covered.	Topic is fully identified and partially Covered.	Topic is identified and fully covered.	
Report writing skill	5	Report lacks an overall organization and is not written clearly.	The report is partially organized but is not written clearly.	The report is partially organized and is partially written clearly.	The report is fully organized and is partially written clearly.	Report is well organized and clearly written.	
Inquisitiveness	5	Student has less degree of curiosity and seeks no information.	Student has little degree of curiosity and seeks no information.	Student has little degree of curiosity and seeks some information.	Student has high degree of curiosity and seeks some information.	Student has high degree of curiosity and seeks many additional information.	
References	5	Citations are incomplete or missing or inaccurate.	Cited less sources of information and images improperly to demonstrate the report.	Cited most sources of information and images improperly to demonstrate the report.	Cited all sources of information and images partially to demonstrate the report.	Cited all sources of information and images accurately to demonstrate the report.	
Execution of assignment	5	Does not execute assignment independently	Partially execute assignment independently	Moderately execute assignment independently	Mostly execute assignment independently	Fully executes assignment independently	


H.O.D.
 Computer Science and Engineering
 Faculty Engineering & Technology Center


Principal in Charge
 Hooghly Engineering & Technology College
 Hooghly Engineering & Technology Center


Vision and Mission of Electrical Engineering Department

Vision

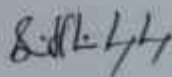
- To create a strong teaching and research environment by producing excellent electrical engineers.
- To attain excellence as an electrical engineer so as to prove themselves as outstanding professionals with full expertise and knowledge on the electrical engineering so that they serve as a valuable resource for industry and society at large, maintaining all humane moral and ethical values.
- To emerge as an academic institution, dedicated to the creation environment to develop confidence, motivate talent, encourage progressive and analytical thinking, nurture creativity, promote research and development, innovation and industry-institution collaboration and enhance professional competence of students.

Mission

- To impart high quality educational program on electrical engineering so as to prepare students as successful professional expert and also to bring ability to pursue higher education.


H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College





Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly West Bengal University of Technology)
Syllabus for B. Tech in Electrical Engineering
 (Applicable from the academic session 2018-2019)

Name of the course		POWER SYSTEM-I	
Course Code: PC-EE-502		Semester: 5th	
Duration: 6 months		Maximum Marks: 100	
Teaching Scheme		Examination Scheme	
Theory: 3 hrs/week		Mid Semester Exam: 15 Marks	
Tutorial: 0hr/week		Assignment & Quiz: 10 Marks	
Practical: hrs/week		Attendance: 05 Marks	
Credit Points: 3		End Semester Exam: 70 Marks	
Objective:			
1.	To understand the basic principle of generation of Electricity from different sources		
2.	To find parameters and characteristics of overhead transmission lines and cables.		
3.	To find different parameters for the construction of overhead transmission line		
4.	To determine the performance of transmission lines.		
5.	To understand the principle tariff calculation.		
6.	To solve numerical problems on the topics studied.		
Pre-Requisite			
1.	Basic Electrical Engineering (ES-EE-101)		
2.	Electric Circuit Theory (PC-EE-301)		
3.	Electromagnetic field theory (PC-EE-303)		
Unit	Content	Hrs	Marks
1	Basic Concepts: Evolution of Power System and present day Scenario. Structure of power system: Bulk power grid and Micro Grid. Generation of Electric Power: General layout of a typical coal fired power station, Hydro electric power station, Nuclear power station, their components and working principles, comparison of different methods of power generation. Introduction to Solar & Wind energy system. Indian Electricity Rule-1956: General Introduction.	10	
2	Overhead transmission line: Choice of frequency, Choice of voltage, Types of conductors, Inductance and Capacitance of a single phase and three phase symmetrical and unsymmetrical configurations. Bundle conductors. Transposition. Concept of GMD and GMR. Influence of earth on conductor capacitance. Overhead line construction: Line supports, Towers, Poles, Sag, Tension and Clearance, Effect of Wind and Ice on Sag, Dampers. Corona: Principle of Corona formation, Critical disruptive voltage, Visual critical corona discharge potential, Corona loss, advantages & disadvantages of Corona. Methods of reduction of Corona.	12	
3	Insulators: Types, Voltage distribution across a suspension insulator string, String efficiency, Arching shield & rings, Methods of improving voltage distribution across Insulator strings, Electrical tests on line Insulators.	05	

Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly West Bengal University of Technology)
Syllabus for B. Tech in Electrical Engineering
 (Applicable from the academic session 2018-2019)

4	Cables: Types of cables, cable components, capacitance of single core & 3 core cables, dielectric stress, optimum cable thickness, grading, dielectric loss and loss angle.	04	
5	Performance of lines: Short, medium (nominal, T) and long lines and their representation. A.B.C.D constants, Voltage regulation, Ferranti effect, Power equations and line compensation, Power Circle diagrams.	06	
6	Tariff: Guiding principle of Tariff, different types of tariff.	03	

Text book:

1. Electrical Power System, Subir Roy, Prentice Hall
2. Power Systems, A. Ambikapathy, Khanna Publishing House
3. Power System Engineering, Nagrath & Kothery, TMH
4. Elements of power system analysis, C.L. Wodhwa, New Age International.
5. Electrical Power System, Ashfaq Hussain, CBS Publishers & Distributors

Reference books

1. Electric Power transmission & Distribution, S.Sivanagaraju, S.Satyanarayana., Pearson Education.
2. A Text book on Power system Engineering, Soni, Gupta, Bhatnagar & Chakrabarti, Dhanpat Rai & Co.
3. Electric Power distribution system Engineering, 2nd Edition, T. Gonen, CRC Press.
4. www.powermin.nic.in/acts_notification/pdf/ier1956.pdf

Course Outcome:

After completion of this course, the learners will be able to

1. explain the principle of generation of Electric power from different sources
2. determine parameters of transmission lines and its performance
3. explain the principle of formation of corona and methods of its reduction
4. conduct electrical tests on insulators
5. solve numerical problems related to overhead transmission line, cable, insulators and tariff
6. analyze overhead transmission line based on short medium and long lines.

Special Remarks (if any)

The above-mentioned outcomes are not limited. Institutions may define outcomes based their program educational objective.



H.O.D.
Electrical Engineering
Hooghly Institute of Technology College

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Electrical Engineering
(Applicable from the academic session 2018-2019)

Semester-VI

Name of the course		POWER SYSTEM-II	
Course Code: PC-EE-601		Semester: 6th	
Duration: 6 months		Maximum Marks: 100	
Teaching Scheme		Examination Scheme	
Theory: 3 hrs/week		Mid Semester Exam: 15 Marks	
Tutorial: 0hr/week		Assignment & Quiz: 10 Marks	
Credit Points: 3		Attendance: 05 Marks	
		End Semester Exam: 70 Marks	
Objective:			
1.	To understand the method of representation of power system components		
2.	To know about location and components of a distribution substation.		
3.	To understand different methods of load flow studies.		
4.	To determine faults in Electrical systems.		
5.	To understand the principle of power system stability.		
6.	To understand the principle of relays and methods of protection of power system		
7.	To solve numerical problems on the topics studied.		
Pre-Requisite			
1.	Electric Circuit Theory (PC-EE-301)		
2.	Electromagnetic field theory (PC-EE-303)		
3.	Power system-I (PC-EE-502)		
Unit	Content	Hrs	Marks
1	Representation of Power system components: Single-phase representation of balanced three phase networks, the one-line diagram and the impedance or reactance diagram, per unit (PU) system.	02	
2	Distribution substation: Types of substations, location of substations, substation equipments and accessories, earthing (system & equipment), feeder and distributors, radial and loop systems.	05	
3	Load flow studies: Network model formulation, formation of Ybus, load flow problem, Gauss-Siedel method, Newton-Raphson method, Decoupled load flow studies, comparison of load flow methods.	05	
4	Faults in Electrical systems: Transient on a transmission line, short circuit of a synchronous machine under no load & loaded condition. Symmetrical component transformation, sequence impedance and sequence network of power system, synchronous machine, transmission lines and transformers. Symmetrical component analysis of unsymmetrical faults, single line-to-ground fault, line-to-line fault, double line-to-ground fault	08	
	Power system stability: Steady state stability, transient stability,		

Maulana Abul Kalam Azad University of Technology, West Bengal
 (Formerly West Bengal University of Technology)
Syllabus for B. Tech in Electrical Engineering
 (Applicable from the academic session 2018-2019)

5	equal area criteria, swing equation, multi machine stability concept	04	
6	Power system protection: Protective zones, Relaying elements and quantities. Protective relays, basic requirements and type of protection, phase and amplitude comparator, grading (time & current), classification of Electromagnetic relays, Directional relay, Distant relay, Differential relay, basic aspects of static and digital relays, relay protection scheme for transformer, feeder, generators and motors. Circuit breakers, circuit breaking transients, transient recovery voltage, current chopping and resistance switching, circuit breaker rating, arc and arc extinction, circuit breaker types, oil circuit breaker, vacuum circuit breaker, air blast circuit breaker, SF6 circuit breaker and operating mechanism, advantages and disadvantages of different types	12	

Text book:

1. Modern Power System Analysis, D.P. Kothari & I.J. Nagrath, 4th Edition, Tata McGraw Hill.
2. Electrical Power Systems, Subir Ray, PHI
3. Switchgear protection and power systems, Sunil S Rao, Khanna Publications.
4. A text book on Power System Engineering, M.L.Soni, P.V.Gupta, U.S. Bhatnagar & A. Chakrabarti, Dhanpat Rai & CO.

Reference Books:

1. Protection & Switchgear, B. Bhalja, R.P. Maheshwari, N.G.Chothani, Oxford.
2. Power system protection & switchgear, B.Ram & D.N. Vishwakarma, Tata McGraw Hill.
3. Handbook of Electrical Power Distribution, G. Ramamurthy, University Press
4. Electric Power Transmission and Distribution, S. Sivanagaraju, S.Satyanarayana, Pearson Education.
5. Power Systems Stability, Vol. I, II & III, E.W. Kimbark, Wiley.
6. Power Engineering, D.P.Kothari & I.J. Nagrath, Tata McGraw Hill.
7. Power Systems Analysis, A. R. Bergen & V. Vittal, Pearson Education. 8. Computer Aided Power systems analysis, Dr. G. Kusic, CEC press.

Course Outcome:

After completion of this course, the learners will be able to

1. Represent power system components in line diagrams.
2. Determine the location of distribution substation.
3. Determine the performance of power system with the help of load flow studies.
4. Analyse faults in Electrical systems.
5. Determine the stability of Power system.
6. Explain principle of operation of different power system protection equipments.
7. Solve numerical problems related to representation, load flow, faults, stability and protection of power system.

Special Remarks (if any)

The above-mentioned outcomes are not limited. Institute may redefine outcomes based their program educational objective.

(Signature)
H.O.D.
 Electrical Engineering
 Hooghly Engineering & Technology College



PROGRAM EDUCATIONAL OBJECTIVE (PEO) for Bachelor of Technology in Electrical Engineering

PEO-1: To provide students with the knowledge of Mathematics, Basic principles of Engineering and Computing, Basic Sciences and Social Sciences in general and Electrical Engineering in particular so as to develop necessary skill to analyze and synthesize electrical circuits, algorithms and complex apparatus.

PEO-2: To prepare students as competent to analyze and provide economically feasible and socially acceptable solutions of real life technical problems in industry, research and academics related to power, information and electronic hardware.

PEO-3: To prepare students to excel in professionalism, smart and ethical conduct, interpersonal skills and adaptability in communication to prevalent trends in technology as well as changing technology so as to work successfully in various Industrial and Government organizations, both at the National and International level, with professional competence and ethical administrative acumen so as to be able to handle critical situations and meet deadlines.

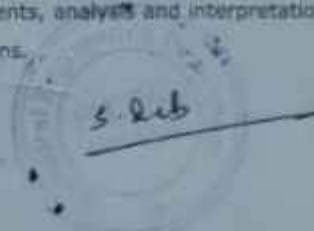
PEO-4: To prepare and encourage students to undergo research work as well as to involve in scientific innovations for sustainable development.

PROGRAMME OUTCOMES (POs) OF ELECTRICAL ENGINEERING DEPARTMENT

(A) PROGRAM OUTCOMES(POs)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.



5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcome (PSO)

PSO 1: Able to apply the knowledge gained during the course of the program from Mathematics, Basic Computing, Basic Sciences and Social Sciences in general and all electrical courses in particular to identify, formulate and solve real life problems faced in industries and/or during research work.

PSO 2: Able to provide socially acceptable technical solutions to complex electrical engineering problems with the application of modern and appropriate techniques for sustainable development.

PSO 3: Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team.

S. Deb



EE-502(Power System I)	<p>CO1: Get preliminary ideas of substation, its associated equipments and its safety aspects</p> <p>CO2: Emphasizes on construction of towers, conductor, under ground cables</p> <p>CO3: Model transmission line using basic circuit parameters and study its performance</p>
EE-602(Power System II)	<p>CO1: Analyses different load flow techniques used in power system operation</p> <p>CO2: Study different faults normally occurred in power system</p> <p>CO3: Learn different protection schemes and their applications.</p> <p>CO4: Get an idea how circuit breaker operates and its application at different voltage levels</p> <p>CO5: Study of disturbances resulting the power system unstable</p>
EE-702(Power System III)	<p>CO1: Deals with control of power system</p> <p>CO2: Explains how a thermal power plant be operated economically alone and in conjunctions with hydel power plant</p> <p>CO3: Prepare a schedule to obtain optimal operation.</p> <p>CO4: Gather knowledge of transient phenomenon normally occurred in power system and few schemes practically adopted for the protection of electrical equipments from being damaged.</p>
<p>Paper Name: UTILISATION OF ELECTRIC POWER</p> <p>Paper Code: EE-702</p>	<p>CO1: Development of the knowledge for different utilization of electric power apart from the previously developed.</p> <p>CO2: Understand the Electric Traction system, with it's different aspects, operations & controls. Learn about the use of AC & DC motors and power electronic in Electric Traction system.</p> <p>CO3: Explain the knowledge of light, illumination and photometry. Discuss different types of lamps for indoor & outdoor purpose. Describe different lighting schemes, their design methods & controls.</p>




	<p>CO4: Classify & explain different types of heating and their purpose for welding.</p> <p>CO5: Discuss the basic principles of electrolytic processes, electrolysis, electro deposition and extraction & refining of metals and on these contexts, use of electric power.</p>
<p>Paper Name: Power Plant Instrumentation and Control</p> <p>Paper Code: EE 802A</p>	<p>CO1: Explain the operation of traditional power plants and describe the requirement for instrumentation and control system.</p> <p>CO2: Analyze the various instruments used in power plant control systems and make recommendations for improving the control processes.</p> <p>CO3: Design instrumentation systems for different power plants.</p> <p>CO4: Explain the environmental impact of electricity generation and show how adequate control processes may reduce or eliminate these impacts.</p> <p>CO5: Describe the requirements and regulations for plant safety.</p> <p>CO6: Describe the process for Data handling-processing, logging, acquisition, accounting, display and storage.</p> <p>CO7: Describe instrumentation for Generator and Busbar coupling.</p> <p>CO8: Describe the procedure for basic power plant modeling/simulation.</p>

Course-wise Faculty list

ES-101	ES-191	MJ, SND
ES-201	ES-291	AKD,SNB



H.O.D.
Electrical Engineering
Honghy Engineering & Technology College



/

HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE

COURSE (SUB) OUTCOME AND CO MAPPING

Course (Sub)Title : Electrical and Electronic Measurement Lab	
Course (Sub)Code : PCEE493	Stream : EE Semester: 4th SESSION(2019-20)
Course (Sub) Outcomes	
CO No.	CO
1	Identify appropriate equipment and instrument for the experiment
2	Test the instrument for Application to the experiment
3	Construct circuit with appropriate instrument and safety precautions
4	Evaluate and adjust the precision and accuracy of AC energy meter, moving iron and dynamometer type ammeter, voltmeter and wattmeter by potentiometer
5	Measure voltage, current, power, energy, phase, frequency, resistance, inductance, capacitance
6	Work effectively in a team

CO-PO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	3	0	2	0	0	0	1	0	0	0	0	0
2	3	3	3	3	1	1	1	0	1	1	0	0
3	3	3	3	3	2	2	2	0	1	0	0	2
4	3	3	3	3	1	1	1	0	1	1	1	2
5	3	3	3	2	2	2	1	0	1	1	1	2
6	3	3	3	3	2	2	2	0	2	1	1	2
Overall	3	2.5	2.83	3	2.33	1.33	1.33	0	1	0.66	.5	1.33



 C. Babu


For Course 1 the details of the final result is:

Grade Point	Credit Point	No. of students
O	10	14
E	9	20
A	8	03
B	7	0
C	6	0
D	5	0
F	2	0
Total		37

Average marks = $(10 \times 14 + 9 \times 20 + 8 \times 3 + 7 \times 0 + 6 \times 0 + 5 \times 0) / 37 = 9.29$

So the course attainment level is 4

S. Deb


Electrical Engineering
Hooghly Engineering & Technology College

COs-POs & PSOs correlation matrices of all courses for a Program:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
COURSE1	(1,1,4)*3	(2,1,4)*3	(2,4,4)*3	(2,2,4)*3	(1,1,4)*3	(1,6,4)*3	(0,1,4)*3	(1,1,4)*3	(1,4)*3	(1,5,4)*3	(0,1,4)*3	(0,3,4)*3	(2,0,4)*3	(2,5,4)*3	(2,7,4)*3
COURSE 2															
COURSE 70															
Average Attainment Value	1.4	2.6	2.1	2.9	1.3	1.63	1.1	1.4	1.8	1.6	1.9	2.35	2.56	2.74	


 H.O.D.
 Electrical Engineering
 Hoopdy Engineering & Technology College



Correlation levels 1, 2, 3 and 4 as defined below:

Level 1: Low

Level 2: Medium

Level 3: High

Level 4: Very High

Attainment calculation of COs

Step 1: Find the weighted average marks from the published semester result for a course in terms of credit point.

Step 2: Calculate the attainment by using the following rule:

Attainment Level 1: If $4 \leq \text{Weighted average marks} \leq 5.5$

Attainment Level 2: If $5.5 < \text{Weighted average marks} \leq 7$

Attainment Level 3: If $7 < \text{Weighted average marks} \leq 8.5$

Attainment Level 4: If $8.5 < \text{Weighted average marks} \leq 10$

Attainment calculation of POs and PSOs

Step 1: Create the correlation table (with the correlated values 1-4 and '-' for no correlation) with COs vs. POs and COs vs. PSOs for individual course.

Step 2: Calculate the attainment value of POs and PSOs for a course in reference with obtained attainment value of course outcome in proportion with the correlation table.

Step 3: Consolidate the attainment values for all courses to obtain the final attainment value for each PO and PSO by taking average of all of them.


H.O.D.
Electrical Engineering
Banshi Engineering & Technology College

Attainment Calculation

The institute has a well-defined process of regularly assessing the levels of attainment of COs, POs and PSOs.

Presented below is a concise description of this process with the help of an example.

There are 4 attainment levels 1 to 4, with 4 being the maximum value. The results of the end semester examinations conducted by the affiliating university are used to determine the attainment of Course Outcomes for each course. The weighted average marks from the semester result (weightage being determined in terms of the credit assigned to the course) is taken as the benchmark for the course.

Attainment Level 1: If $4 \leq \text{Weighted average marks} \leq 5.5$
Attainment Level 2: If $5.5 < \text{Weighted average marks} \leq 7$
Attainment Level 3: If $7 < \text{Weighted average marks} \leq 8.5$
Attainment Level 4: If $8.5 < \text{Weighted average marks} \leq 10$

This is the mechanism of determining the attainment level of COs of a course.

Determining the Attainment level of POs and PSOs

A correlation table is at first formed (with the correlated values 1-4 and '-' for no correlation) with COs vs. POs and COs vs. PSOs for every individual course. Then the attainment value of POs and PSOs for a course is calculated in reference with obtained attainment value of course outcome in proportion with the correlation table.

The attainment values for all courses are then consolidated to obtain the final attainment value for each PO and PSO.

Correlation levels 1, 2, 3 and 4 as defined below:

Level 1: Low
Level 2: Medium
Level 3: High
Level 4: Very High

Example:

Let us assume, for Course 1, the details of the final result is:

Grade Point	Credit Point	No. of students
O	10	6
E	9	7
A	8	23
B	7	10
C	6	5
D	5	2
F	2	0
Total		53

28/11/21
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Average marks = $(10 \times 6 + 9 \times 7 + 8 \times 23 + 7 \times 10 + 6 \times 5 + 5 \times 2) / 53 = 7.86$

So the course attainment level is 3 because the average marks lies in between 7 and 8.5

Correlation Matrix for COs-POs and COs-PSOs of a course:

COs of a Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	4	3	2	3	3	2	1	2	3	-	-	-	2	2	3
CO2	3	3	1	3	3	2	1	2	3	-	-	-	2	2	3
CO3	2	2	2	1	3	2	1	2	3	-	-	-	2	2	3
CO4	4	2	2	3	3	4	1	2	3	-	-	-	2	2	3
CO5	3	3	2	3	3	2	1	2	3	-	-	-	2	2	3
Average Correlation Value	3.2	2.6	1.8	2.6	3	2.4	1	2	3	-	-	-	2	2	3

Attainment Calculation of all courses with POs and PSOs for a department:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
COURSE 1	(3.2/4)*3	(2.6/4)*3	(1.8/4)*3	(2.6/4)*3	(3/4)*3	(2.4/4)*3	(1/4)*3	(2/4)*3	(3/4)*3	-	-	-	(2/4)*3	(2/4)*3	(3/4)*3
COURSE 2															
COURSE 70															
Average Attainment Value	3.4	2.6	2.1	2.9	1.7	1.63	1.1	1.4	1.8	1.6	1.3	1.9	2.25	2.56	2.74

In this manner all attainment calculations are done and kept for all departments.

8/14.03.21

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpatl, Hooghly.

sem	<6	6 to <6.5	6.5to <7	7to<7.5	7.5 to<8	8to <8.5	8.5to <9	>9	Total
2nd SEM	0	0	0	0	3	5	0		8
4th sem	0	0	0	0	1	2	27	11	41
6th sem	0	0	1	0	1	6	22	13	42
8th sem	0	0		0	0	1	3	32	36

EVEN SEM 2022

■ 2nd SEM ■ 4th sem ■ 6th sem ■ 8th sem



■ sem ■ <6 ■ 6 to <6.5 ■ 6.5to <7 ■ 7to<7.5 ■ 7.5 to<8 ■ 8to <8.5 ■ 8.5to <9 ■ >9 ■ Total



[Signature]
H.O.D.
 Electrical Engineering
 Hooshi Engineering & Technology College



ELECTRICAL MACHINES

ASSIGNMENT

A. Multiple Choice Questions:

- The Commutator of a d.c generator ---
 - Reverses the direction of the current in the armature
 - Changes a.c to d.c within the armature
 - Keeps the current in one direction/unidirectional in the load circuit
 - Acts only as a sliding contact.
- The voltage / turn in both primary and secondary windings of a transformer is ---
 - Same
 - High in high voltage winding
 - Low in low voltage winding
 - low in high voltage winding.
- If the back e.m.f of a d.c motor suddenly vanishes, then ---
 - The motor will run faster than the rated speed
 - The motor will burn
 - The motor will stop
 - The motor will run slower than the rated speed.
- A lead acid storage battery rated at 120 amp-hours discharge rate will deliver a current of 5 amp for approximately ---
 - 24 hours
 - 12 hours
 - 5 hours
 - 120 hours.
- In a lead acid battery the level of electrolyte should be ---
 - Below the top level of the plates
 - Up to the top level of plates
 - Above the top level of the plates
 - Container to be fully filled to exclude any air inside.
- A 10 KVA, 1100/400 V, 50Hz single phase transformer has 100 turns on the secondary winding. The number of turns on its primary winding is ---



(a) 550 (b) 275 (c) 2750 (d) 5500.

7. Main purpose of using carbon as brushes in d.c machines is to ---

- (a) Reduce the size of the brushes
- (b) Reduce the wear and tear of the commutator
- (c) Increase the efficiency of the commutator
- (d) None of the above.

8. If the field circuit of a d.c shunt motor running without load gets opened, than the motor will---

- (a) Stop (b) Slow down (c) Run normally (d) pick up very high speed.

9. Output of a transformer is expressed in ---

- (a) KW (b) kVA (c) kVAR (d) None of these.

10. In a d.c machine, brushes are made of ---

- (a) Carbon (b) Silicon (c) Graphite (d) Either (a) or (c).

11. What type of d.c generator is used for electric welding? ---

- (a) Series (b) Shunt (c) over compound (d) Differential compound.

12. Capacity of a battery is indicated by ---

- (a) Ampere (b) ampere-hour (c) watt (d) volt-ampere

13. Internal resistance of a cell is reduced by ---

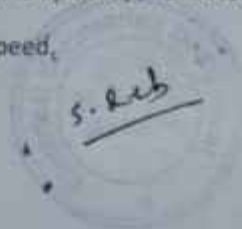
- (a) Putting plates very close together
- (b) Increasing the plate area
- (c) Using vent plug to permit exit of gas formed
- (d) all of the above.

14. To start a d.c shunt motor, below the rated speed resistance is inserted in series with ---

- (a) Motor (b) armature (c) field winding (d) any of the above.

15. If the field circuit of d.c series motor running without load is opened, the motor will ---

- (a) Stop (b) slow down (c) run normally (d) pick up very high speed.



16. The specific gravity of the electrolyte of a lead acid battery gives an indication of ---

- (a) The charge of the battery
- (b) The e.m.f of the battery
- (c) Level of electrolyte.

17. D.c series motors are best suited for electric traction as it ---

- (a) delivers high starting torque
- (b) runs at very high speed
- (c) is cheaper in cost
- (d) consumes less power.

18. Most economical method of electric braking is ---

- (a) Plugging
- (b) rheostatic braking
- (c) regenerative breaking
- (d) None of these.

19. The d.c motor used in railway traction is ---

- (a) Shunt motor
- (b) series motor
- (c) compound motor
- (d) any of the above.

20. If d.c series motor is started without load the motor will ---

- (a) Not take a start
- (b) run slowly
- (c) run at normal speed
- (d) pick up high speed.

21. The specific gravity of the electrolyte of a lead-acid cell is ---

- (a) 2.1
- (b) 2.0
- (c) 1.50
- (d) 1.25.

22. Silicon steel is used for transformer core because ---

- (a) it reduces hysteresis loss
- (b) it reduces eddy current loss
- (c) chemical energy
- (d) it reduces magnetostriction noise.

23. Electrolyte is used in nickel-iron-cadmium cell is---

- (a) NaOH
- (b) KOH
- (c) Na_2SO_4
- (d) K_2SO_4 .

24. At the discharge condition of a Lead acid cell anode and cathode convert to ---

- (a) Pb and PbO respectively
- (b) PbO_2 and Pb respectively
- (c) both become $PbSO_4$
- (d) both become PbO_2

S. Deb

25. 3 Point face plate type starter is suitable for d.c _____ motor

(a) Series (b) Shunt (c) Over compound (d) Differential compound. *


H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College

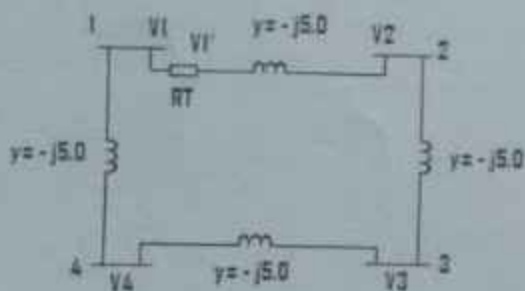
S. Deb

Assignment: One Date:

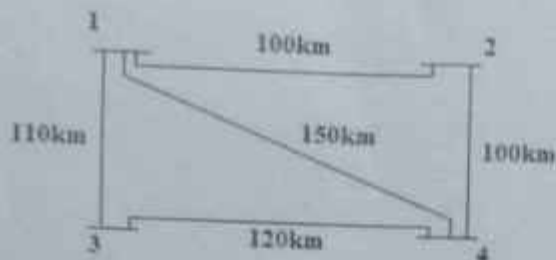
Subject: Power System-II EE-602

Last date of submission:

- 1) Draw the schematic arrangement of different component in hydroelectric power plant & four important advantages and disadvantages of the same.
- 2) Explain briefly the function of nuclear reactor.
- 3) Derive the expression of transient phenomenon of R-L transmission line.
- 4) What do mean by sequence impedance of transmission lines.
- 5) Explain zero sequence network of various types of transformer connections.
- 6) What is the advantages of using Newton Raphson method over Gauss Siedel method for solving load flow problem. Define different types of buses. How Fast Decoupled Load Flow is derived from Newton Raphson Load flow. Mention the assumptions taken into consideration.
- 7) Consider the four-bus system shown in figure where a regulating transformer (RT) is introduced in line 1-2 near bus 1. The RT is a magnitude regulator with ratio $= V1/V1' = 0.99$. Find the Y_{bus} matrix.



- 8) In the four bus system shown, all the lines are characterised by a series impedance of $0.1 + j0.7$ ohm/km and a shunt admittance of $j0.35 \times 10^{-4}$ ohm/km. Express all impedances and admittances in per unit taking 220kV as base kV and 100 MVA as base MVA. Find the bus admittance matrix for the system.



- 9) Perform a load flow study for the system of Problem(6). The bus power and voltage specifications are given in the table

Bus	Bus power, pu		Voltage Magnitude, pu	Angle in degree	Bus Type
	Real	Reactive			
1	Unspecified	Unspecified	1.02	0	Slack
2	0.95	Unspecified	1.01	Unspecified	PV
3	-2.0	-1	Unspecified	Unspecified	PQ
4	-1.0	-0.2	Unspecified	Unspecified	PQ

Compute the unspecified bus voltages, all bus powers and all line powers. Assume unlimited Q sources. Use Gauss sirdel method.

- 10) State the different steps to solve the load flow problem using Newton Raphson method.
 (Reference books: 1) power system engg by Nagrath Kothari
 2) power system engg by Nagsarkar and Sukhija.)

[Signature]
 H.O.D.
 Electrical Engineering
 Honsahy Engineering & Technology College



INTRODUCTION TO POWER SYSTEM ANALYSIS

Contents:

- ✓ Overview
- ✓ Function of power system analysis
- ✓ Need for Power System Analysis

Overview of Power System Analysis

- A power system consists of generation, transmission and distribution system.
- The components of the power systems are generators, transformers, transmission lines, distribution lines, loads and compensating devices like shunt, series, and static VAR compensators.
- In order to maintain power system, the bulk power has to be transmitted through transmission and distribution lines to the consumers safely and economically.
- The evaluation of power system is called power system analysis
- In monitoring power system analysis, we are mainly dealing with power or load flow analysis, short circuit analysis and stability analysis.

The functions of power system analysis are:

- To monitor the voltage at various buses, real and reactive power flow between buses.
- To design the circuit breakers.
- To plan future expansion of the existing system.
- To analyze the system under different fault conditions (3 fault-G, L-L, L-L-G faults).
- To study the ability of the system for larger disturbances (sudden application of large load).
- To study the ability of the system for small disturbances (routine or small load changes).

Need For System Analysis in planning and operation of power system

- Operational planning covers the whole period ranging from the incremental stage of system development.
- The system operation engineers at various points like area, space, regional and national load despatch deals with the despatch of power.
- Power balance equation is

$$P_D = \sum_{i=1}^N P_{Gi}, \quad i=1,2,3,\dots,N$$

Total demand=Sum of the real power generation

i.e., the generation should be such a way that to meet out the required demand.

- When this relation is satisfied, it gives good economy and security.



[Signature]
H.O.D.
Electrical Engineering
Mangalore Engineering & Tech

Power Electronics

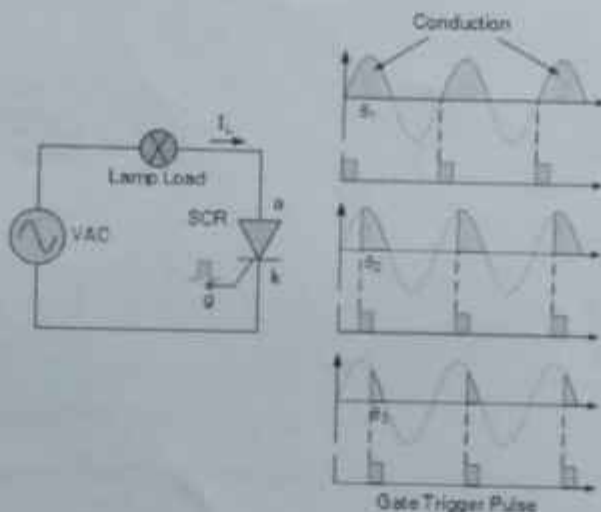
Learning outcomes

After completion of the chapter 1, students will be able to:
Describe the construction, working principles of SCR, methods of SCR triggering, SCR specifications
VI characteristics of SCR, TRIAC, UJT, DIAC

Chapter 1

1. Introduction

Thyristor is a unidirectional device, that is it will only conduct current in one direction only, but unlike a diode, the thyristor can be made to operate as either an open-circuit switch or as a rectifying diode depending upon how the thyristor's gate is triggered. A thyristor is a solid-state semiconductor device with four layers of alternating P- and N-type materials. It acts exclusively as a bistable switch, conducting when the gate receives a current trigger, and continuing to conduct until the voltage across the device is reversed biased, or until the voltage is removed.



Silicon Controlled Rectifier (SCR)

- The silicon controlled rectifier (SCR) is a three terminal semiconductor switching device which can be used as a controlled switch to perform various functions such as rectification, inversion and regulation of power flow.
- An SCR can handle currents up to several thousand amperes and voltages up to more than 1kV.
- The SCR has appeared in the market under different names such as thyristor, thyrode transistor.
- Like the diode, SCR is a unidirectional device, i.e. it will only conduct current in one direction only, but unlike a diode, the SCR can be made to operate as either an open-circuit switch or as a rectifying diode depending upon how its gate is triggered.
- In other words, SCR can operate only in the switching mode and cannot be used for amplification.
- Hence, it is extensively used in switching d.c. and a.c., rectifying a.c. to give controlled output, converting d.c. into a.c. etc.

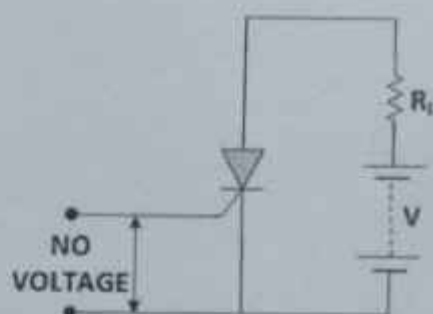
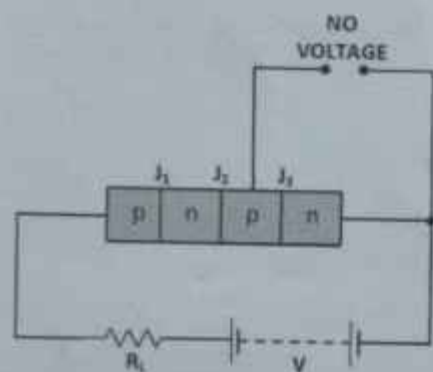
Working of SCR

In a silicon controlled rectifier, load is connected in series with anode. The anode is always kept at positive potential w.r.t. cathode.

The working of SCR can be studied under the following two heads:

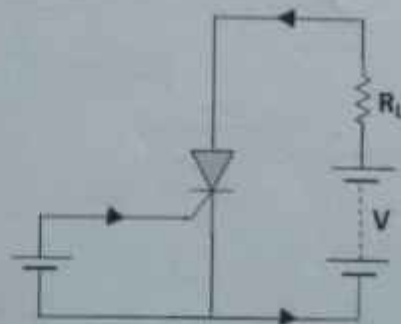
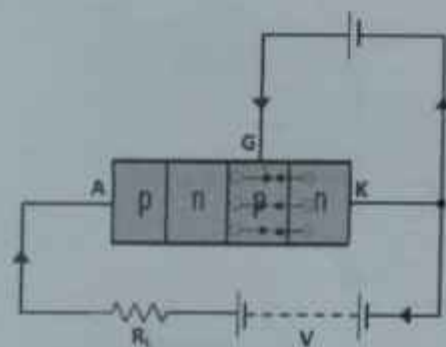
When Gate is Open

- Under this condition, junction J_2 is reverse biased while junction J_1 and J_3 are forward biased.
 - Hence, the situation in the junctions J_1 and J_3 is just as in a npn transistor with base open.
 - Consequently, no current flows through the load R_L and the SCR is cut off.
 - However, if the applied voltage is gradually increased, a stage is reached when the reverse biased junction J_2 breaks down.
 - The SCR now conducts heavily and is said to be in the ON state.
- The applied voltage at which SCR conducts heavily without gate voltage is called Break over voltage Fig.2 shows the SCR circuit with gate open i.e. no voltage applied to the gate.



When gate is positive w.r.t. cathode

The SCR can be made to conduct heavily at smaller applied voltage by applying a small positive potential to the gate as shown in fig.3.

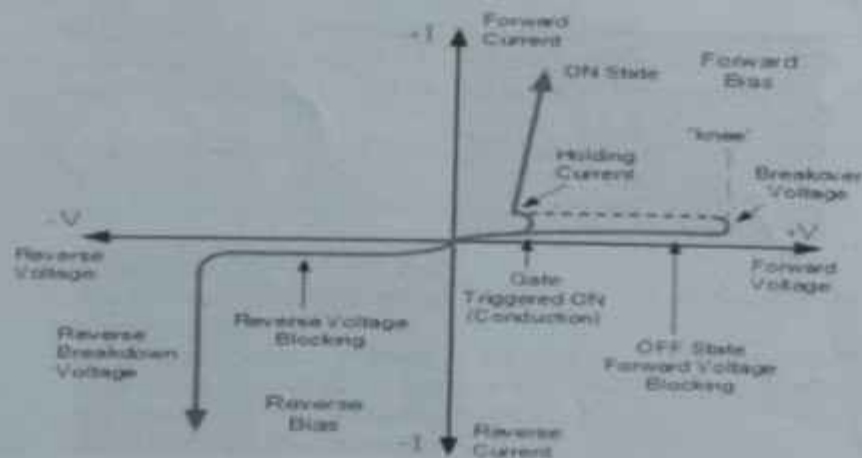
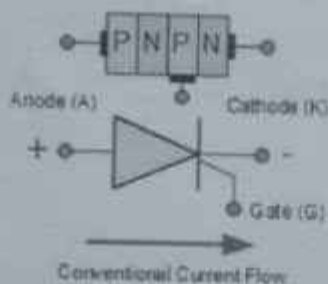


- Now junction J_3 is forward biased and junction J_2 is reverse biased.
- The electrons from n-type material start moving across junction J_3 towards left whereas holes from p-type towards the right.
- Consequently, the electrons from junction J_3 are attracted across the junction J_2 and gate current starts flowing

- As soon as the gate current flows, anode current increases.
- The increased current in turn makes more electrons available at junction J2.
- This process continues and in an extremely small time, junction J2 breaks down and the SCR starts conducting heavily.
- Once SCR starts conducting, the gate loses all control. Even if gate voltage is removed, the anode current does not decrease at all.
- The only way to stop conduction i.e. to bring the SCR in off condition, is to reduce the applied voltage to zero.

V-I Characteristics of SCR

It is the curve between anode-cathode voltage (V) and anode current (I) of an SCR at constant gate current. Fig.1 shows the V-I characteristics of a typical SCR.



Forward Characteristics

- When anode is positive w.r.t. cathode, the curve between V and I is called the forward characteristics.
- In fig.1, OABC is the forward characteristics of SCR at $I_G=0$.
- If the supply voltage is increased from zero, a point reached (point A) when the SCR starts conducting.
- Under this condition, the voltage across SCR suddenly drops as shown by dotted curve AB and most of supply

voltage appears across the load resistance R_L .

- If proper gate current is made to flow, SCR can close at much smaller supply voltage.

Reverse Characteristics

- When anode is negative w.r.t. cathode, the curve between V and I is known as reverse characteristics.
- The reverse voltage does come across SCR when it is operated with a.c. supply.
- If the reverse voltage is gradually increased, at first the anode current remains small (i.e. leakage current) and at some reverse voltage, avalanche breakdown occurs and the SCR starts conducting heavily in the reverse direction as shown by the curve DE .
- This maximum reverse voltage at which SCR starts conducting heavily is known as reverse breakdown voltage.
- SCR in Normal Operation

In order to operate the SCR in normal operation, the following points are kept in view:

- a) The supply voltage is generally much less than breakover voltage.
- b) The SCR is turned on by passing appropriate amount of gate current (a few mA) and not by breakover voltage.
- c) When SCR is operated from a.c. supply, the peak reverse voltage which comes during negative half-cycle should not exceed the reverse breakdown voltage.
- d) When SCR is to be turned OFF from the ON state, anode current should be reduced to holding current.
- e) If gate current is increased above the required value, the SCR will close at much reduced supply voltage.

Specifications of SCR

Voltage and Current Rating of SCR

1. Breakover voltage
2. Peak reverse voltage
3. Holding current
4. Forward current rating
5. Circuit fusing rating

Breakover Voltage

- It is the minimum forward voltage, gate being open, at which SCR starts conducting heavily (i.e. turned on).
- Thus, if the breakover voltage of an SCR is 200 V, it means that it can block a forward voltage (i.e. SCR remains open) as long as the supply voltage is less than 200 V. If the supply voltage is more than this value, then SCR will be turned on.
- In practice, the SCR is operated with supply voltage less than breakover voltage and it is then turned on by means of a small voltage applied to the gate.
- Commercially available SCRs have breakover voltages from about 50 V to 500 V.

Peak Reverse Voltage (PRV)

- It is the maximum reverse voltage (cathode positive w.r.t. anode) that can be applied to an SCR without conducting in the reverse direction.
- PRV is an important consideration while connecting an SCR in an a.c. circuit. During the negative half of a.c. supply, reverse voltage is applied across SCR. If PRV is exceeded, there may be avalanche breakdown and the SCR will be damaged if the external circuit does not limit the current.
- Commercially available SCRs have PRV ratings upto 2.5 kV.

Holding Current

- It is the maximum anode current, gate being open, at which SCR is turned OFF from ON condition.
- When SCR is in the conducting state, it can not be turned OFF even if gate voltage is removed.
- The only way to turn off or open the SCR is to reduce the supply voltage to almost zero at which point the internal transistor comes out of saturation and opens the SCR.
- The anode current under this condition is very small (a few mA) and is called holding current.
- Thus, if an SCR has a holding current of 5mA, it means that if anode current is made less than 5 mA, then SCR

will be turned off.

Forward Current Rating

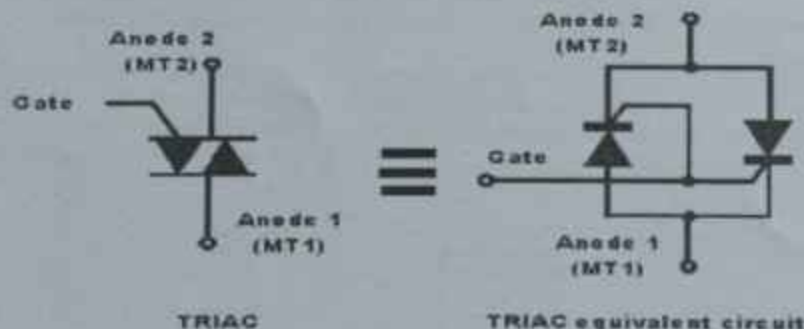
- It is the maximum anode current that an SCR is capable of passing without destruction.
- Every SCR has a safe value of forward current which it can conduct. If the value of current exceeds this value, the SCR may be destroyed due to intensive heating at the junction.
- For example, if an SCR has a forward current rating of 40 A, it means that the SCR can safely carry only 40 A. Any attempt to exceed this value will result in the destruction of the SCR.
- Commercially available SCRs have forward current ratings from about 30A to 100A.

Circuit Fusing (I^2t) Rating

- It is the product of square forward surge current and the time of duration of the surge i.e.,
- Circuit fusing rating $= I^2t$
- The circuit fusing rating indicates the maximum forward surge current capability of SCR.
- For example, consider an SCR having circuit fusing rating of 90 A²s. If this rating is exceeded in the SCR circuit, the device will be destroyed by excessive power dissipation.

TRIAC

- The TRIAC is an ideal device to use for AC switching applications because it can control the current flow over both halves of an alternating cycle. SCR is only able to control them over one half of a cycle. During the remaining half no conduction occurs and accordingly only half the waveform can be utilised.
- The fact that the TRIAC can be used to control current switching on both halves of an alternating waveform allows much better power utilisation.

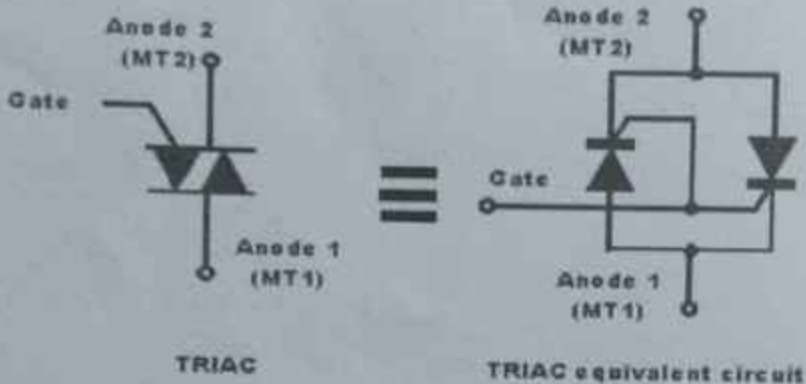


TRIAC symbol for circuit diagrams

- On the TRIAC symbol there are three terminals. These are the Gate and two other terminals are often referred to as an "Anode" or "Main Terminal". As the TRIAC has two of these they are labelled either Anode 1 and Anode 2 or Main Terminal, MT1 and MT2.
- The TRIAC is a component that is effectively based on the thyristor. It provides AC switching for electrical systems.
- Like SCR, the TRIACs are used in many electrical switching applications. They find particular use for circuits in light dimmers, etc., where they enable both halves of the AC cycle to be used. This makes them more efficient in terms of the usage of the power available.

TRIAC equivalent as two thyristors.

- While it is possible to use two thyristors back to back, this is not always cost effective for low cost and relatively low power applications.
- It is possible to view the operation of a TRIAC in terms of two thyristors placed back to back



TRIAC

TRIAC equivalent circuit

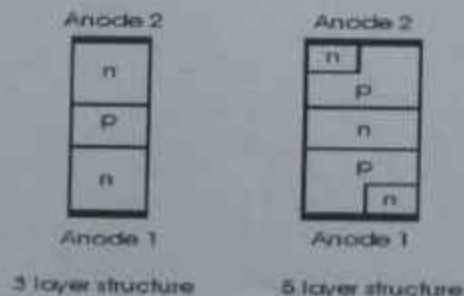
TRIAC Application

TRIACs are still used for many electrical switching applications:

- Domestic light dimmers
- Electric fan speed controls
- Small motor controls
- Control of small AC powered domestic appliances

DIAC

- The DIAC can be fabricated as either a two layer or a five layer structure.
- In the three layer structure the switching occurs when the junction that is reverse biased experiences reverse breakdown.
- The three layer version of the device is the more common and have a break-over voltage of around 30 V.
- Operation is almost symmetrical owing to the symmetry of the device.
- A five layer DIAC structure is also available. This does not act in quite the same manner, although it produces an I-V curve that is very similar to the three layer version



3 layer structure

5 layer structure

Typical DIAC circuit configuration

- To help in overcoming this problem, a DIAC is often placed in series with the gate.
- This device helps make the switching more even for both halves of the AC cycle.
- This results from the fact that its switching characteristic is far more symmetrical than that of the TRIAC.
- Since the DIAC prevents any gate current flowing until the trigger voltage has reached a certain voltage in either direction, this makes the firing point of the TRIAC more even in both directions.



H.O.D.
Electrical Engineering
H.E.S. Electrical Engineering & Technology College

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

CA3: September 2023

Department: EE

Year: 3rd
Sub: Power System I
Time: - 1 Hrs

Semester: 5th
Code: PC-EE-502
Full Marks- 25

GROUP A

(Multiple Choice Questions: Answer any five)

5X1=5

1. i) An ACSR conductor is specified as 30/7/2.59 mm. Its overall diameter is

- (a) 20.72 mm (b) 95.83 mm (c) 10.36 mm (d) 18.13 mm

ii) In case of double circuit line, conductors belonging to same phase are placed at diagonally opposite sides to

- a) reduce corona effect b) make the per phase power balance c) make line inductance and capacitance same for all phases d) reduce series impedance

iii) Which of the following material is not used for overhead line insulators?

- a) Porcelain b) Glass c) PVC d) Steatite

iv) Which of the following is the main field of application of pin type insulator?

- a) Distribution b) Transmission c) Transmission-distribution d) EHV transmission system

v) Line parameter of a 10 km transmission line having resistance of 0.3 ohms/km and inductance of 1.274 mH/km is given by

- (a) $\begin{bmatrix} 1 & 3+j4 \\ 0 & 1 \end{bmatrix}$ (b) $\begin{bmatrix} 1 & 4+j3 \\ 0 & 1 \end{bmatrix}$ (c) $\begin{bmatrix} 1 & 5 \\ 0 & 1 \end{bmatrix}$ (d) $\begin{bmatrix} 5 & 1 \\ 1 & 0 \end{bmatrix}$

vi) Pin type insulator is mostly subjected to which type of mechanical stress?

- a) Compressive b) Tensile c) Tensile-compressive d) Twisting

GROUP B

(Short Answer Questions)

Answer any four questions

4 X 5 = 20

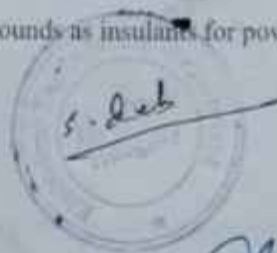
1. Draw the phasor diagram of Medium Transmission line as nominal π network and obtain the ABCD constant in terms of line parameters. (5)

2. Find the charging current flowing through each phase of a 500 kV overhead transmission line of 50km long having a bundling arrangement of two conductor per phase as shown in figure. (Assume the line is fully transposed) (5)



4

3. Explain the Ferranti effect with the help of phasor diagram. How does it vary with frequency and length of the line? (5)
4. Write a brief note on vibration of conductor. (5)
5. Define string efficiency. What is the necessity of having high string efficiency? (5)
6. Explain the properties of good dielectric compounds as insulators for power cable? (5)



S. Deb
Electrical Engineering
Hogghy Engineering & Technology College

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

Continuum Evaluation (CA3), March, 2023

Department: EE

Sub: HVDC Transmission

Year: 3rd

Time: - 1 Hour.

Code: PE-EE-601B

Semester: 6th

Full Marks- 25

GROUP A

(Multiple Choice type Questions)

Answer any Five Questions

5 X 1 = 5

1. (i) HVDC monopolar links uses

- (a) One conductor usually of negative polarity
(b) One conductor usually of positive polarity
(c) Two conductors of positive and negative polarity
(d) None of these.

(ii) Identify a valid disadvantage of HVDC transmission lines.

- (a) High radio interference (b) Expensive converters (c) High corona loss (d) Skin effect

(iii) A bipolar DC line has _____ conductor(s).

- (a) Three (b) One (c) Four (d) Two

(iv) Which of the following statement is TRUE in case of a HVDC system?

- (a) neither charging current nor skin effect (b) charging current as well as skin effect
(c) charging current but no skin effect (d) no charging current but skin effect

(v) In case of parallel wires, the visual corona begins

- (a) At disruptive critical voltage,
(b) At visual critical voltage which is higher than disruptive critical voltage.
(c) At lower voltage than disruptive critical voltage.
(d) None of these.

(vi) As the transmission voltage increases, the volume of the conductor

- (a) increases (b) decreases (c) will not change (d) will increase proportionately

(vii) EHV DC transmission over large distance

- (a) Is cheaper than EHV AC transmission. (c) Is costlier than EHV AC transmission.
(b) No comparison exists. (d) None of these.

GROUP B
(Short Answer type Questions)
Answer any Four question

4 X 5 = 20

2. Draw and explain a simple HVDC system. [2+3]
3. Discuss the advantages and disadvantages of HVDC transmission system. [2.5 + 2.5]
4. Derive an expression for output voltage and current for a six pulse converter for firing angle ' α ' and commutation angle ' μ '. [5]
5. Why reactive power control is required in HVDC transmission line? What are the sources of reactive power? [5]
6. How the reactive power flow is controlled in power transmission? Why reactive power cannot be transmitted over long distances? [5]
7. What are the types of DC links? Briefly explain all of them. [2+3]




H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

Continuous Evaluation (CA3), March, 2024

DEPARTMENT: ELECTRICAL ENGINEERING

Subject: Digital Electronics

Code: PC-EE 402

Year: 2nd

Sem: 4th

Time: 1hour

Full Marks: 25

- I. Answer any five of the following questions (5*1=5)
- The NAND gate output will be low if the two inputs are
 - 00
 - 01
 - 10
 - 11
 - The number of control lines for a 8-to-1 multiplexer is
 - 2
 - 3
 - 4
 - 5
 - How many flip-flops are required for mod-16 counter
 - 5
 - 6
 - 3
 - 4
 - A device which converts BCD to seven segment is called
 - Encoder
 - Decoder
 - Multiplexer
 - Demultiplexer
 - The access time of ROM using BJT is about
 - 1 sec
 - 1 msec
 - 1 microsec
 - 1 nsec
 - CMOS circuits consume power
 - Equal to TTL
 - Less than TTL
 - Twice of TTL
 - Thrice of TTL

2. Answer any four of the following questions (4*5=20)

- a) Convert $(1101)_2$ to decimal number.
- b) Convert $(124)_{10}$ to decimal number.
- c) Convert $(99)_{10}$ to Hexadecimal number.
- d) Turn $(2B)_{16}$ into decimal.
- e) What is flip-flop?



[Signature]
F.D.D.
Electrical Engineering
Rajshree Engineering & Technology College

HOOGHY ENGINEERING & TECHNOLOGY COLLEGE

Time Table for Odd Semester 2021

		DEPARTMENT OF ELECTRICAL ENGINEERING				Semester: 5th				EXAM DATE: FROM 14th July, 2021			
Roll No.	Section	09:30 AM - 10:25 AM	10:30 AM - 11:25 AM	11:30 AM - 12:25 PM	12:30 PM - 01:25 PM	01:30 PM - 02:25 PM	02:30 PM - 03:25 PM	03:30 PM - 04:25 PM	04:30 PM - 05:25 PM	05:30 PM - 06:25 PM	06:30 PM - 07:25 PM	07:30 PM - 08:25 PM	08:30 PM - 09:25 PM
Freshers	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Semester	CT												
	CT-1												
	CT-2												
	CT-3												
	CT-4												
Sem													

Hooghly Engineering & Technology College

Assessment Rubrics of Continuous Evaluation (CA1)

Paper Name: Power System-1

Paper Code: PC-EE-502

Component	Marks	Proficient	Acceptable	Needs Improvements
Topic Covered	5	Topic is identified and fully covered.	Topic is mostly identified but not covered fully.	Topic is neither identified nor covered.
Written Communication	5	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow. Diagrams or analyses are clear. Sentences are free from spelling and grammatical errors.	Report is mostly well organized and clearly written. The underlying logic is partially articulated. Diagrams or analyses are mostly clear. Sentences are mostly free from spelling and grammatical errors.	Report lacks an overall organization. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult to understand.
Presentation Visual Aids	5	Slides are error-free and logically present the main contents.	Slides are mostly error-free and almost logically present the main contents.	Slides contain errors and have lack of logic.
Oral Presentation	5	Speakers are audible and fluent on their topic, and do not rely on notes to present or respond.	Speakers are mostly audible and fluent on their topic, and require minimum referral notes.	Speakers are often inaudible or hesitant, often speaking incomplete sentences. Speakers rely heavily on notes.



[Signature]
Hooghly Engineering & Technology College

Hooghly Engineering & Technology College

Assessment Rubrics of Continuous Evaluation (CA1)

Paper Name: Power System-1

Paper Code: PC-EE-502

Component	Marks	Proficient	Acceptable	Needs Improvements
Topic Covered	5	Topic is identified and fully covered.	Topic is mostly identified but not covered fully.	Topic is neither identified nor covered.
Written Communication	5	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow. Diagrams or analyses are clear. Sentences are free from spelling and grammatical errors.	Report is mostly well organized and clearly written. The underlying logic is partially articulated. Diagrams or analyses are mostly clear. Sentences are mostly free from spelling and grammatical errors.	Report lacks an overall organization. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult to understand.
Presentation Visual Aids	5	Slides are error-free and logically present the main contents.	Slides are mostly error-free and almost logically present the main contents.	Slides contain errors and have lack of logic.
Oral Presentation	5	Speakers are audible and fluent on their topic, and do not rely on notes to present or respond.	Speakers are mostly audible and fluent on their topic, and require minimum referral notes.	Speakers are often inaudible or hesitant, often speaking incomplete sentences. Speakers rely heavily on notes.



[Signature]
H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College

**HOOCHLY ENGINEERING AND TECHNOLOGY COLLEGE**

Vivekananda Road, Pipuljati, P.O. & Dist. Hooghly - 712103

Approved by AICTE, and Affiliated to MAKAUT WB

ACADEMIC CALENDAR 2023-2024

Odd Semester (1 st , 3 rd , 5 th & 7 th semesters): July 2023 - December 2023		
Events	For Enrolling New Batch	For Continuing Batch
1	Commencement of Academic Programme	1 st week of September, 2023 & Orientation Programme
2	Admission activities (for existing new students) to be completed by	July 15, 2023
3	Induction Programme for newly admitted students	15 th September, 2023
4	Registration activities (for existing newly admitted students for the session 2023-24) will be completed by	3 rd & 4 th week of September, 2023
5	Enrolment of students (for 3 rd , 5 th & 7 th semester)	As per admission dates. Would be notified separately.
6	Enrolment of students (for 1 st & 3 rd semester-Lateral)	N.A.
7	Continuous Assessment 1 (CA1) (In the form of Power Point Presentation) (for 3 rd , 5 th & 7 th semester)	July 20, 2023 to July 24, 2023 (except 3 rd Sem. Lateral)
8	Submission of Continuous Assessment 1 (CA1) (for 3 rd , 5 th & 7 th semester)	Tentatively by the month of October, 2023
9	Continuous Assessment 2 (CA2) (In the form of Report Writing) & Continuous Assessment for Practical 1 (PCA 1)	N.A.
10	Submission of Continuous Assessment 2 (CA2) & PCA 1	1 st week of August, 2023 (except 3 rd Sem. Lateral)
11	Continuous Assessment 3 (CA3) (In the form of Class Test)	August 11, 2023 to August 14, 2023 (except 3 rd Sem. Lateral)
12	Submission of Continuous Assessment 3 (CA3)	1 st week of September, 2023 & 1 st week of October, 2023 for the 3 rd Sem. Lateral
13	Continuous Assessment 4 (CA4) (In the form of MCQ Online Test, conducted centrally by the University) & Continuous Assessment for Practical 2 (PCA 2)	1 st week of October, 2023
14	Submission of Continuous Assessment 4 (CA4) & PCA 2	2 nd week of October, 2023
15	Pre-Examination activities (Form fill-up etc.)	October 9, 2023 to October 13, 2023
16	Practical, Sessional and Viva-Voce examinations	1 st week of November, 2023
17	Marks submission for Practical, Sessional and Viva-Voce exams	3 rd week of November, 2023
		November 6, 2023 to November 10, 2023
		November 17, 2023 to November 25, 2023
		Last week of November, 2023
		1 st week of December, 2023
		November 28, 2023 to December 2, 2023



Handwritten signature and date: 12/11/23



HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly – 712103

Approved by AICTE and Affiliated to MAERLIT WB

ACADEMIC CALENDAR 2023-2024

18	Theory Examinations	2 nd week to last week of December, 2023	December 4, 2023 to December 22, 2023
19	Inter Semester Break	After theory Examinations to January 1, 2024	December 23, 2023 to January 1, 2024
22	Publication of Result	Results will be announced in the Univ. website (Tentatively by April 30, 2024)	
23	Dates of MARK upload by the college	August 1, 2023 to December 31, 2023	
24	Dates of MOOC's upload by the students and verification by the college for Honours cases	August 1, 2023 to May 31, 2024	
During Inter-Semester-Break (Summer), Practical Training (where applicable) may be conducted.			
Separate Supplementary Examinations for final year student will be held tentatively in March, 2024. Details will be available in the University website in due course.			
Announcement regarding Special Trainings will be available in the College website/web portal in due course			Tentatively 2 nd half of August, 2023
Announcement regarding other activities of University/ College will be available in the University website/College website in due course			Based on University/College notification



[Handwritten Signature]
12/11/23

[Handwritten Signature]

H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College

1.1.1

Documents related to remedial or doubt clearing class

Remedial cell class attendance

Class Roll Number	Student's Name	Signature with Date
35	SOUNOJEET SARKAR	Sounojeet Sarkar 28/01/23
36	BISHAL BHUJNYA	Bishal Bhunya 28/01/23
21	PAITAM ROY	Paitam Roy 28/01/23
17	Swanda Nandi	Swanda Nandi 28/01/23
59	Pranab Mandal	Pranab Mandal 28/01/23
25	SOUNOJEET SARKAR	Sounojeet Sarkar 28/01/23
53	DEBJYOTI NATH	Debjyoti Nath 28/01/23
28	DENJYOTI BANERJEE	Denjyoti Banerjee 28/01/23
45	SOURADIP GHOSH	Souradip Ghosh 28/01/23
55	BIPROJEET DEY	Biprojeet Dey 28/01/23
44	SAIKAT DAS	Saikat Das 28/01/23
54	DEEPAKSHYA GHOSH	Deepakshya Ghosh 28/01/23
51	SA ANIK	Sa Anik 28/01/23
26	Shreya Ghosh [SREJEETA GHOSH]	Shreya Ghosh 28/01/23
08	SIRJAN RAY	Sirjan Ray 28/01/23
02	SPANDAN BANDYOPADHYAY	Spandan Bandyopadhyay 28/01/23
92	SOHAM KUNDU	Soham Kundu 28/01/23
39	QIANDARA SARKAR	Qiandara Sarkar 28/01/23
32	RUPAM KUNDU	Rupam Kundu 28/01/23
04	Shrawan Biswas	Shrawan 28/01/23
64	Rupayan Nath	Rupayan Nath 28/01/23
67	Sanmita Ghosh	Sanmita Ghosh 28/01/23
11	Daiba seli	Daiba seli 28/01/23
47	Abhisa Koley	Abhisa Koley 28/01/23
57	Manali Ghosh	Manali Ghosh 28/01/23
49	Ananya Pan	Ananya Pan 28/01/23
12	Ankita Debbarth	Ankita Debbarth 28/01/23
52	MONAMI SARKAR	Monami Sarkar 28/01/23
80	Shirna Roy	Shirna Roy 28/01/23
72	Monika Datta	Monika Datta 28/01/23
54	Soumi Maji	Soumi Maji 28/01/23



H.O.D.
 Electrical Engineering
 Haughly Engineering & Technology College



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE



DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING

COURSE DIARY

Department: ECE

Year: 4th

Paper Name: Digital Communication and Stochastic Process

Contact/Week: 01

Available Weeks: 12

Name of the Faculty: Dr. Ankan Bhattacharya

Session: 2023-24

Semester: 5th

Paper Code: EC 503

Credit: 3.5

No. of Periods: 01

Designation: Assoc. Professor

Module	Lecture No	Tutorial No	Topic/Topics covered	Date	Comments
I	1		Introduction to Stochastic Processes (SPs): Definition and examples of SPs	22.07.2023	Completed
	2		Classification of random processes according to state space and parameter space, elementary problems.	31.07.2023	"
	3		Stationary and Ergodic Process	19.08.2023	"
	4		Stationary and Ergodic Process, PDF, CDF, PMF, correlation coefficient, covariance, autocorrelation and its properties	02.09.2023	"
	5		Definition and example of Markov Chain; Transition probability matrix	16.09.2023	"
	6		Definition and example of Markov Chain; Transition probability matrix	19.09.2023	"
	7		Random binary wave	20.09.2023	"
	8		Power spectral density	22.09.2023	"
	9		Chapman Kolmogorov equation	29.09.2023	"
	10		Calculation of n-step transition probabilities	11.10.2023	"
	11		Problems on random variables (Extra)	12.10.2023	"
	12		Problems on Markov Chain (Extra)	13.10.2023	"
	13		Extra Class	04.11.2023	-
	14		Remedial Class	10.11.2023	-

Allocated Classes	Classes Taken	Extra Class Taken	Remedial Class Taken
10	14	03	01

Remarks: _____

Ankan Bhattacharya . 10.11.23
Signature of the Faculty

Remarks: _____

Ankan Bhattacharya . 10.11.23
Signature of the HOD
Head of the Department (HOD)
Dept. of Electronics and Communications Engg.
Hooghly Engineering & Technology College

89 10.11.23
Principal in Charge
Hooghly Engineering & Technology College
Sivakananda Road, Pipulpathi, Hooghly

Remedial cell class attendance

Class Roll Number	Student's Name	Signature with Date
35	SOUNOJEET SARKAR	Sounojeet Sarkar 28/01/23
36	BISHAL BHUJNYA	Bishal Bhunya 28/01/23
21	PAITAM ROY	Paitam Roy 28/01/23
17	Swanda Nandi	Swanda Nandi 28/01/23
59	Pranab Mandal	Pranab Mandal 28/01/23
25	SOUNOJEET SARKAR	Sounojeet Sarkar 28/01/23
53	DEBJYOTI NATH	Debjyoti Nath 28/01/23
28	DENJYOTI BANERJEE	Denjyoti Banerjee 28/01/23
45	SOURADIP GHOSH	Souradip Ghosh 28/01/23
55	BIPROJEET DEY	Biprojeet Dey 28/01/23
44	SAIKAT DAS	Saikat Das 28/01/23
54	DEEPAKSHYA GHOSH	Deepakshya Ghosh 28/01/23
51	SA ANIK	Sa Anik 28/01/23
26	Shreya Ghosh [SREJEETA GHOSH]	Shreya Ghosh 28/01/23
08	SIRJAN RAY	Sirjan Ray 28/01/23
02	SPANDAN BANDYOPADHYAY	Spandan Bandyopadhyay 28/01/23
92	SOHAM KUNDU	Soham Kundu 28/01/23
39	QIANDITA SARKAR	Qiandita Sarkar 28/01/23
32	RUPAM KUNDU	Rupam Kundu 28/01/23
04	Shamanta Biswas	Shamanta Biswas 28/01/23
64	Rupayan Nath	Rupayan Nath 28/01/23
67	Sanmita Ghosh	Sanmita Ghosh 28/01/23
11	Daiba seli	Daiba seli 28/01/23
47	Abhisa Koley	Abhisa Koley 28/01/23
57	Manali Ghosh	Manali Ghosh 28/01/23
49	Ananya Pan	Ananya Pan 28/01/23
12	Ankita Debbarth	Ankita Debbarth 28/01/23
52	MONAMI SARKAR	Monami Sarkar 28/01/23
80	Shirsa Roy	Shirsa Roy 28/01/23
72	Monika Datta	Monika Datta 28/01/23
54	Soumi Maji	Soumi Maji 28/01/23



H.O.D.
 Electrical Engineering
 Haughly Engineering & Technology College

Remedial Class

HOOGLY ENGINEERING &

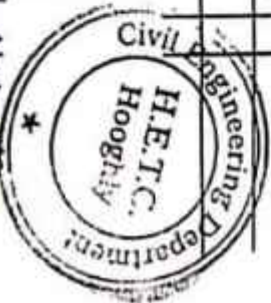
TECHNOLOGY COLLEGE

Vivekananda Road,
Attendance for the month

Hooghly 2019-2020 Year ODP SEM
at the
Subject: Foundation Engineering Semester: 5th

Teacher's Name: Arpita Chattopadhyay

No.	Name of Student	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Remarks		
	Taniya Roy	P	.	P	.																														
	Titan Mandal	P	.	P	.																														
	Sauri Koley	P	P	P	P	P																													
	Souket Saha	P	.	P	.	P																													
	Md Javed	P	P	P	P	P																													
	Ipkita Sanjal	P	P	P	P	P																													
	Ankit Manna	P	.	P	.	P																													
	Amrita Das	P	.	P	.	P																													
	Sukalatten Dey	P	.	P	.	P																													
	Tusharika Biswas	P	.	P	.	P																													
	Salarnali Mandal	P	.	P	.	P																													
	Subhomkar Jana	P	.	P	.	P																													
	Sanjukta Mitra	P	.	P	.	P																													
	Rangesta Roy	P	P	P	P	P																													
	Namrata Dutta	P	.	P	.	P																													
	Indranil Saha	P	.	P	.	P																													
	Bidisha Pal	P	.	P	.	P																													
	Arjit Datta	P	.	P	.	P																													



A. Chattopadhyay
11/09/19

Remedial Class

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Attendance for the month

Hoogly
at the 2019-20 Year Even SEM

Subject: Pre stressed concrete

Semester: 6th

Teacher's Name: Sribalish Deb

No.	Name of Student	8/12	10/12	12/12	14/12	16/12	18/12	20/12	22/12	24/12	26/12	28/12	30/12	Remarks
	Tilen Mondal	P	P	.	.	.	.	.	.	.	.	.	.
	Tanisha Roy	P	.	P	.	.	.	.	.	.	.	.	.
	Sushranta Mondal	P	.	P	.	.	.	.	.	.	.	.	.
	Subhankar Jana	P	.	P	.	.	.	.	.	.	.	.	.
	Sanjukta Mitra	P	P	.	P	.	.	.	.	.	.	.	.
	Saikat Saha	P	P	.	P	.	.	.	.	.	.	.	.
	Namrata Datta	P	P	.	P	.	.	.	.	.	.	.	.
	Kaushik Das	P	.	P	.	.	.	.	.	.	.	.	.
	Abhishek Ghosh	P	P	.	P	.	.	.	.	.	.	.	.
	Tupai Debnath	P	P	.	P	.	.	.	.	.	.	.	.
	Sukalayan Dey	P	.	P	.	.	.	.	.	.	.	.	.
	Souvan Bismas	P	.	P	.	.	.	.	.	.	.	.	.
	Shalu Roy	P	.	P	.	.	.	.	.	.	.	.	.
	Sourik Ghosh	P	P	.	P	.	.	.	.	.	.	.	.
	Soyak Mondal	P	P	.	P	.	.	.	.	.	.	.	.
	Sandip Das	P	P	.	P	.	.	.	.	.	.	.	.
	Pratibha Mondal	P	P	.	P	.	.	.	.	.	.	.	.
	Padmani Kundu	P	P	.	P	.	.	.	.	.	.	.	.

Sribalish Deb
20/03/2020



Remedial class

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Attendance for the month

TECHNOLOGY COLLEGE

Hooghly
at the 2022-23 Year, ODD SEM

Subject: Engineering Hydrology, Semester: 5th

Teacher's Name: SOUMYA KANTA RAY

No.	Name of Student	20/09/22	21/09/22	22/09/22	23/09/22	24/09/22	25/09/22	26/09/22	27/09/22	28/09/22	29/09/22	30/09/22	01/10/22	02/10/22	03/10/22	04/10/22	05/10/22	06/10/22	07/10/22	08/10/22	09/10/22	10/10/22	11/10/22	12/10/22	13/10/22	14/10/22	15/10/22	16/10/22	17/10/22	18/10/22	19/10/22	20/10/22	21/10/22	22/10/22	23/10/22	24/10/22	25/10/22	26/10/22	27/10/22	28/10/22	29/10/22	30/10/22	Remarks											
	Krishnanda Das	P	.	P	.																																																	
	Rahul Sankhyan	P	.	P	.																																																	
	Soumya North	P	.	P	.																																																	
	Ponekam Ram	P	P	.	.																																																	
	Sutara Das	P	.	P	.																																																	
	Soham Chatterjee	P	P	.	.																																																	
	Pramis Jari	P	P	.	.																																																	
	MD Nizam	P	.	P	.																																																	
	Subho Kumar Pal	P	.	P	.																																																	
	Prityo Ghosh	P	P	.	.																																																	
	Sanket Aich	P	P	P	P																																																	
	Aropon Pramanik	P	.	P	.																																																	
	Ms Altaba Rajia	P	P	P	P																																																	
	Sagar Roy	P	.	P	.																																																	
	Soheli Bandyopadhyay	P	.	P	.																																																	
	Pallab Ghosh	P	.	P	.																																																	
	Soham Chatterjee	P	.	P	.																																																	
	Susmita Ghosh	P	.	P	.																																																	

Soumya Kanta Ray

17/09/2022



Remedial Class

HOOGLHY ENGINEERING & VIVEKANANDA ROAD,

TECHNOLOGY COLLEGE

Attendance for the month

Teacher's Name: Shibasish Deb

HooGLHY 2022-23 Year Even Sem
 at the
 Subject: Design of Steel Structures Semester: 6th

No.	Name of Student	10/0	11/0	12/0	13/0	14/0	15/0	16/0	17/0	18/0	19/0	20/0	21/0	22/0	23/0	24/0	25/0	26/0	27/0	28/0	29/0	30/0	Remarks
	Sanket Aich	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Aypan Pramanik	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Sayantan Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Keskar Kumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	MD Altab Ray	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Sagon Ray	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Abhirup Das	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Manalika Hossain	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Ayem Mukherjee	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Arjit Hazra	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Naynika Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Savit Kundu	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Subrata Ghosh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	MD Nirzom	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Subho Kumar Pal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Krishanu Saha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Ralit Ray	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Sagnik Naskar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

Shibasish Deb
 07/04/2023



Remedial class

HOOGLY ENGINEERING & TECHNOLOGY COLLEGE

Vivekananda Road,
Attendance for the month

TECHNOLOGY COLLEGE

Hooghly
at the 2023-24 Year ODD Sem
Subject:- Gate class

Teacher's Name :- Saikot Datta

Semester :- 5th

No.	Name of Student	Attendance				Remarks
		24/08	31/08	F/09	H/09	
	Dobdatta Manma	P	.	.	P	
	Sohita Chatterjee	P	.	.	P	
	Srishti Ghosh	P	.	.	P	
	Snigdha Ghoshal	P	P	P	.	
	Rintu Beza	P	P	P	.	
	Atiti Mishra	P	.	P	.	
	Saenab Malik	P	.	P	.	
	Rajju Khamaru	P	P	.	P	
	Puja Ghosh	P	P	.	P	
	Animesh Bhakta	P	.	P	P	
	Rahul Kumar	P	P	.	.	
	Alokjit Halder	P	P	.	.	
	Ritem Ghosh	.	F	.	.	
	Nilanjana Mondal	.	P	P	P	
	Somnath Dey	.	.	P	P	
	Sinclair Datta	.	.	P	P	
	Puja Jana	.	.	P	P	
	Susmit Saha	.	.	P	P	



Saikot Datta 14/09/2024

1.1.1

MOOCs certificates

UCI Division of Continuing Education

Apr 15, 2023

NAYAN DAS

has successfully completed

Communication in the 21st Century Workplace

an online non-credit course authorized by University of California, Irvine and offered through Coursera



Diane Spiegel,
Executive Coach

COURSE
CERTIFICATE



Verify at:
<https://coursera.org/verify/L7V26SCJZFYK>

Coursera has confirmed the identity of this individual and their participation in the course.



Certificate no: UC-fe61036b-cbca-41ac-b579-a34902c48a3f

Certificate url: ude.my/UC-fe61036b-cbca-41ac-b579-a34902c48a3f

Reference Number: 0004

CERTIFICATE OF COMPLETION

HTML 5, Python, Flask Framework All In One Complete Course

Instructors **Horizon Tech**

Nayan Das

Date **May 13, 2023**

Length **9.5 total hours**



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to
SOURAV SARKAR
for successfully completing the course

The Joy of Computing using Python

with a consolidated score of **49** %

Online Assignments	17.97/25	Proctored Exam	30.86/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **10672**

Prof. Devendra Jalihal
Chairperson,
Centre for Outreach and Digital Education, IITM

Jan-Apr 2023
(12 week course)

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras



Indian Institute of Technology Madras



Roll No: NPTEL23CS20S33020034

To validate the certificate



No. of credits recommended: 3 or 4



Virtual Internship Completion Certificate

This is to certify that

Ayush Choudhary

Hooghly Engineering & Technology College

has successfully completed 10 weeks

AWS Cloud Virtual Internship

during December 2022 - February 2023

Supported By  academy



Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE



Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills



Certificate ID :1373ccb986ed6f4d23cf1f7753a0effc

Student ID :STU638dfef8ba75c1670250232

CERTIFICATE OF BRILLIANCE

Eduonix Learning Solutions Congratulates

Arnab Paul

On Successfully Completing the

**"Learn Designing Using Adobe Photoshop
from Scratch"**

on April 14, 2024.

Upskill With Eduonix

Sushant Das

SIGNATURE



[www.eduonix.com/certificate/
255bb8ab84](http://www.eduonix.com/certificate/255bb8ab84)





LearnVern
Franchise of TOPS Technologies

CERTIFICATE OF TRAINING

This is to certify that

CHIRANJIV KUMAR

having CAN_13547328 has successfully completed training in
**Certified Digital Forensics and Cyber
Crime Investigator**
from the period Oct 2021 - Nov 2021
at **LEARNVERN PVT LTD.**

Date of Issue: 30-11-2021

Place: 6th Floor, Arjun Complex,
Shivranjani Cross Road,
Ahmedabad, Gujarat 380009

Certificate Id: CAN_135473281439936



<https://www.learnvern.com/>

Signing Authority:



Issued by: LEARNVERN
Franchise of TOPS Technologies Pvt Ltd.
An Approved Training Partner of NSDC



LearnVern
Franchise of TOPS Technologies

CERTIFICATE OF TRAINING

This is to certify that

CHIRANJIV KUMAR

having CAN_13547328 has successfully completed training in

Excel for Data Analysis

from the period Oct 2021 - Nov 2021

at LEARNVERN PVT LTD.

Date of Issue: 22-11-2021

Certificate Id: CAN_135473281419429

Signing Authority:



Place: 6th Floor, Arjun Complex,
Shivranjani Cross Road,
Ahmedabad, Gujarat 380009



<https://www.learnvern.com/>

Issued by: LEARNVERN
Franchise of TOPS Technologies Pvt Ltd.
An Approved Training Partner of NSDC



ISB

May 9, 2022

SAMPURNA PAL

has successfully completed

A Life of Happiness and Fulfillment

an online non-credit course authorized by Indian School of Business and offered through Coursera

Rajagopal Raghunathan

Rajagopal Raghunathan, PhD
McCombs School of Business
Indian School of Business

COURSE
CERTIFICATE



Verify at:

<https://coursera.org/verify/DKYPEMN2B614>

Coursera has confirmed the identity of this individual and their participation in the course.



CERTIFICATE OF COMPLETION

Presented to

Shibam Mishra

For successfully completing a free online course
Machine Learning with Python

Provided by

Great Learning Academy

(On March 2024)



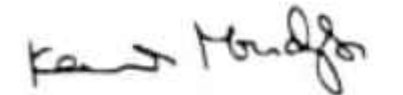
Spoken Tutorial
Project at
IIT Bombay

Certificate for Completion of Introduction to Computers Training

This is to certify that **SUBHRAJYOTI MANDAL** has successfully completed **Introduction to Computers** test organized at **Hooghly Engineering & Technology College** by **JAGADISH BHATTACHARYA** with course material provided by the Spoken Tutorial Project, IIT Bombay. Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training.

SWARUP SAMANTA from **Hooghly Engineering & Technology College** invigilated this examination. This training is offered by the Spoken Tutorial Project, IIT Bombay.

June 2nd 2022


Prof. Kannan M Moudgalya
IIT Bombay

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: NPTEL22CS31S23650418

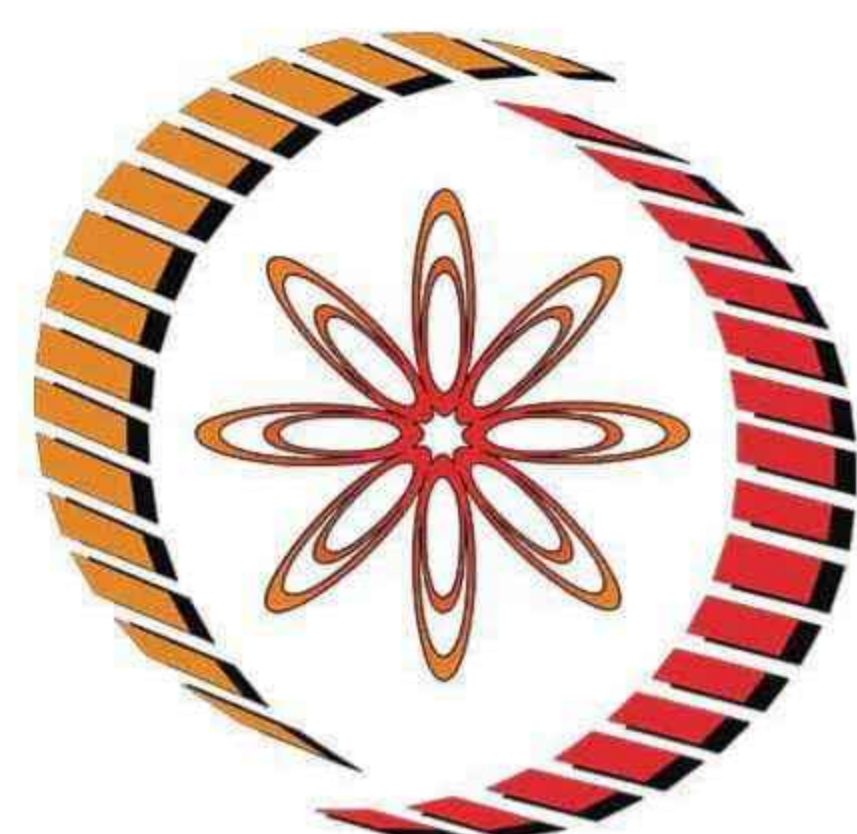
To
SAMPURNA PAL
123/62, PANCHANANTALA, SHIBTALA BYE LANE
SHEORAPHULLY, HOOGHLY
SHEORAPHULLY
WEST BENGAL - 712223
PH. NO :7980453673



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

SAMPURNA PAL

for successfully completing the course

The Joy of Computing using Python

with a consolidated score of **70** %

Online Assignments	24.94/25	Programming Exam	25/25	Proctored Exam	20/50
--------------------	----------	------------------	-------	----------------	-------

Total number of candidates certified in this course: **7438**

Devendra Jalihal

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Andrew Thangaraj

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras



Indian Institute of Technology Madras





Certificate no: UC-09c0748e-d01e-4cd1-be17-90b87b34fd35

Certificate url: ude.my/UC-09c0748e-d01e-4cd1-be17-90b87b34fd35

Reference Number: 0004

CERTIFICATE OF COMPLETION

C++ Code Like you are in MATRIX : Mastering C++ in 12 Hours

Instructors **OCSALY Academy | 340.000+ Students - Ethical Hacking**

Sampurna Pal

Date **May 4, 2024**

Length **12 total hours**



ISB

10-Jul-2021

Bishnu Debnath

has successfully completed

A Life of Happiness and Fulfillment

an online non-credit course authorized by Indian School of Business and offered through
Coursera

Rajagopal Raghunathan

Rajagopal Raghunathan, PhD
McCombs School of Business
Indian School of Business

COURSE
CERTIFICATE



Verify at coursera.org/verify/U9F8LV9U8RUB

Coursera has confirmed the identity of this individual and their
participation in the course.

Verified Certificate



Joseph Santarcangelo
Data Scientist

IBM

This is to certify that

Bishnu Debnath

successfully completed and received a passing grade in

PY0101EN: Python Basics for Data Science

a course of study offered by IBM, an online learning initiative of IBM.



Verified Certificate
Issued March 27, 2021

Valid Certificate ID
[a4b446cb324e40caba7db4314cf502c0](https://courses.edx.org/certificates/a4b446cb324e40caba7db4314cf502c0)



Certificate no: UC-08b60081-d4ee-400a-98cf-48914e6e7665

Certificate url: ude.my/UC-08b60081-d4ee-400a-98cf-48914e6e7665

Reference Number: 0004

CERTIFICATE OF COMPLETION

Financial Statement Analysis – Ratio Analysis

Instructors **Robert (Bob) Steele**

Bishnu Debnath

Date **Feb. 16, 2023**

Length **24.5 total hours**

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: NPTEL22CS31S23650504

To
SUBHARA SAMANTA
DASHANI GANDARPUKUR, SINGUR, HOOGHLY
WEST BENGAL - 712409
PH. NO :6290296962



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

SUBHARA SAMANTA

for successfully completing the course

The Joy of Computing using Python

with a consolidated score of **70** %

Online Assignments	24.81/25	Programming Exam	25/25	Proctored Exam	20.22/50
--------------------	----------	------------------	-------	----------------	----------

Total number of candidates certified in this course: **7438**

Devendra Jalihal

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Prof. Andrew Thangaraj

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras



Indian Institute of Technology Madras



This certificate is computer generated and can be verified by scanning the QR code given below. This will display the certificate from the NPTEL repository, <https://nptel.ac.in/noc/>

Roll No: NPTEL21CE04S11740018

To
SUBINIT NANDI
B-14/13, KALYANI, NADIA, WEST BENGAL
PO:KALYANI, NIMTALA BUS STAND
KALYANI
WEST BENGAL - 741235
PH. NO :8777253745



Score	Type of Certificate
≥ 90	Elite+Gold
75-89	Elite+Silver
≥ 60	Elite
40-59	Successfully Completed
< 40	No Certificate

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

SUBINIT NANDI

for successfully completing the course

Plastic Waste Management

with a consolidated score of **61** %

Online Assignments	23.33/25	Proctored Exam	38/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: **1651**


Prof. G P Raja Sekhar
Dean, Continuing Education
IIT Kharagpur

Jan-Mar 2021
(8 week course)


Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No:NPTEL21CE04S11740018

To validate and check scores: <https://nptel.ac.in/noc/>



Technical University
of Denmark

Sep 15, 2020

Subinit Nandi

has successfully completed

Wind Energy

an online non-credit course authorized by Technical University of Denmark (DTU) and offered through Coursera

COURSE
CERTIFICATE



Handwritten signatures of course instructors

Merete Badger, Alma Salnaja, Lars Pilgaard Mikkelsen, Ameysa Sathe, Vladimir Fedorov, Tom Cronin, Torben Krogh Mikkelsen, Morten Hartvig Hansen, Niels-Erik Clausen, Bonnie Ram, Sven-Erik Gryning, Kim Branner, Poul Ejnar Sørensen, Hilmar Kjartansson Danielsen, Henrik Bredmose

Verify at coursera.org/verify/KF7VEX5TKNAJ

Coursera has confirmed the identity of this individual and their participation in the course.

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: NPTEL22CE40S33650132

To
SOUVIK SARKAR
3NO DURGANAGAR, CHAKDAHA, NADIA
3NO DURGANAGAR, CHAKDAHA, NADIA
CHAKDAHA
WEST BENGAL - 741222
PH. NO : 7477577628



Score	Type of Certificate
≥ 90	Elite+Gold
75-89	Elite+Silver
≥ 60	Elite
40-59	Successfully Completed
< 40	No Certificate

No. of credits recommended by NPTEL:3

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

SOUVIK SARKAR

for successfully completing the course

Basic Construction Materials

with a consolidated score of **51** %

Online Assignments	21.44/25	Proctored Exam	30/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: 975

Devendra Jalihal

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Andrew Thangaraj

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras



Indian Institute of Technology Madras





Certificate no: UC-bf40b72d-e29f-4f80-9681-4c099f11fee9

Certificate url: ude.my/UC-bf40b72d-e29f-4f80-9681-4c099f11fee9

Reference Number: 0004

CERTIFICATE OF COMPLETION

Android App Development in 33 Hours Bootcamp | Android 13

Instructors **OCSALY Academy** | 180.000+ Students

Subhankar Pal

Date **March 23, 2023**

Length **33 total hours**



May 31, 2022

ANKUSH MANDAL

has successfully completed

Programming for Everybody (Getting Started with Python)

an online non-credit course authorized by University of Michigan and offered through Coursera

A handwritten signature in black ink, appearing to read 'Charles', followed by a horizontal line.

Charles Severance
Clinical Professor, School of Information
University of Michigan

COURSE
CERTIFICATE



Verify at:
<https://coursera.org/verify/NL93F29ZWGRU>

Coursera has confirmed the identity of this individual and their participation in the course.



Certificate no: UC-6aaa7693-3d6d-4388-8ebe-4d0a4dc9f865
Certificate url: udemy.com/certificate/UC-6aaa7693-3d6d-4388-8ebe-4d0a4dc9f865
Reference Number: 0004

CERTIFICATE OF COMPLETION

Javascript Practicals Crash Course

Instructors **PROPER DOT INSTITUTE**

Ankush Mandal

Date **May 31, 2022**

Length **38 total mins**

1.1.1

Documents related to guest lectures, workshops, industry visit and conferences, seminar/webinar.

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly – 712103



Date:31/03/2023

NOTICE

It is notified to all that our CSE and ECE departments are going to organise a one day national conference on "Emerging Technologies in Computer Science and Electronics" on 1st April 2023. To ensure the smooth conduct of this program, an organisation committee is formed. The members of this committee are as follows:

Reception (welcome expert and guest):	Mr. Jagadish Bhattacharya, Mr. Sumanta Daw
Stage (Sound system and others):	Mr. Ranjit Majhi, Mr. Debdas Pramanik
On-line monitoring:	Mr. Manab Kumar Saha, Mr. Sumanta Daw, Mr. Subhojit Malik
Design (Flayer, Certificate, Poster etc.):	Mr. Subhajit Roy, Mr. Pritam Biswas, Mr. Shyamal Pal,
Registration (Attendance, Certificate distribution):	Ms. Mousumi Ojha, Ms. Susmita Biswas, Ms. Mousumi Roy
Food committee (Tea and Snacks):	Mr. Sandeep Bhowmik, Mr. Biswajit Basak
Volunteer (Stage):	Mr. Sirshendu Hore, Mr. Sandeep Bhowmik, Mr. Manish Kumar Singh, Ms. Shyamali Gayen Ms. Sanghamitra Das, Mr. Deb Kumar Sheet
Camera recording (still and video):	Mr. Sourav Chowdhury, Ms. Shyamali Gayen

S Bose
31/03/23

Principal, HETC



SMS
HOD/DIC/Coordinator
Dept. of ECE, HETC, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
**National Conference on "Emerging Technologies in Computer
Science and Electronics"**

Organized by: Department of Computer Science and Engineering and Department
of Electronics and Communications Engineering

Date: 1st April, 2023 Venue: Seminar Hall, HETC

PROGRAM SCHEDULE	
INAUGURAL SESSION	
10:00am	Welcome the guests onto the dais
10:05am	Welcome note
10:10am	Greetings with bouquet
10:15am	Inauguration by lighting the lamp
10:20am	Speech by Prof.(Dr.) Avijit Maity, Secretary, HETCS
10:25am	Speech by Prof.(Dr.) Subhasis Bose, Principal, HETC
10:30am	Tea Session
TECHNICAL SESSION I (OFFLINE)	
10:45am	"Overview of Biomechatronics" by Dr. Tanmay Pal, Assistant Professor, School of Mechatronics and Robotics, IEST Shibpur
11:45am	Felicitations
11:50am	Photo session
TECHNICAL SESSION II (ONLINE)	
12noon	"Advances in AI and its applications" by Prof(Dr.) C.M.Jadhao, Principal and Professor, Mauli College of Engineering and Technology, Shegaon
TECHNICAL SESSION III (ONLINE)	
3pm	"5G: Emerging Technology and its implementation" by Prof.(Dr) Ajay P Thakare, Professor, Electronics and Communication Engineering, Sipna College of Engineering, Amravati
4pm	Vote of thanks
4:15pm	Tea Session

About the Speaker



Dr. Tanmay Pal obtained his B. Tech. in Electronics and Instrumentation Engineering from University of Kalyani and M. Tech. in Mechatronics from IITM, Shibpur. After that, he worked as JRF in CSIR IITM for two years. Then he joined the Electrical Engineering Department of IIT Kharagpur to pursue his doctoral research work. After his Ph.D., Dr. Pal worked in Tupper Institute of Engineering and Technology Patna for two years as Visiting Assistant Professor. From August 2019, Dr. Pal has been associated with the School of Mechatronics and Robotics, IIST, Shibpur. His research interests include Bio-Mechatronics and Control Systems.



Dr. C.M. Judhas is a very renowned professor in Electronics Engineering and he has teaching experience more than 31 years. Dr. Judhas has obtained his B.Sc., M.Sc. and M.E. in Electronics Engineering from Amravati University. Then he pursued his Ph.D. in Fiber Optics from Amravati University. He is currently the principal of Head Group of Institute's College of Engineering and Technology, Shergaon. He has published more than 25 Research Papers and two International Text Books and a Patent. He has worked as Project Consultant and Coordinator for IIT, New York, USA. He has attended many International conferences in various countries. His Research interest include Fiber Optics, Image Processing, CMOS design, Chatting.



Dr. AJAY P. Thakare is a very renowned professor in Electronics and Telecommunication Engineering Department of Sree College of Engineering, Amravati and he has teaching experience of more than 31 years. Dr. Thakare has obtained his B.E. in Electronics and Telecommunication Engineering and M.E. as well as Ph.D. in Electronics Engineering. He has published 33 International and 36 National Journals and presented 9 International and National Conferences. Dr. Thakare has also filed two patents. His Research interests include Communication System, Antenna Design, Mobile Computing and Wireless Communication.

About the Programme

Teaching-learning processes are undergoing radical changes as technology advances in education, which is fostering the emergence of new styles of learning. New e-Alms, artificial intelligence, machine learning, Advanced Microprocessors, Embedded Networking the Internet of Things, computer vision, Data science, etc. solve the problems of information security, mobile computing, wireless communication, Device Modeling and Simulation, Robotics and Automation, Informatics, business analytics, applications, and many more applications areas. Pal are becoming challenging computational tasks. These are the most advancement areas of activity in industry and academia. The aim of the conference is to give a wide exposure to the student on the methods and tools of the emerging area of the advanced computational fields.

Schedule

Inauguration: 10:30am to 11:00 am

Time: 11:00am to 12:00 noon

Keynote Speaker: Dr. Tanmay Pal
IIST, Shibpur, WB

Time: 12:00noon to 1:00 PM

Dr. CM Judhas

Principal Mauli Group of Institution's
College of Engineering and technology Shergaon
Topic: "Advances in AI and its applications."

BREAK (1:00PM to 2:30PM)

Time: 3:00 PM to 4:00 PM

Dr. Ajay Thakare

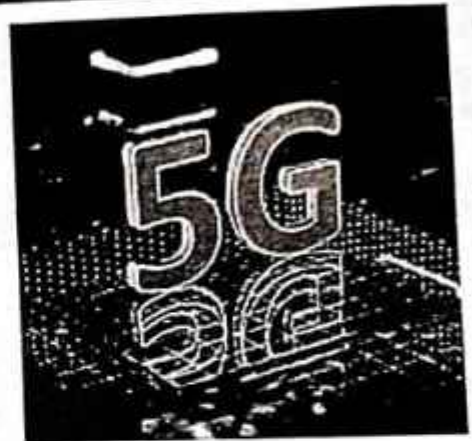
Professor in Electronics Engineering
Sree College of Engineering Amravati
Topic: "5G: Emerging Technology & its Implementation"

Target Participants

UG/PG Students, Faculties and Research Scholar
can attend the national conference.

Registration Fee

There is no registration fee for attending this
national conference.



Registration

A Registration will be done on first come first
serve basis

Link: <https://forms.gle/Dzfu15E6aJwg6E3z6>

Award of Certificate

Each participant will be awarded e-certificate
after successful completion of the national
conference.

Organized by

Electronics and Communications Engineering &
Computer Science and Engineering Department

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly-712103

Hooghly Engineering & Technology College Note Sheet

DATE: 05/04/2023

Please be informed that the Department of Computer Science and Engineering and the Department of Electronics and Communications Engineering of our college organised a National Conference on the topic "Emerging Technologies in Computer Science and Electronics" in hybrid mode on 1st April, 2023. Three guest speakers were present at this conference. One of them Dr. Tanmay Pal (IEST, Shibpur, WB) was present physically and delivered his keynote lecture. Dr. CM Jadhao (Principal, Mauli Group of Institutions College of Engineering and Technology, Shegaon, Maharashtra) and Dr. Ajay Thakare (Professor of Electronics Engineering, Sipna College of Engineering, Amravati, Maharashtra) delivered their presentation in online mode.

We hereby request you to process the payment of an honorarium of Rs.5000/- for each guest speaker. The account details of these three guest speakers are appended below:

A/C Name: TANMAY PAL

A/C No.: 31655866688

SBI BESU Branch, IFSC: SBIN0014553

A/C Name: CHANDRAKANT MADHUKARRAO JADHAO

Account Number: 50100211189382

HDFC Shegaon Branch, IFSC: HDFC0002817

A/C Name: AJAY THAKARE

Bank Name: Axis Bank

Bank Address: Gulshan Tower, Near Panchsheel Talkies, Amravati

A/C No.: 265010100107464, IFSC: UTIB0000265

Placed for principal for approval.

Biswajit Halder

Dr. Biswajit Halder
HOD, Department of CSE

Swarup Samanta
Mr Swarup Samanta
DIC, Department of ECE

Forwarded to Secretary (HETCS) for n.a. pp.

Secretary
HETCS

For Payment may be made *5/4/23*

Principal

Forwarded to FO for release of
Payment to the Speakers.

FO

5/4/23
5/4/23



HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

National Conference on "Emerging Technologies in Computer Science and Electronics"
Organized by: Department of Computer Science and Engineering and Department of Electronics and Communications Engineering

Date: 1st April, 2023

Venue: Seminar Hall, HETC

ATTENDANCE SHEET

Sl No	NAME(in capital letters)	Department	Year	Signature (for Session 1)	Signature (for Session 2)	Signature (for Session 3)
1.	Dr. BUWAJIT KALDEA	CSE				
2.	Dr. Subhasis Bose	ECE				
3	DIBYENDU SAMANTA	CSE				
4.	AGNIMITA BANERJEE	CSE				
5.	Biswajit Basak	ECE				
6.	ANKAN BHATTACHARYA	ECE				
7.	JAGADISH BHATTACHARYA	ECE				
8.	Sanghamitra Das	CSE				
9.	Mousmi Roy	CSE				
10.	SHYAMAL PAL	CSE				
11.	SANDEEP BHORMIK	CSE				
12.	DEB KUMAR SHEET	ECE				
13.	SUSMITA BISHAS	ECE		S. Biswas		



HOOCHILY ENGINEERING & TECHNOLOGY COLLEGE

National Conference on "Emerging Technologies in Computer Science and Electronics"
Organized by: Department of Computer Science and Engineering and Department of Electronics and Communications Engineering

Date: 1st April, 2023

Venue: Seminar Hall, HETC

ATTENDANCE SHEET						
Sl No	NAME(in capital letters)	Department	Year	Signature (for Session 1)	Signature (for Session 2)	Signature (for Session 3)
6614	MANABKUMAR SAHA	CSE		Manab K. Saha.		
6715	DEBDRASPRAMANIK	CSE				
6816	SHARUP SAMANTA	E.C.E.				
6917	MANISH KUMAR SINGH	E.C.E.				
7018	BIDISHA SENGUPTA	E.C.E.		01/04/23		
7119	SWAGATA CHOUHURY	ECE		11/4/23		
7220	SHYAMALI GRAYEN	ECE		11/4/23		
7321	SIRSHENDU HORE	CSE				
7422	SAMEERITI NANDI	CSE		S. Hore 01.04/23		
7523				@nandi 1.4.23		
7624						
7725						
7826						



HOOGLY ENGINEERING & TECHNOLOGY COLLEGE
National Conference on "Emerging Technologies in Computer Science and Electronics"
Organized by: Department of Computer Science and Engineering and Department of Electronics and Communications
Engineering

Date: 1st April, 2023

Venue: Seminar Hall, HETC

ATTENDANCE SHEET

Sl No	NAME(In capital letters)	Department	Year	Signature (for Session 1)	Signature (for Session 2)	Signature (for Session 3)
53	SOHAM GOSWAMI	CSE	2nd	Soham Goswami	Soham Goswami	Soham Goswami
54	NABANKUR ROY	CSE	2nd	Nabankur Roy	Nabankur Roy	Nabankur Roy
55	SUBHRANIL MONDAL	CSE	2nd	Subhranil Mondal	Subhranil Mondal	Subhranil Mondal
56	SANDIPAN SAMANTA	CSE	2nd	Sandipan Samanta	Sandipan Samanta	Sandipan Samanta
57	ANUBHAB PALIT	ECE	2nd	Anubhab Palit	Anubhab Palit	Anubhab Palit
58	SOURAV NANDI	ECE	3rd	Sourav Nandi		
59	Rudradeb Chatterjee	ECE	3rd	Rudradeb Chatterjee	Rudradeb Chatterjee	
60	SUDIP BANERJEE	CSE	2nd	Sudip Banerjee	Sudip Banerjee	Sudip Banerjee
61	Sayantan Mallik	ECE	3rd	Sayantan Mallik		
62	Vidita Mishra	CSE	2ND	Vidita Mishra	Vidita Mishra	Vidita Mishra
63	Swija Majumder	CSE	2ND	Swija Majumder	Swija Majumder	Swija Majumder
64	Ranajit Das	CSE	2ND	Ranajit Das	Ranajit Das	Ranajit Das
65	Amit Mondal	ECE	2nd	Amit Mondal	Amit Mondal	Amit Mondal

LIVE EVENT



HETC

Hooghly Engineering & Technology College

2023 EMBEDDED SYSTEM AND ITS APPLICATION

Seminar organized by
Electronics And Communications
Engineering Department

**SATURDAY,
FEB 25TH**

HETC SEMINAR HALL

OUR SPEAKER:



DR. SWARUP KUMAR MITRA

Professor & HOD

Department of ECE,

MCKV Institute of Engineering

ece@hetc.ac.in

www.hetc.ac.in

REGISTER NOW



<https://forms.gle/UAjDyxRwD5ZLVNdGA>

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
VIVEKANANDA ROAD, PIPULPATI
P.O. & DIST: HOOGLHY
PIN-712103



24.02.2023

NOTICE

This is to inform all the staff members of the college that the Electronics & Communications Engineering department is organizing a seminar on the topic "Embedded Systems and its Applications" on 25th February 2023 Saturday at 11:00 am in the college seminar room, to be delivered by Prof. (Dr.) Swarup Kumar Mitra, Head, Electronics and Communication Engineering Department, MCKV Institute of Engineering. All are cordially invited to attend the program.

Copy to:

1. President, GB, HETC & HETCS.
2. Secretary, HETCS.
3. Principal-in-charge, HETC.
4. All HODs, DICs, and Coordinators.
5. Copy to file



(MR. SWARUP SAMANTA)

DIC (ECE), HETC
DIC, ECE Deptt.
HETC, Hooghly.



Mathematical Description of the Individual Growth

- 1. Mathematical description of growth and development of an individual in terms of growth and development.
- 2. Mathematical description of growth and development of an individual in terms of growth and development.

Estabulqurt, Rishikesh Pathy, Near Shivkamanada Park, H I T College, Chinsurah R5, Chinsurah, West Bengal 712703, India

Chinsurah
West Bengal
India

2023-02-25(Sat) 11:29(am)



Pogulpati, Rishikesh Pally, Near Vivekananda Road, H I T College, Chinsurah R 5, Chinsurah, West Bengal 712103, India

Chinsurah
West Bengal
India



32°C
90°F

2023-02-25(Sat) 12:36(pm)



Google





ABOUT THE DEPARTMENT

The Electronics and Communications Engineering (ECE) Department's program is designed to guide the student to achieve technical competency, effective communication and leadership skills and suitably utilize them while working in projects, multi-disciplinary teams and society. To meet these goals, the ECE program strongly integrates with the core of discovery and emphasizes on holistic development of the students.



OUR INSTITUTE
Vivekananda Road, Pipulpati, Hooghly



OUR CONTACT
033 26810505



OUR WEBSITE
www.hetc.ac.in



EMBEDDED SYSTEM AND ITS APPLICATION

February 25th, 2023



Organized by
ECE Department, HETC

www.hetc.ac.in

About the Programme

Embedded systems engineering is full of opportunities to impact the everyday lives of people around the world. The global market for embedded systems continues to increase each year, with a recent report by analysts at Research and Markets projecting a global annual market growth rate of 6.5% CAGR up to 2024. With diverse applications in communications, consumer electronics, automotive, aerospace & defence, healthcare, and energy, embedded systems technology is poised to play a major role in transforming how we interact with technology in our everyday lives. We invite you to attend this seminar on Embedded System and its Application. The programme is scheduled on February 25, 2023.

About the Speaker



Dr. Swarup Kumar Mitra is currently working as Professor and HOD in the Department of ECE, MCKV Institute of Engineering, Liluah, Howrah. His subject of interest is Embedded Systems, FPGA etc.

Programme Pre-requisite

- ✓ Knowledge of basic electronics and digital system design
- ✓ Basic knowledge on computer programming

Curriculum

- ✓ Embedded System and its Application
- ✓ Understanding the elements of embedded systems in general and their applications.
- ✓ Apply the concepts of embedded systems in allied domains
- ✓ Design an Embedded System using basic building block approach.

Expected Outcome

At the end of this course participant must be able to

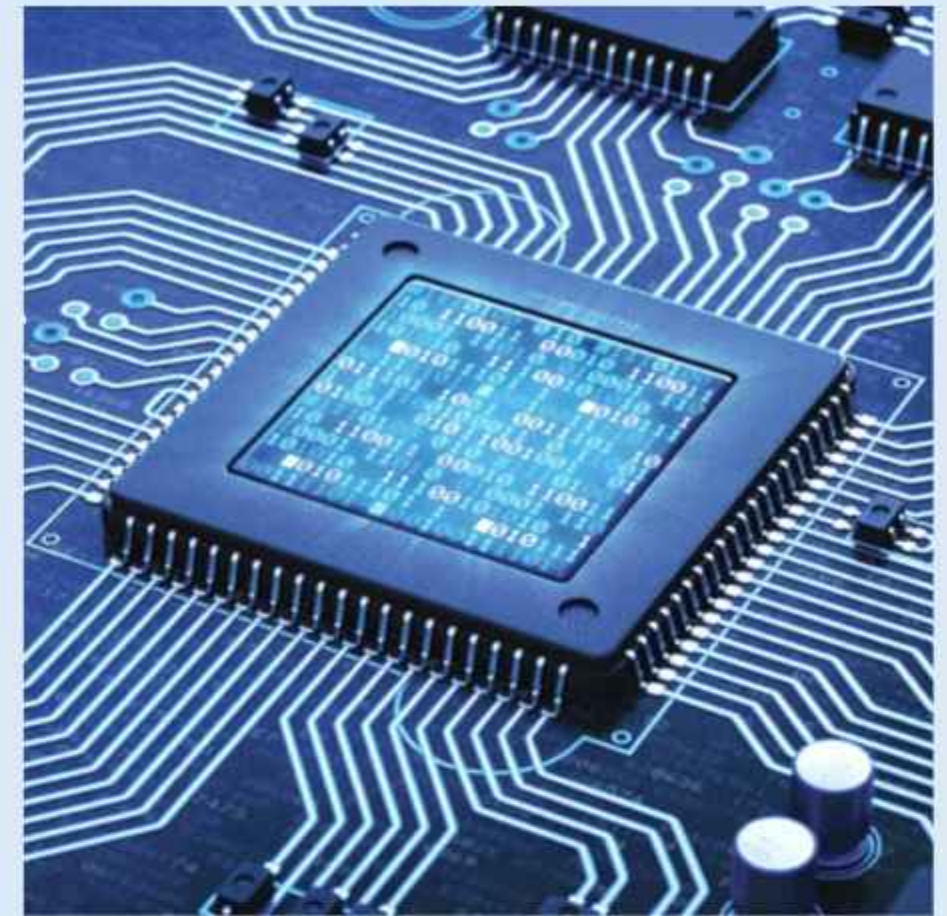
- ✓ Understand the elements of embedded systems in general and their applications.
- ✓ Design a basic structure of embedded system using basic building block approach.

Target Participants

All students from 2nd - 4th year of Electronics and Communications Engineering department can attend the programme.

Course Fee

There is **no course fee** for attending this programme.



Registration

A Registration will be done on first come first serve basis

Link: <https://forms.gle/UAjDyxR wD5ZLVNdGA>

Award of Certificate

Each participant will be awarded e-certificate after successful completion of the programme.

Organized by

Electronics and Communications Engineering Department

Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Hooghly-712103



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

ESTD. - 2004

Approved by AICTE, affiliated to WBUT and recognized by Govt. of W. B., Department of Higher Education (Technical)

VIVEKANANDA ROAD • PIPULPATI • P. O. & DIST. - HOOGHLY • PIN - 712 103 • WEST BENGAL

TELEPHONE : 033 2680 1392 (D) / 4121 / 5702 & 2681 0505 • FAX : 2680 3026

E-mail : tpo.hetc@gmail.com • Website : www.hetc.ac.in

Ref. No. HETC/2023/49

Date 16.02.2023

To
Prof. (Dr.) Swarup Kumar Mitra
Professor and Head,
Electronics and Communication Engineering Department,
MCKV Institute of Engineering
243, GT Road (N), Liluah
Howrah - 711204

Sub: Invitation for delivering a lecture on "Embedded System and Its Applications"

Dear Sir,

It is my pleasure to invite you to our college to speak on the topic "Embedded System and Its Applications" on 25th February, 2023 Saturday. The lecture, organized by the Electronics and Communications Engineering Department, is scheduled to be held from 11:00 am onwards.

We will be highly obliged if you accept our invitation to speak on the above mentioned topic considering your vast expertise and experience on the subject. We are sure that your guidance and inspiration will go a long way in educating and motivating our students.

Anticipating your kind acceptance of our invitation and looking forward to your valuable discourse, we remain.

With regards,

Smitadhi Ganguly 16.02.23

Dr. Smitadhi Ganguly
Principal in-Charge

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
ELECTRONICS AND COMMUNICATIONS ENGINEERING DEPARTMENT

Event's Name:

Resource person:

Date:

Sl. No.	Participant's Name	Stream	Department	Signature	Remarks
1	Juhina Adhikary	ECE	2nd	Juhina Adhikary	
2	Akanksha Singh	ECE	2nd	Akanksha Singh	
3	SOLANKI SADHU	ECE	2nd	Solanki Sadhu	
4	SUDIPTA MONDAL	ECE	2nd	Sudipta Mondal.	
5	SK.MOJIB HOSSAIN	ECE	2nd	SK.MOJIB HOSSAIN	
6	Ayan Pal	ECE	2nd	Ayan Pal	
7	Argha Kar	ECE	2nd	Argha Kar	
8	SUSHIL PAL	ECE	2nd	Sushil Pal	
9	Shibam Mishra	ECE	2nd	Shibam Mishra	
10	ARPAN BISWAS	ECE	2nd	Arpan Biswas.	
11	SOUGATA PAL	ECE	3rd	Sougata Pal	
12	Riya Dey	ECE	3rd	Riya	
13	Arnav Chaki	ECE	3rd	Arnav	
14	Debosnita Das.	ECE	3rd	Debosnita Das.	
15	Samarat Kavstar Raj	ECE	3rd	Samarat Kavstar Raj	
16	SOUVIK GHOSH	ECE	3rd	SOUVIK GHOSH	
17	Sayantan Mallik	ECE	3rd	Sayantan Mallik	
18	Suman Khan	ECE	3rd	Suman Khan.	
19	Kasturi Pramanik	ECE	4th	Kasturi Pramanik	
20	Reshmi Shaw	ECE	4th	Reshmi Shaw	
21	John Jorabdar	ECE	2nd	John Jorabdar	
22	RANJIT PATHAK	ECE	2nd	Ranjit Pathak	
23	Suman Saha	ECE	3rd	Suman Saha	
24	Ganga Roy	ECE	3rd	Ganga Roy	
25	Suman Samanta	ECE	3rd	Ssamanta	
26	Kunal Chakraborty.	ECE	3rd	Kunal Chakraborty.	
27	Salma Jesmin	E.C.E	3rd	Salma Jesmin	
28	Anubhav Bis Dutta	E.PE	3rd	Anubhav Bis Dutta	
29	Ayan Bhowmik	ECE	3rd	Ayan Bhowmik	
30	Subhadip Manna.	ECE	3rd	Subhadip Manna	

S.L.L. 4/25.02.23
Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.

SRS
 25/2/23
 D/C, ECE Deptt.
 HETC, Hooghly.

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
ELECTRONICS AND COMMUNICATIONS ENGINEERING DEPARTMENT

Event's Name:

Resource person:

Year

Date:

Sl. No.	Participant's Name	Stream	Department	Signature	Remarks
1	ARJYA BISWAS	ECE	3rd	Arjya Biswas	
2	Abhisekh DUTTA	ECE	3rd	Abhisekh Dutta.	
3	HIRANMOY MALLICK	ECE	3rd	Hiranmoy Mallik	
4	Prakriti Majumder.	ECE	3rd	Prakriti Majumder.	
5	Disha Sen	ECE	3rd	Disha Sen	
6	Shreya Mishra	ECE	2nd	Shreya Mishra	
7	Md Sajjad Altari	ECE	2nd	Md Sajjad Altari	
8	Anuj kr. Singh	ECE	2nd	Anuj kr. Singh	
9	Abhishek Jay	ECE	2nd	Abhishek Jay	
10	Ripae Ghosh	ECE	2nd	Ripae Ghosh	
11	Darshana Santra	ECE	2nd	Darshana Santra	
12	Dipti Bogy	ECE	2nd	Dipti Bogy	
13	Sayani Saha	ECE	2nd	Sayani Saha	
14	Surbanda Biswas	ECE	2nd	Surbanda Biswas.	
15	Sohan Sakana	ECE	2nd.	S. Sakana.	
16	Anubhab Palit	ECE	2nd	Anubhab Palit	
17	Surojit Paul	ECE	3rd	Surojit Paul.	
18	Saumodip Mukhopadhyay	ECE	3rd	Saumodip Mukhopadhyay	
19	Kuheli Dutta	ECE	3rd	Kuheli Dutta	
20	Tanwree Halder	ECE	3rd	Tanwree Halder	
21	Rachana Patra	ECE	3rd	Rachana Patra	
22	Rahul Rakshit	ECE	3rd	Rahul Rakshit	
23	Shreya Dey	ECE	3rd	Shreya Dey	
24	Srijani Sahu	ECE	3rd	Srijani Sahu.	
25	Sumana Hazra	ECE	3rd	Sumana Hazra	
26	Subham Das	ECE	3rd	Subham Das	
27	Tiyasha Ghosh	ECE	3rd	Tiyasha Ghosh	
28	Susmita Sarmakar	ECE	3rd	Susmita Sarmakar.	
29	Foyjunde	ECE	3rd	Foyjunde.	
30	Antara Ghosh	ECE	3rd	Antara Ghosh	

Sill: 4/ 26.02.23
 Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.

25/2/23
 D/C, ECE Deptt.
 HETC, Hooghly.

HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
ELECTRONICS AND COMMUNICATIONS ENGINEERING DEPARTMENT

Event's Name:

Resource person:

Date:

Sl. No.	Participant's Name	Stream	Department	Signature	Remarks
1	Shoua Varma	2nd	ECE	Shoua Varma	
2	Sampurna Pal	2nd	ECE	Sampurna Pal	
3	Sayam Adak	2nd	ECE	Sayam Adak	
4	Amit Kumar Bakshi	2nd	ECE	Amit K. Bakshi.	
5	Sayan Bhowal	2nd	ECE	Sayan Bhowal	
6	Shuva Das	2nd	ECE	Shuva Das.	
7	Sounak Ghosh	2nd	ECE	Sounak Ghosh	
8	Angha Saha	3rd	ECE	Angha Saha	
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

S.L.L. L/H 25.02.23
Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.

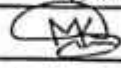
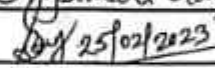
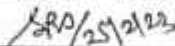
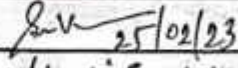

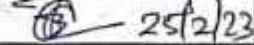

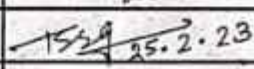
S.K.S.
 25/2/23
 DIC, ECE Deptt.
 HETC, Hooghly.

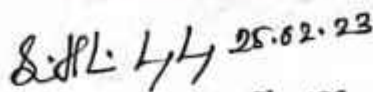
HOOGLHY ENGINEERING & TECHNOLOGY COLLEGE
ELECTRONICS AND COMMUNICATIONS ENGINEERING DEPARTMENT

Event's Name:

Resource person:

Date:

Sl. No.	Participant's Name	Stream	Department	Signature	Remarks
1	Manish Kumar Singh		E.C.E	 25/2/23	
2	Debasish Bose		E E	DBose 25.02.23	
3	Shyamali Gayen		ECE	Shyamali Gayen	
4	SUBHAJIT ROY		ECE	 25/02/2023	
5	SWARUP SAMANTA		E.C.E.	 25/2/23	
6	Smitadhi Ganguly		M.E.	SG 25.02.23	
7	DEB KUMAR SHEET		ECE	DKS 25.02.23	
8	Subhajit Malik		ECE	 25/02/23	
9	Sangata Choudhury		ECE	 25/2/23	
10	Jagadish Bhattacharya		ECE	 25/2/23	
11	Biswajit Bursak		ECE	 25.2.23	
12	Bidisha Senbupte		ECE	 25.2.23	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

 25.02.23
 Principal in Charge
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.

 25/2/23
 DIC, ECE Deptt.
 HETC, Hooghly.

Feedback report

Student Name: Anubhab Palit

College Name: Hooghly Engineering & Technology College

Department: Electronics & Communication Engineering

Year: 2nd, Semester: 4th, Roll no.: 01

Date: 28/02/2023

Respected Sir/Madam,

On 25th of February, 2023, I attended a seminar on Embedded system and its application organized by our department. The seminar was a huge success, with Dr. Mitra providing valuable insights into the field of Embedded Systems. He discussed the latest developments and advancements in the field and provided practical examples of how embedded systems are being used in real-world applications.

The seminar was well-organized and the attendees found it to be both informative and engaging. Dr. Mitra's presentation was well-researched and provided a comprehensive overview of the subject matter. The event was a great opportunity for students and faculty members to learn from an industry expert and gain valuable knowledge in the field of Embedded Systems.

Overall, the feedback from the attendees of the seminar was overwhelmingly positive, and we look forward to organizing similar events in the future.

Sincerely,
Anubhab Palit
ECE, 2nd Year, HETC.

Vivekananda Road, Pipulpati, Post. & Dist. : Hooghly, West Bengal, Pin : 712 103

Phone : (033) 2601 0605 / 2580 4121 / 5702 / 1302 • Tele Fax : (033) 2600 2025 • Website : www.hetcs.ac.in • E-mail : hetcs@hetcs.ac.in

Ref. No. HETCS/APP-18/2022-23/18

Date: 08.04.2022

To,

Mr. Sibam Golder
Chiraimore, P.S. - Singur,
Hooghly 712223, WB

Sub: Appointment as Assistant Professor of Electrical Engineering Department on Contractual basis.

Dear Mr. Golder,

With reference to your application and subsequent interview on 06th April, 2022 you have been selected as Assistant Professor of Electrical Engineering Department on Contractual basis for Hooghly Engineering & Technology College on the following terms and conditions.

1. You will be paid remuneration of Rs. -400/- (Rupees Four Hundred only) per lecture class held.
2. You will be responsible to conduct the classes (Theoretical/ Practical wherever applicable) as assigned by the Head/in charge of the department.
3. The appointment is purely temporary and on contractual basis for a period of six months only, after which it may be terminated or extended on the basis of performance.
4. The classes assigned to you will be decided in consultation with the concerned Head of the Department/DIC/Co-Coordinator. You are requested to complete the syllabus within the stipulated number of classes for the semester as mentioned in the respective curriculum of MAKAUT. You are supposed to perform setting-up of internal question, evaluation of answer sheet and submission of marks accordingly. No additional payment will be made for this job.
5. One month's notice is required on either side for resignation or termination from the services of the organization.
6. You shall have to abide by all the rules and regulations of the institute.

Kindly sign and return to us the duplicate copy of this letter as your acceptance. We welcome you to HETCS family and look forward your contribution for the growth of the institute.

Wish you all the best.

Amit Maity
Dr. Amit Maity
Secretary, HETCS

I, SIBAM GOLDER do hereby accept all the above terms and conditions mentioned here.

Signature Sibam Golder

Date 08/04/2022

Copy to:

1. President, HETCS
2. Principal in-Charge, HETC
3. Accounts



Amit Maity
Secretary
Hooghly Engineering & Technology College
H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College

Vivekananda Road, Pipulpati, Post. & Dist. : Hooghly, West Bengal, Pin : 712 103

Phone : (033) 2681 0505/ 2680 4121 / 5702 / 1392 • Tele Fax : (033) 2680 3026 • Website : www.hetc.ac.in • E-mail : hetc@hetc.ac.in

Ref. No. HETCS/APP-17/2022-23/17

Date : 08.04.2022

To,
Ms. Swati De
11A, Vidyasagar Sarani, Ghoshpara
Nischinda, Bally, Howrah, Pin - 711227

Sub: Appointment as Assistant Professor of Electrical Engineering Department on Contractual basis.

Dear Ms. De,

With reference to your application and subsequent interview on 06th April, 2022, you have been selected as Assistant Professor of Electrical Engineering Department on Contractual basis for Hooghly Engineering & Technology College on the following terms and conditions:

1. You will be paid remuneration of Rs. 400/- (Rupees Four Hundred only) per lecture class held.
2. You will be responsible to conduct the classes (Theoretical/ Practical wherever applicable) as assigned by the Head/in charge of the department.
3. The appointment is purely temporary and on contractual basis for a period of six months only, after which it may be terminated or extended on the basis of performance.
4. The classes assigned to you will be decided in consultation with the concerned Head of the Department/DIC/Co-Coordinator. You are requested to complete the syllabus within the stipulated number of classes for the semester as mentioned in the respective curriculum of MAKAUT. You are supposed to perform setting-up of internal question, evaluation of answer sheet and submission of marks accordingly. No additional payment will be made for this job.
5. One month's notice is required on either side for resignation or termination from the services of the organization.
6. You shall have to abide by all the rules and regulations of the institute.

Kindly sign and return to us the duplicate copy of this letter as your acceptance. We welcome you to HETCS family and look forward your contribution for the growth of the institute.

Wish you all the best.

Avijit Maity 8/4/22
Dr. Avijit Maity
Secretary, HETCS

I, SWATI DE do hereby accept all the above terms and conditions mentioned here.

Signature Swati De

Date 8.4.2022

Copy to:

1. President, HETCS
2. Principal in-Charge, HETC
3. Accounts



Dr. Avijit Maity
Secretary
Hooghly Engineering &
Technology College Society

AS
H.O.D.
Electrical Engineering
Hooghly Engineering & Technology College



CERTIFICATE OF PARTICIPATION



WEBINAR
ON

" Awareness Webinar on Outcome Based Education and Accreditation for the Engineering Colleges in West Bengal "

This certificate is presented to

Ms. SANNISTHA BANERJEE of Hooghly Engineering and Technology college
for participating in the "Awareness Webinar on Outcome Based Education and Accreditation for the Engineering Colleges in West Bengal" held on 15th December, 2020.

ORGANIZED BY

NATIONAL BOARD OF ACCREDITATION, NEW DELHI

in association with the


MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Registration No : MAKAUT-WEB-511


Event ID : 20201215-WEB-OBEAEC

Date : 15th December, 2020

* This is system generated certificate.


Dr. P.P. Lahiri
Registrar
MAKAUT, WB




Electronics Engineering
Hooghly Engineering & Technology College



विदेश मंत्रालय
MINISTRY OF
EXTERNAL AFFAIRS



भारत 2023 INDIA

my
GOV
मेरी सरकार

Certificate Of Participation

awarded to

Kazi Md Ashik Ekbal

in appreciation of his/her participation in

"Know your G20" Quiz

contest hosted at MyGov from 23rd February 2023 to 25th March 2023.

We acknowledge your efforts. Keep Participating!

Smriti

Joint Secretary
G20 Branding



[Signature]
H.O.D.
Electrical Engineering
Hogghy Engineering & Technology College

Dated, Liluah-25.07.2023

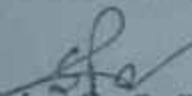
CARRIAGE & WAGON WORKSHOP

EASTERN RAILWAY

LILUAH-711204



We are pleased to certify that NISHA GONTHU is a student of Degree in ELECTRICAL Engineering of HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE was under Industrial Training (Unpaid) in this Workshop w.e.f 12/07/23 to 25/07/23 and she has successfully completed her training.


Training Co-Ordinator

Head Incharge
C & W Work Shop




AWM (TRG.)
Eastern Railway/Liluah



Virtual Internship Completion Certificate

This is to certify that

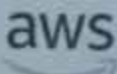
kazi Md Ashik Ekbal

Hooghly Engineering & Technology College

has successfully completed 10 weeks

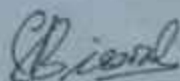
AWS Cloud Virtual Internship

during December 2022 - February 2023

Supported By  academy



Shri Buddha Chandrasekhar
Chief Coordinating Officer (CCO)
NEAT Cell, AICTE



Dr. Satya Ranjan Biswal
Chief Technology Officer (CTO)
EduSkills





HOOCHLY ENGINEERING & TECHNOLOGY COLLEGE

ESTD - 2004

Approved by AICTE, affiliated to WBUT and recognized by Govt. of W.B., Department of Higher Education (Technical)
VIVEKANANDA ROAD - PIPURDAYA - P. O. & PIN - HOOGHLY - WB - PIN - 742 105 | MOBILE NO. 98308 20000
TELEPHONE - 863 2486 1396 (D) | FAX - 8762 82491 0995 - FAX - 2486 2024
E-mail - hptc@hptc.ac.in | Website - www.hptc.ac.in

Sl. No.

Date: 28-11-2024

List of Electrical Engineering, 4th year students of HETC participating in the Field Visit to DIPS on 24.11.2023

Sl. No.	Name	Year	University Roll No.
1	ABHIRAM SEN	4th	17601621010
2	KUNAL KUNDA	4th	17601621011
3	DEBDEB WASH	4th	17601621012
4	SANJANA KOTIAL	4th	17601621013
5	SUDIPAN GHOSH	4th	17601621014
6	SUBHANKER NEHALI	4th	17601621015
7	MR. DIVYAN MUNDAL	4th	17601621016
8	KUPAN BISHWAN	4th	17601621017
9	PIYAN DAV	4th	17601621018
10	AYAN PAL	4th	17601621019
11	TRIPATI KUNDA	4th	17601621020
12	DEBDEB WASH	4th	17601621021
13	SOUVIK DEB	4th	17601621022
14	SOUVIK BANJA	4th	17601621023
15	AKASH MISHRA	4th	17601621024
16	SUDIPAN MANDAL	4th	17601621025
17	AYAN ADIKARY	4th	17601621026
18	SUDIPAN GHOSH	4th	17601621027
19	KARUN DEB	4th	17601621028
20	NISHA GONZALEZ	4th	17601621029
21	SOUVIK SETHI	4th	17601621030
22	BISHMI DEBNAATH	4th	17601621031
23	SANBRAM CHAKI	4th	17601621032
24	SEBILAM BANJALI	4th	17601621033
25	SOUVIK DEB	4th	17601621034
26	MICHAEL SINGH	4th	17601621035
27	ADHITH SARKAR	4th	17601621036
28	TRIBHUKTIN	4th	17601621037
29	RAHUL SINGH	4th	17601621038
30	SERVA KANTA MONDAL	4th	17601621039
31	ARINDOM DEB	4th	17601621040
32	SAYAN KUMAR GAYEN	4th	17601621041
33	KALYAN RAY	4th	17601621042



Date: 28-11-23

Dr. Smitadhi Ganguly
Principal in Charge

[Handwritten Signature]
H. O. D.

Principal in Charge
Electrical Engineering
& Technology College
Vivekananda Road, Pipurdaya, Hooghly

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

VIVEKANANDA ROAD, PIPULPATI

P.O. & DIST.: HOOGHLY

PIN: 712103



26.04.2023

NOTICE

All the students, faculty members and other stakeholders of the college are hereby informed that the Electrical Engineering Department and Mechanical Engineering Department of the college are jointly organizing a National Conference on "Recent Trends in Electrical and Mechanical Engineering" on 29.04.2023 in hybrid mode. All are cordially invited to attend the Conference at their convenience.

Sd/- L.L. 26.04.23

Dr. Smitadhu Ganguly
Convener & Head, ME Department

88
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

REPORT ON NATIONAL CONFERENCE ON RECENT TRENDS IN ELECTRICAL AND MECHANICAL ENGINEERING

Topic: Recent Trends in Electrical and Mechanical Engineering

Date: 29th April, 2023

Venue: HETC Seminar hall

Time: 10:30 am to 5 pm

The Department of Electrical and Mechanical engineering of Hooghly engineering and technology college organized a one-day national conference on 'Recent Trends in Electrical and Mechanical Engineering' on 29th April, 2023. The conference was attended by faculty members and students of Hooghly engineering and technology college. The conference started with the lamp lighting ceremony by the chief guest Dr. Tridibesh Das, Associate Professor, Department of Mechanical Engineering, Kalyani Government Engineering College and honorable dignitaries of HETC. Then the inaugural speech was given by honorable principal of HETC Prof.(Dr.) Pradosh Kr. Adhivaryyu. After a short tea break Dr. Tridibesh Das started his lecture at around 11.15 am. In his lecture Dr. Das talked about different types of renewable energy sources and extraction of energy from these various sources. The lunch break was introduced after this at around 1 pm and all the attendees are requested to reassemble at the seminar hall at 2 pm. The next lecture was given by Dr. Tapan Pradhan, Assistant Professor, Department of Electrical Engineering, National Institute of Technology, Silchar, Assam. Dr. Pradhan discussed about the recent trends in electrical engineering and the application of new technologies for industrial purposes. After another short tea break Mr. Sandipan Sarkar, Principal Consultant, Enzen Global Limited, UK delivered his lecture on EHV systems. He elaborately discussed about the EHV system connection design, power swing analysis and fault level studies. During the valedictory program conducted in the evening, the Chief Guest Dr. Tridibesh Das congratulated the institute for organizing this conference in the relevant theme. He also appreciated the active participation of students in presenting their works on recent trends and interest towards learning new innovative ideas.

29.08.23
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Piplasahi, Hooghly.

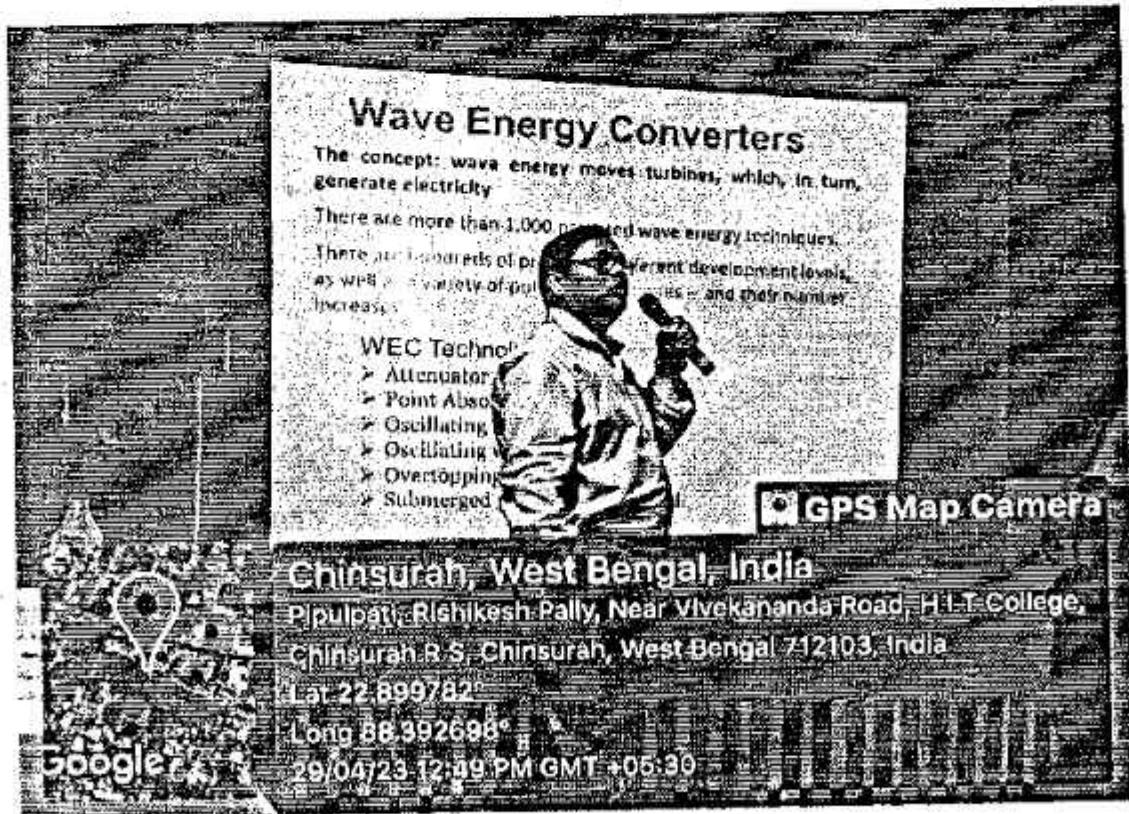


Hooghly Engineering and Technology College
 Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
 Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal



Kolkata, West Bengal, India
 15/1220, Gaultuly Rd, Chinsurah R S, Kolkata, West Bengal
 712103, India
 Lat 22.898632°
 Long 88.392682°
 29/04/23 12:06 PM GMT +05:30

GPS Map Camera



Wave Energy Converters
 The concept: wave energy moves turbines, which, in turn, generate electricity
 There are more than 1,000 patented wave energy techniques.
 There are hundreds of projects at different development levels, as well as a variety of potential uses, and their number increases.
WEC Technologies
 > Attenuator
 > Point Absorber
 > Oscillating Water Column
 > Oscillating Hydrofoil
 > Overtopping
 > Submerged

Chinsurah, West Bengal, India
 Pipulpati, Rishikesh Pally, Near Vivekananda Road, H.T. College,
 Chinsurah R S, Chinsurah, West Bengal 712103, India
 Lat 22.899782°
 Long 88.392698°
 29/04/23 12:09 PM GMT +05:30

GPS Map Camera

86 29-08-23
 Hooghly Engineering and Technology College
 Vivekananda Road, Pipulpati, Hooghly

Pls. Clarify following points from students.

To,
The Principal
(Through the Department-in-Charge)
Hooghly Engineering and Technology College
Vivekananda Road, Pipulpati
P.O. & DIST. - HOOGHLY
PIN - 712103 (W.D)

*1. Where they will visit?
2. Is there any permission from concerned auth. authority of this organization*

*Registration
Pl give a thought and talk to me.*

*Sib.
14/03/19*

15/3/19

SUB: Requesting for "Educational Tour" of Civil Engineering Department

Respected Sir,

With due respect we the students of your institution (Dept. of Civil Engineering), beg to state that we are willing to go to a Technical excursion on 28th March and 29th March for some applied knowledge enhancement. We think we will be able to gather practical knowledge of various technical fields along with of our books. It will also be beneficial to make a good breakthrough from our indifferent life. So we need your permission and we are quite hopeful about it. It will be our great privilege if you please join us.

Apart from traditional lectures, field visit is one of the most important part of practical knowledge oriented Engineering Education. On this tour we shall observe dam construction, irrigation system, reservoirs, human consumption, industrial usage, hydraulic structures, aquaculture and navigability that we have learnt theoretically in Soil Mechanics, Water Resource Engineering, and Fluid Mechanics. We shall also gain the practical knowledge on hydropower which is often used in conjunction with dams to generate electricity and also learn about retaining wall, floodgates, levees etc. The name list of the enthusiastic students' is attached onwards.

We will highly oblige if you allow us to arrange and go to the study tour. Thanking You,

Sincerely yours,
The Students
Department of Civil Engineering

14/03/2018

*Forwarded to Principal
A. Chattopadhyay
14/03/18.*



Civil 1st Year.

Name	Roll	SE No	Name	2011
1. Tusarika Biswas. Tushita	1	33	Sanjukta Mitra	15.
2. Sunamali Mondal	2	34	Priyanka Chakraborty	60
3. Souvik Chakraborty	10	35	Souvik Ghosh.	47
4. Soumi Haloy.	12	36	Saikat Kundu.	71
5. Sandipan Pramanik.	16	37	Anindita Sen	53
6. Saikat Deka.	17	38	Soyak Mondol	57
7. Sabarna Karimkar.	18	39	Priyanka Mondal	
8. Rangana Roy.	19			
9. Namrata Dutta.	20			
10. Kuman Aman Verma.	21			

Civil 4th Year.

11. Apalita Senyal.	24			
12. Indranil Shee.	25	1	Sk. Moinddin.	37
13. Bidisha Pal	28	2	Anindya Hazra.	03
14. Anjil Dutta.	30	3	Rajarshi Karimkar.	29
15. Anghya Guha Chakraborty.	31	4	Debankan Kuman Roy.	11
16. Anshjadeep Bhattacharya.	32	5	Shilpi Biswas.	39
17. Anvit Manna.	33	6	Utsav Mukherjee.	57
18. Ankon Sarkar.	34	7	Sayantu Roychowdhury.	35
19. Anrita Das.	35	8	Ronit Bhadra.	27
20. Sowriyoti Mukherjee.	41	9	Rohan Karimkar.	
21. Sudaka Lath.	44	10	Someaswan Chakraborty.	
22. Sourov Samanta.	48	11	Jayante Sarkar.	14
23. Sounav Karsobanik.	49	12	Anindam Kuni.	06
24. Sounav Biswas.	50	13	Rajdip Sil.	28
25. Stolu Roy.	52	14	Sounav Ghosh	48
26. Pinaki Mishra.	61	15	Dipoman Ghosh.	13
27. Kuntal Mukherjee.	62	16	Anjil Konen.	05
28. Debajyoti Roy.	65			
29. Biswanupa Biswas.	67			
30. Anindita Halden.	69			
31. Sandip Das.	79			
32. Sukalyan Dey.	78			



Civil 3rd Year

Name	Roll	Name	Roll
1. Dipankar Das	21	Pradyumn Chatterjee	46
2. Ananta Das	22	Subhansu Chatterjee	47
3. Ananta Das	23	Ananta Das	48
4. Ananta Das	24	Ananta Das	49
5. Ananta Das	25	Ananta Das	50
6. Ananta Das	26	Ananta Das	51
7. Ananta Das	27	Ananta Das	52
8. Ananta Das	28	Ananta Das	53
9. Ananta Das	29	Ananta Das	54
10. Ananta Das	30	Ananta Das	55
11. Ananta Das	31	Ananta Das	56
12. Ananta Das	32	Ananta Das	57
13. Ananta Das	33	Ananta Das	58
14. Ananta Das	34	Ananta Das	59
15. Ananta Das	35	Ananta Das	60
16. Ananta Das	36	Ananta Das	61
17. Ananta Das	37	Ananta Das	62
18. Ananta Das	38	Ananta Das	63
19. Ananta Das	39	Ananta Das	64
20. Ananta Das	40	Ananta Das	65
21. Ananta Das	41	Ananta Das	66
22. Ananta Das	42	Ananta Das	67
23. Ananta Das	43	Ananta Das	68
24. Ananta Das	44	Ananta Das	69
25. Ananta Das	45	Ananta Das	70
26. Ananta Das	46	Ananta Das	71
27. Ananta Das	47	Ananta Das	72
28. Ananta Das	48	Ananta Das	73
29. Ananta Das	49	Ananta Das	74
30. Ananta Das	50	Ananta Das	75
31. Ananta Das	51	Ananta Das	76
32. Ananta Das	52	Ananta Das	77
33. Ananta Das	53	Ananta Das	78
34. Ananta Das	54	Ananta Das	79
35. Ananta Das	55	Ananta Das	80
36. Ananta Das	56	Ananta Das	81
37. Ananta Das	57	Ananta Das	82
38. Ananta Das	58	Ananta Das	83
39. Ananta Das	59	Ananta Das	84
40. Ananta Das	60	Ananta Das	85
41. Ananta Das	61	Ananta Das	86
42. Ananta Das	62	Ananta Das	87
43. Ananta Das	63	Ananta Das	88
44. Ananta Das	64	Ananta Das	89
45. Ananta Das	65	Ananta Das	90
46. Ananta Das	66	Ananta Das	91
47. Ananta Das	67	Ananta Das	92
48. Ananta Das	68	Ananta Das	93
49. Ananta Das	69	Ananta Das	94
50. Ananta Das	70	Ananta Das	95



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAJIT (Formerly WBUT)

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

3-Day State Level Workshop on Advanced Surveying Using DGPS and Total Station, 28-30th March 2023

Brochure



Hooghly Engineering & Technology College
and HETC

About the
Civil Engineering
Department

CHAIRPERSON
PROF. TARAK KUMAR BANDYOPADHYAY

COORDINATOR
MS. ARPITA DAS

CO-COORDINATORS
DR. TANUJOY GHOSH
DR. RAJDIP PAUL

3-DAY WORKSHOP ON
"ADVANCED SURVEYING USING DGPS
AND TOTAL STATION"

28-30TH MARCH 2023

ORGANIZED BY
CIVIL ENGINEERING DEPARTMENT OF HETC

Rajdip Paul
Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

S. S. L. L.
Principal, Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Objective

The objective of this course is to provide a comprehensive understanding of the various aspects of the field. The course is designed to equip students with the necessary skills and knowledge to excel in their professional careers. The course covers a wide range of topics, including the fundamentals of the field, advanced concepts, and practical applications. The course is structured to provide a solid foundation in the field, while also allowing students to explore their interests in more depth. The course is designed to be both challenging and rewarding, providing students with a rich and fulfilling learning experience.

- To provide a comprehensive understanding of the various aspects of the field.
- To equip students with the necessary skills and knowledge to excel in their professional careers.
- To cover a wide range of topics, including the fundamentals of the field, advanced concepts, and practical applications.
- To provide a solid foundation in the field, while also allowing students to explore their interests in more depth.
- To be both challenging and rewarding, providing students with a rich and fulfilling learning experience.

DATE	SESSION	EVENT	TIME
29 March	01	PRAGATI	10:00 AM
		TRIPURTA	10:30 AM
		PRAGATI	11:00 AM
	02	PRAGATI	10:00 AM
		TRIPURTA	10:30 AM
		PRAGATI	11:00 AM
	03	PRAGATI	10:00 AM
		TRIPURTA	10:30 AM
		PRAGATI	11:00 AM
	04	PRAGATI	10:00 AM
		TRIPURTA	10:30 AM
		PRAGATI	11:00 AM
05	PRAGATI	10:00 AM	
	TRIPURTA	10:30 AM	
	PRAGATI	11:00 AM	
06	PRAGATI	10:00 AM	
	TRIPURTA	10:30 AM	
	PRAGATI	11:00 AM	
07	PRAGATI	10:00 AM	
	TRIPURTA	10:30 AM	
	PRAGATI	11:00 AM	
08	PRAGATI	10:00 AM	
	TRIPURTA	10:30 AM	
	PRAGATI	11:00 AM	

REGISTRATION DETAILS

- To provide a comprehensive understanding of the various aspects of the field.
- To equip students with the necessary skills and knowledge to excel in their professional careers.
- To cover a wide range of topics, including the fundamentals of the field, advanced concepts, and practical applications.
- To provide a solid foundation in the field, while also allowing students to explore their interests in more depth.
- To be both challenging and rewarding, providing students with a rich and fulfilling learning experience.

Address for Communication

1. Hooghly Engineering and Technology College, Vivekananda Road, Pipulpati, Hooghly, West Bengal - 712103.
2. The Hooghly Engineering and Technology College, Vivekananda Road, Pipulpati, Hooghly, West Bengal - 712103.
3. The Hooghly Engineering and Technology College, Vivekananda Road, Pipulpati, Hooghly, West Bengal - 712103.



Rajdip Paul
Dr. Rajdip Paul
 HOD, Dept. of CE
 HETC, Hooghly.

Siddhanta
 Principal
 Hooghly Engineering & Technology College
 Vivekananda Road, Pipulpati, Hooghly.



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Hooghly Engineering and Technology College Note sheet

Date: 24.02.23

The Civil Engineering Department is looking forward to organizing a 3 Day WORKSHOP on **Advanced Surveying Using DGPS and Total Station** from 28th to 30th March 2023. The tentative expenses for the workshop are furnished below for the information of the competent authority for necessary approval.

Sl. No.	Item	Rate	Expense (Rs.)
1	Remuneration for the Resource Persons	Rs. 5000/day (for 3 Days)	15000
2	Traveling and accommodation of the Resource Persons	Lump sum	7000
3	Food for the Resource Persons	Lump sum	6000
4	Memento	Rs. 200 piece (for 5 persons)	1000
5	Tra and bow out	Rs. 20 Day - 3 Days (for 12 persons)	2400 (approx)
6	Traveling allowance for invitations	Rs. 200/college - 10 colleges	2000
7	Printing (Gate, Flex, Certificates, Invitation card, Poster, Board)	Lump sum	5000
8	Welcome kit for participants	Rs. 10 per person (for 100 participants)	1000
9	Miscellaneous	Lump sum	6000
Total Budget			Rs. 55,000

The total expense of the program may change according to any change in the number of participants.

Ankita Das
Ms Ankita Das
Coordinator

Dr. Tanmay Ghosh
Dr. Tanmay Ghosh
Co-Coordinator

Dr. Rajdip Paul
Dr. Rajdip Paul
Co-Coordinator

Noted & instructed for necessary approval. *RG*
24.02.23

Secretary, HETEC

Dr. Rajdip Paul
Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

Dr. Rajdip Paul
Principal
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal


OBJECTIVES OF THE WORKSHOP

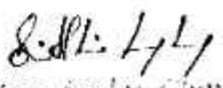
This 3-day course offers a comprehensive introduction to Total Station and DGPS technology, system concepts, design, operation, implementation, and applications, including detailed information on the GPS signal, its processing by the receiver and the techniques by which GPS obtains position, velocity, and time. The objective of the 3-day workshop is as follows:

- To gain an understanding of the measurement of angles, vertical and horizontal.
- To know the correct surveying terminology when using a total station
- To use the Total Station in a practical situation.
- To record the absolute location of any object.
- To comprehensively introduce GPS and DGPS technology, system concepts, design, operation, implementation, and applications, including critical information on DGPS concepts.
- To provide detailed information on the GPS signal, its processing by the receiver and the techniques by which GPS obtains position, velocity, and time.
- To present current information on the status, plans, schedule, and capabilities of GPS and other satellite-based systems with position velocity and time determination applications.
- To fill in technical information gaps for those in the GPS and GNSS fields.

WHO CAN ATTEND THE WORKSHOP?

The faculty of Academic Institutions, UG, PG, diploma students, and Professionals from the Industry can attend the workshop.


Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.


Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Topic Covered in 3-Day State Level Workshop on Advanced Surveying Using DGPS and Total Station, 28-30th March 2023.

Day 1 Session 1

Topics covered:

- Introduction to Surveying and Levelling
- Concept of Traditional Surveying
- Limitation of traditional surveying
- Introduction of Advance Surveying
- Advantages and application of Total Station
- Principle of GPS, DGPS, Terrestrial laser scanner
- Application of GPS and DGPS.
- Review of Photogrammetric Surveying
- Concept of Digital Image Processing
- Applications of Geomatics and 3D Mapping in Civil Engineering

Day 1 Session 2

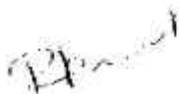
Topics covered:

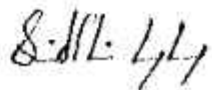
- Instrument Specification about Total Station and DGPS
- Setting the total Station in the field (Field Practice: Centering, Levelling on Total Station)

Day 2 Session 1

Topics covered:

- Field Practice on instrument setup, job selection, and Job store data.
- Field Practice on Topography Survey using Total Station
- Layout preparation using Total Station


Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.


Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Topic Covered in 3-Day State Level Workshop on Advanced Surveying Using DGPS and Total Station, 28-30th March 2023.

Day 2 Session 2

Topics covered:

- Static Global Positioning System Surveying (Understanding of Base Station and rover of GPS)
- Field Practice on Real-Time Kinematic and Differential GPS

Day 3 Session 1

Topics covered:

- Field practice on Stakeout points with GPS
- Field Practice on Topography Survey using Differential GPS

Day 3 Session 2

Topics covered:

- Data Processing of Total Station using software
- DGPS data Processing and locating the plot into a Google map

Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Brief Profile of the Resource Person

1. Prof. Subhabrata Ghosh

Academic Qualification

- B.E Civil from Bengal Engineering College(DU) and M.E specializing in Structure from BESUS.

Professional Experience

- Worked as Field Engineer in Anirban Enterprise.
- At present, HOD, Dept. of GIS & GPS, and Lecturer in Survey Engineering at West Bengal Survey Institute.

Acted as

- HOD Civil Engineering
- Training & Placement Officer, West Bengal Survey Institute
- Internal Co-Ordinator, CDTP
- Convener, Syllabus Committee, GIS & GPS, WBSCT&VESD

Other Information:

- Act as a Resource Person in a Training programme on “Qualitative Improvement of Red Brick” organized by Nazrul Centenary Polytechnic and Directorate of MSME, Sub DIC Durgapur.
- Act as a Resource Person in a Faculty Development Programme organized by Narula Institute of Technology, Agarpara.
- Conducted Orientation programme on Advanced Survey for Polytechnic Faculties Conducted Industrial Training on Transmission Line Survey for EMC Limited.

Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Brief Profile of the Resource Person

2. Mr. Prabhat Kumar Mandal

Acted as

- Assistant Manager of Skipper Technologies India Private Limited.
- Organize multiple training on behalf of Skipper Technologies India Private Limited.

3. Mr. Amit Kumar

Acted as

- Senior Engineer of Skipper Technologies India Private Limited.
- Organize multiple training on behalf of Skipper Technologies India Private Limited.

4. Mr. Utpal Mondal


Acted as

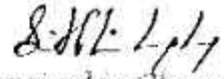
- Application Engineer of Skipper Technologies India Private Limited.
- Organize multiple training on behalf of Skipper Technologies India Private Limited.

5. Mr. Mrinal Mondal

Acted as

- Application Engineer of Skipper Technologies India Private Limited.
- Organize multiple training on behalf of Skipper Technologies India Private Limited.


Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.


Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Participation List of 3-Day State Level Workshop on Advanced Surveying Using DGPS and Total Station, 28-30th March 2023.

Participant List for 3-Day Workshop on
Advanced Surveying and Workshop using DGPS and Total Station

Sl No	Name	Mobile No	Institution/ Organization	Designation	Signature
1	ANANT KUMAR	9093307469	HE TC	B Tech Student	<i>Anant Kumar</i>
2	ANAND KUMAR	9895309584	HE TC	B Tech Student	<i>Anand Kumar</i>
3	ANANTA KUMAR	9878017790	HE TC	B Tech Student	<i>Ananta Kumar</i>
4	ANANTA KUMAR	9777802752	HE TC	B Tech Student	<i>Ananta Kumar</i>
5	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
6	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
7	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
8	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
9	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
10	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
11	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
12	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
13	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
14	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
15	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
16	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
17	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
18	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
19	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
20	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
21	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
22	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
23	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
24	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
25	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
26	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
27	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
28	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
29	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
30	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
31	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
32	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
33	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
34	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
35	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
36	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
37	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
38	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
39	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
40	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
41	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
42	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
43	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
44	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
45	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>
46	ANANTA KUMAR	9895309584	HE TC	B Tech Student	<i>Ananta Kumar</i>

Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly

[Signature]
Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

[Signature]
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly






Hooghly Engineering and Technology College


Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)

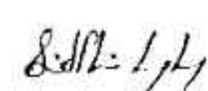
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Participation List of 3-Day State Level Workshop on Advanced Surveying Using DGPS and Total Station, 28-30th March 2023.

*Participant List For 3-Day Workshop on
Advanced Surveying and Workshop using DGPS and Total Station*

Sl No	Name	Mobile No	Institution/ Organisation Name	Designation	Signature
01	ANURAG KUMAR SINGH	9433116940	HETC	Faculty	
02	ANURAG KUMAR SINGH	9433116940	HETC	Faculty	
03	SUBHAM KUMAR SINGH	9830377133	HETC	B.Tech. Student	
04	ANURAG KUMAR SINGH	9830377133	HETC	B.Tech. Student	
05	ANURAG KUMAR SINGH	9830377133	HETC	B.Tech. Student	


Dr. Rajdip Paul
HOD, Dept. of CE,
HETC, Hooghly.


Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Attendance Sheet of 3-Day Workshop on "Advanced Surveying and Workshop using DGPS and Total Station"

Sl No	Name	Mobile No	Day 1 (28-03-2023)	Day 2 (29-03-2023)	Day 3 (30-03-2023)
1	Sanket Ach	9097985849			
2	Axay Prava Gangopadhyay	7998100964			
3	Soham Chakraborty	8916477754			
4	Debanik Ghosh	9777862952			
5	Samrat Das	9434107319			
6	Long Das	9434985951			
7	Yashwan Dutta	4853348885			
8	Monaisha Hossain	7449342892			
9	Abhinav Ghosh	7949123284			
10	Anil Roy	904997584			
11	Anirup Mukherjee	9835174057			
12	Shahid Ghosh	7275001094			
13	SOMNATH DEY	6293212938			
14	Soham Chatterjee	985181468			
15	Raj Sudhishan	9874276032			
16	Soham Chatterjee	601677774			
17	Santay Jana	7586397026			
18	Sakshi Koley	9083124083			
19	Ayaz Mulla Ghosh	624787777			
20	Sudhanu Samra	7910662037			
21	Pratik Das	893586776			
22	Rajat Kumar	9793747925			
23	Sourabh Kumar	9744756112			
24	Pratik Das	6313029926			
25	Somab Muk	8297194439			
26	Sabin Nandi	877795734			
27	Arpan Prasad	6297624058			
28	Anurag Mukherjee	6240716378			
29	Arpan Ghosh	9121009866			
30	Biprajit Das	667868932			
31	Sudipto Das	7718115958			
32	Puja Jana	9939099244			
33	Puja Ghosh	7679359847			
34	Asmita Jaita	6793314279			
35	Ra. Mukherjee	6289518683			
36	Smigdhra Ghosh	7045858861			
37	Keya Hal	9144085651			
38	Anurag Das	9030177797			
39	Anurag Das	7980247594			
40	Ashish Debnath	7001982683			
41	Tohina Das	9051770953			
42	Koushik Debnath	9809077894			
43	Bhaskar Das	8240173252			
44	Sanku Kundu	9064106345			
45	Sahil Kumar Ghosh	7717765884			
46	Jagrit Nandi	9030952122			

Dr. Rajdip Paul
MOO, Dept. of CE
HETC, Hooghly.

S.K. Laha
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Attendance Sheet of 3-Day Workshop on "Advanced Surveying and Workshop using DGPS and Total Station"

Sl No	Name	Mobile No	Day 1 (28-03-2023)	Day 2 (29-03-2023)	Day 3 (30-03-2023)
1	Sudhansu Sen	9061512274			
2	Jayal Nandi	9330952112			
3	Debasit Majumdar	7366853166			
4	Soumi Mondal	8411250362			
5	Samrat Dey	9002958884			
6	Ashana Chakraborty	8773212774			
7	Shresh Anand	9736402966			
8	Karun Kumar	9006281909			
9	Sagnik Roy	8718106478			
10	Keshu Choudhury	7044680711			
11	Soumyadip Maj	6018316719			
12	Sudhanu Banerjee	9032873015			
13	Abhishek Deb	9836027617			
14	Rajit Kharmaru	9737966912			
15	Sahel Hanshi	6210266721			
16	Rushab Ghosh	8018743416			
17	Priya Ghosh	6170117341			
18	Sagnik Naskar	7044116420			
19	Chaitan Kumar	9875613325			
20	Kabir SahaChakr	8340664406			
21	Samrat Roy Chowdhury	7990212453			
22	Jayanta Harshyapadhyay	9133555931			
23	Sudhansu Pal	9738469412			
24	Soumya Saha	9876409813			
25	Tanishq Majhi	9802749535			
26	Jayree Banik	9807271821			
27	Ayan Das	8040156701			
28	Souha Pal	6295474954			
29	Apurba Majumdar	9034194496			
30	Apurba Chatterjee	9831306357			
31	Sudhanu Kumar Sen	6032190507			
32	Divak Das	9836715301			
33	Aditya Dasgupta	7037960742			
34	Shyama Anand	9030887761			
35	Bikash Chakr	8875181558			
36	Arindam Dasgupta	7480918850			
37	Sudhansu Chatterjee	8930393041			
38	Priya Ghosh	6290307603			
39	Animesh Bhakta	0296210166			
40	Aniket Haldar	9807761819			
41	Ashutosh Pal	8881177466			
42	Atanusha Bhattacharyya	9433549030			
43	Rajen Ghosh	8810584966			
44	Rajit Saha Chowdhury	6106602233			
45	Souvik Ghosh	5041311946			
46	Alana Dey	6789507861			

S. M. L. L. L.

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal



Attendance Sheet of 3-Day Workshop on "Advanced Surveying and Workshop using DGPS and Total Station"

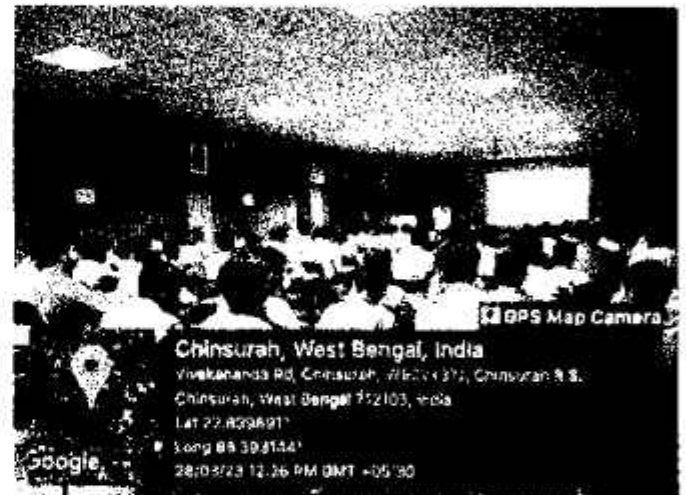
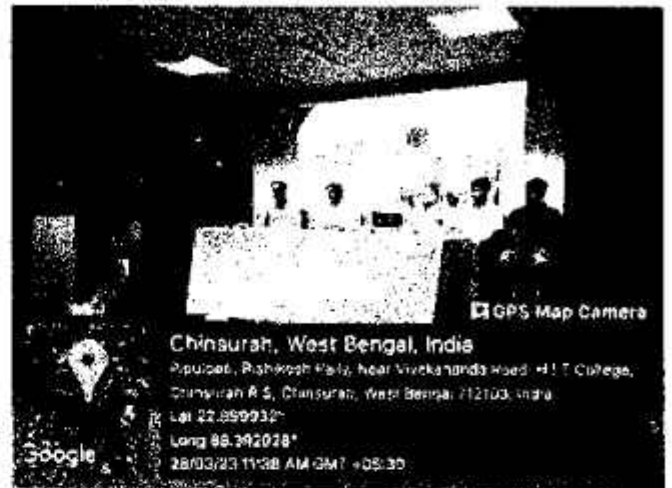
Sl No	Name	Mobile No	Day 1	Day 2	Day 3
			(28-03-2023)	(29-03-2023)	(30-03-2023)
01	Sudipta Kousabank	9163162845			
04	Joyta Golder	7001980771			
05	Ruman Mondal	7864977430			
06	Soumyadeep Bhadrakhan	7029833425			
07	Suman Das	6290291435			

Dr. Rajdip Paul
HOD, Dept. of C.E.
HETC, Hooghly

Sudipta Kousabank
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAJI (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal



Rajdip Paul
Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

S. D. L. 1/1/1
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal



Rajdip Paul
Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

S. N. 47
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Souvenir for resource person



Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly

Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)
Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Expenses of 3-Day State Level Workshop on Advanced Surveying Using DGPS and Total Station, 28-30th March 2023.

Hooghly Engineering and Technology College Note sheet

Date: 05/04/2023

This is to certify that the amount of Rs. 31952/- for 3-Day WORKSHOP on Advanced Surveying Using DGPS and Total Station from 28th to 30th March 2023. The actual expenses for the workshop are furnished below for the information of the competent authority.

Sr. No.	Particulars	Description	Expense
1	Travel charges for Dignitaries of this	Seven Tube	470
2	Remuneration for the Resource Persons	for 3 resource person	14000
3	Accommodation for Resource Persons	3 Days accommodation	3000
4	Food for Resource Persons	For 3 Days and 3 resource person	3546
5	Transportation charges (lease of car)	Lease for 3 days in two half	3121
6	Stationery	Free Memento for 3 Resource Person	1100
7	Printing Cost	1 Day certificate, Appreciation Letter, Poster, Brochure	4395
8	Welcome Set for Participants	Folder, Pen, and Pad (with Pencil holder)	3820
9	Miscellaneous	Miscellaneous	150
Total Expense			31952/-

Amount provided for by Principals' approval: 31952/- (in 2023)
of 28/3/23

Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly

Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly

Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly

Dr. Rajdip Paul
Dr. Rajdip Paul
HOD, Dept. of CE
HETC, Hooghly.

Dr. Rajdip Paul
Dr. Rajdip Paul
Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



Hooghly Engineering and Technology College

Approved by AICTE, Recognize by UGC, Affiliated to MAKAUT (Formerly WBUT)

Vivekananda Road, Pipulpati, P.O. & Dist. Hooghly, Pin 712103 West Bengal

Expenses of 3-Day State Level Workshop on Advanced Surveying Using DGPS and Total Station, 28-30th March 2023.

Hooghly Engineering and Technology College Note sheet

Date: 05/04/2023

This is to certify that the amount of Rs. 31952/- for the 3-Day WORKSHOP on "Advanced Surveying Using DGPS and Total Station" from 28th to 30th March 2023. The total expenses for the workshop are as follows: (The list is a bonafide of the competent authority)

Sl. No.	Item	Description	Expense
1	Stationery	Seven Folio	370
2	Remuneration to the Resource Persons	For 3 resource person	15000
3	Subsidization to the Resource Person	For 3 accommodation	1000
4	Travel for Resource Persons	For 3 (1000 each) 3 resource person	3000
5	Food for Resource Person	For 3 (1500 each) 3 resource person	4500
6	Stationery	For 3 (300 each) 3 resource person	900
7	Stationery	For 3 (150 each) 3 resource person	450
8	Stationery	For 3 (150 each) 3 resource person	450
9	Stationery	For 3 (150 each) 3 resource person	450
10	Stationery	For 3 (150 each) 3 resource person	450
11	Stationery	For 3 (150 each) 3 resource person	450
12	Stationery	For 3 (150 each) 3 resource person	450
13	Stationery	For 3 (150 each) 3 resource person	450
14	Stationery	For 3 (150 each) 3 resource person	450
15	Stationery	For 3 (150 each) 3 resource person	450
16	Stationery	For 3 (150 each) 3 resource person	450
17	Stationery	For 3 (150 each) 3 resource person	450
18	Stationery	For 3 (150 each) 3 resource person	450
19	Stationery	For 3 (150 each) 3 resource person	450
20	Stationery	For 3 (150 each) 3 resource person	450
21	Stationery	For 3 (150 each) 3 resource person	450
22	Stationery	For 3 (150 each) 3 resource person	450
23	Stationery	For 3 (150 each) 3 resource person	450
24	Stationery	For 3 (150 each) 3 resource person	450
25	Stationery	For 3 (150 each) 3 resource person	450
26	Stationery	For 3 (150 each) 3 resource person	450
27	Stationery	For 3 (150 each) 3 resource person	450
28	Stationery	For 3 (150 each) 3 resource person	450
29	Stationery	For 3 (150 each) 3 resource person	450
30	Stationery	For 3 (150 each) 3 resource person	450
31	Stationery	For 3 (150 each) 3 resource person	450
32	Stationery	For 3 (150 each) 3 resource person	450
33	Stationery	For 3 (150 each) 3 resource person	450
34	Stationery	For 3 (150 each) 3 resource person	450
35	Stationery	For 3 (150 each) 3 resource person	450
36	Stationery	For 3 (150 each) 3 resource person	450
37	Stationery	For 3 (150 each) 3 resource person	450
38	Stationery	For 3 (150 each) 3 resource person	450
39	Stationery	For 3 (150 each) 3 resource person	450
40	Stationery	For 3 (150 each) 3 resource person	450
41	Stationery	For 3 (150 each) 3 resource person	450
42	Stationery	For 3 (150 each) 3 resource person	450
43	Stationery	For 3 (150 each) 3 resource person	450
44	Stationery	For 3 (150 each) 3 resource person	450
45	Stationery	For 3 (150 each) 3 resource person	450
46	Stationery	For 3 (150 each) 3 resource person	450
47	Stationery	For 3 (150 each) 3 resource person	450
48	Stationery	For 3 (150 each) 3 resource person	450
49	Stationery	For 3 (150 each) 3 resource person	450
50	Stationery	For 3 (150 each) 3 resource person	450
51	Stationery	For 3 (150 each) 3 resource person	450
52	Stationery	For 3 (150 each) 3 resource person	450
53	Stationery	For 3 (150 each) 3 resource person	450
54	Stationery	For 3 (150 each) 3 resource person	450
55	Stationery	For 3 (150 each) 3 resource person	450
56	Stationery	For 3 (150 each) 3 resource person	450
57	Stationery	For 3 (150 each) 3 resource person	450
58	Stationery	For 3 (150 each) 3 resource person	450
59	Stationery	For 3 (150 each) 3 resource person	450
60	Stationery	For 3 (150 each) 3 resource person	450
61	Stationery	For 3 (150 each) 3 resource person	450
62	Stationery	For 3 (150 each) 3 resource person	450
63	Stationery	For 3 (150 each) 3 resource person	450
64	Stationery	For 3 (150 each) 3 resource person	450
65	Stationery	For 3 (150 each) 3 resource person	450
66	Stationery	For 3 (150 each) 3 resource person	450
67	Stationery	For 3 (150 each) 3 resource person	450
68	Stationery	For 3 (150 each) 3 resource person	450
69	Stationery	For 3 (150 each) 3 resource person	450
70	Stationery	For 3 (150 each) 3 resource person	450
71	Stationery	For 3 (150 each) 3 resource person	450
72	Stationery	For 3 (150 each) 3 resource person	450
73	Stationery	For 3 (150 each) 3 resource person	450
74	Stationery	For 3 (150 each) 3 resource person	450
75	Stationery	For 3 (150 each) 3 resource person	450
76	Stationery	For 3 (150 each) 3 resource person	450
77	Stationery	For 3 (150 each) 3 resource person	450
78	Stationery	For 3 (150 each) 3 resource person	450
79	Stationery	For 3 (150 each) 3 resource person	450
80	Stationery	For 3 (150 each) 3 resource person	450
81	Stationery	For 3 (150 each) 3 resource person	450
82	Stationery	For 3 (150 each) 3 resource person	450
83	Stationery	For 3 (150 each) 3 resource person	450
84	Stationery	For 3 (150 each) 3 resource person	450
85	Stationery	For 3 (150 each) 3 resource person	450
86	Stationery	For 3 (150 each) 3 resource person	450
87	Stationery	For 3 (150 each) 3 resource person	450
88	Stationery	For 3 (150 each) 3 resource person	450
89	Stationery	For 3 (150 each) 3 resource person	450
90	Stationery	For 3 (150 each) 3 resource person	450
91	Stationery	For 3 (150 each) 3 resource person	450
92	Stationery	For 3 (150 each) 3 resource person	450
93	Stationery	For 3 (150 each) 3 resource person	450
94	Stationery	For 3 (150 each) 3 resource person	450
95	Stationery	For 3 (150 each) 3 resource person	450
96	Stationery	For 3 (150 each) 3 resource person	450
97	Stationery	For 3 (150 each) 3 resource person	450
98	Stationery	For 3 (150 each) 3 resource person	450
99	Stationery	For 3 (150 each) 3 resource person	450
100	Stationery	For 3 (150 each) 3 resource person	450
Total Expense			31952/-

Approved by the competent authority
 Date: 05/04/2023
 Signature: [Handwritten Signature]
 Name: [Handwritten Name]
 Designation: [Handwritten Designation]

Dr. Rajdip Paul
 HOD, Dept. of CE
 HETC, Hooghly.

1.1.1

Sample documents of participation of the students
on their extracurricular activities.



Chinsurah, West Bengal, India
W92V+54F, Vivekananda Rd, Chinsurah R S,
Chinsurah, West Bengal 712103, India
Lat 22.900229°
Long 88.39283°
21/02/23 02:13 PM GMT +05:30



Kolkata, West Bengal, India
13, Vivekananda Rd, Chinsurah R S, Kolkata, West
Bengal 712103, India
Lat 22.900123°
Long 88.392605°
21/02/23 01:44 PM GMT +05:30



Kolkata, West Bengal, India
13, Vivekananda Rd, Chinsurah R S, Kolkata, West
Bengal 712103, India
Lat 22.90012°
Long 88.392651°
21/02/23 01:51 PM GMT +05:30



Chinsurah, West Bengal, India
chinsurah, new hospital Road, W92R+3V0, Chinsurah
R S, Chinsurah, West Bengal 712101, India
Lat 22.9001°
Long 88.39255°
21/02/23 01:47 PM GMT +05:30

Event Name: International Mother Language Day 2023 (Attendance Sheet)
 Venue: Hooghly Engineering & Technology College, Pipulpati; Date: 21.02.2023; Time: 01:30 pm onwards

Sl. No.	Name (in BLOCK Letters)	Dept.	Year	Signature	Sl. No.	Name (in BLOCK Letters)	Dept.	Year	Signature
1	SHUBHASHREE GHOSH	ECE	1st	Shubhashree Ghosh	25	RISHU MISHRA	CSE	2nd	Rishu Mishra
2	TANNUSHITA MOITRA	ECE	1st	Tannushita Moitra	26	DIPTI BAGU	ECE	2nd	Dipti Bagu
3	RISHITA SINHA	ECE	1st	Rishita Sinha	27	SAYANTI SAHA	ECE	2nd	Sayanti Saha
4	SAGANK SARKAR	ECE	1st	Sagank Sarkar	28	Ahana Bhattacharya	CSE	3rd	Ahanu Bhattacharya
5	Arpita Roy	ECE	1st	Arpita Roy	29	Shreya Dey	ECE	3rd	Shreyadey
6	SLCHISMITA HOWDHURY	FCE	1st	Slchismita Howdhury	30	Srijani Das	ECE	3rd	Srijanidasa
7	MONAMI SARKAR	CSE	1st	Monami Sarkar	31	Arunika Sen	CSE	2nd	Arunika Sen
8	DEBASHITA GHOSH	ECE	1st	Debashita Ghosh	32	Banika Bose	CSE	2nd	Banika Bose
9	Rupsa Nandy	ECE	1st	Rupsa Nandy	33	Dotla Seth	CSE	1st	Dotla Seth
10	Trisha Banerjee	ECE	1st	Trisha Banerjee	34	Monika Dutta	CSE	1st	Monika Dutta
11	Ankita Das	ECE	1st	Ankita Das	35	Aranya Chowdhury	ECE	1st	Aranya Chowdhury
12	ANJITA DARNAL	EE	2nd	Anjita Darnal	36	Biruba Mukhopadhyay	ECE	1st	Biruba Mukhopadhyay
13	Srijani Bhattacharyya	ECE	1st	Srijani Bhattacharyya	37	Susmita Das	ECE	1st	Susmita Das
14	SNIGIDHA GHOSHIAL	CE	2nd	Snigdha Ghoshial					
15	Swabhi Mondal	ESE	3rd	Swabhi Mondal					
16	ANKITA SEAL	CE	2nd	Ankita Seal					
17	Ankita Debbartha	CSE	1st	Ankita Debbartha					
18	Sanyukta Kundu	CSE	3rd	Sanyukta Kundu					
19	Ahona De	CSE	3rd	Ahona De					
20	Shreffi Ghosh	CSE	3rd	Shreffi Ghosh					
21	Sweetly Jha	CSE	3rd	Sweetly Jha					
22	Rupendranee Dey	CSE	3rd	Rupendranee Dey					
23	Kalyani Bhattacharya	ECE	2nd	Kalyani Bhattacharya					
24	Lona Das	CE	2nd	Lona Das					



Ministry of Culture
Government of India



CERTIFICATE OF PARTICIPATION

This is to certify that Mr *Chayan Nath* of *1st* Year, *Electronics and Communications Engineering* Department, Hooghly Engineering & Technology College has successfully participated in the event of '*Poster Design and Essay Competition*' in online mode commemorating **World AIDS Day 2023** organised by **NSS Unit of Hooghly Engineering & Technology College** on **01.12.2023**.

Mr. Swarup Samanta
PO, NSS, HETC

Dr. Smitadhi Ganguly
Principal in-Charge, HETC



CERTIFICATE OF PARTICIPATION

This is to certify that Mr. Kushan Prasad of ECE 1st Year participated in the Intra College Cricket Tournament 2023 held at Hooghly Engineering & Technology College campus from 19.12.2023 to 20.12.2023 .

D. Samanta

Convener, Games and Sports Committee

Siddhi L. H. H.

Principal in-Charge, HETC



CERTIFICATE OF PARTICIPATION

This is to certify that Shri Adarsh Kumar Singh of ECE 1st Year participated in the event 300 Meter Run in Annual Sports Meet 2024 held at Hooghly Engineering & Technology College campus on 13th January, 2024.

D. Samanta

Convener, Games and Sports Committee

Siddhi

Principal in-Charge, HETC



CERTIFICATE OF PARTICIPATION

This is to certify that Ms. **DEBANKITA PANJA** of 1st Year from 2023 – 27 batch, **Electronics and Communications Engineering Department** has successfully participated in the event '**Swachhata Hi Seva (SHS) 2023**' as a part of **Swachhata Pakhwada** by cleaning the neighbourhood between 28.09.2023 and 01.10.2023 at **Hooghly Engineering & Technology College**.

Mr. Swarup Samanta
PO, NSS, HETC

Dr. Smitadhi Ganguly
Principal In-Charge, HETC



CERTIFICATE OF PARTICIPATION

This is to certify that Ms *Debankita Panja* of *1st* Year, *Electronics and Communications Engineering* Department, Hooghly Engineering & Technology College has successfully participated in the event of '*Poster Design and Essay Competition*' in online mode commemorating **World AIDS Day 2023** organised by NSS Unit of Hooghly Engineering & Technology College on 01.12.2023.

Mr. Swarup Samanta
PO, NSS, HETC

Dr. Smitadhi Ganguly
Principal In-Charge, HETC



Certificate

OF PARTICIPATION

MyGov and Archaeological Survey of India congratulate

Debankitapanja

for successfully completing the **Heritage Quiz**.
We acknowledge your efforts. Keep participating!

Director General
Archaeological Survey of India



Certificate

-OF PARTICIPATION-

MyGov and Prasar Bharati congratulate

Abhiruphalder

for successfully completing **Swaraj Quiz - Episode: 40**
We acknowledge your efforts, keep participating!

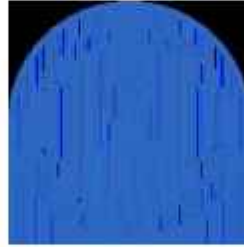
Gaurav Dwivedi, IAS
Chief Executive Officer, Prasar Bharati



Member Registration Certificate

This is to Certify that Mr. / Ms. ABHIRUP HALDER
has successfully registered & became the member of "National Institute
For Technical Training & Skill Development".

Congratulation!



RCPug

(Councilor, NITTSD)

Volunteer List of Remembrance 2023

Sl No	Name	Department	Year	Class Roll No	Contact number
1	Rajat Subhra Chowdhury	CE	3rd Year	03	8100660233
2	Abhirup Halder	EE	2nd Year	19	09831125432
3	Rudra Sharma	EE	2nd Year	12	9163941100
4	PriyoGhosh	CE	3rd Year	05	9674707356
5	Subarna Chatterjee	CE	3rd Year	55	8910383041
6	Sudipta Ghosh	EE	3rd Year	22	8918431759
7	Suman Nath	CE	1st Year	06	8777657008
8	Subham Nath	CSE	1st Year	15	9123070895
9	Satyam Das	CSE	1st Year	14	9002245564
10	Avishek Bhattacharjee	ECE	3rd Year	02	9748567677
11	Anindya Mondal	EE	2nd Year	18	9609331699
12	Sayantana Mallik	ECE	3rd Year	09	9903638996
13	AnirbanDhabak	EE	2nd Year	20	9749002352
14	Abhishek Ojha	CSE	3rd Year	09	8777090144
15	Subhangani Jha	CSE	3rd Year	76	7439329004
16	Kasturi Pramanick	ECE	4th Year	35	9674471140
17	Sweetly Jha	CSE	3rd Year	23	8910574693
18	Pritam Roy	CSE	1st Year	21	7278161653
19	Ankita Dey	CSE	3rd Year	61	7044005427
20	ArunavaChaki	ECE	3rd Year	29	7980523133
21	SinchanBasu	CSE	3rd Year	16	9836655191
22	Tushar Ghosh	CE	3rd Year	13	8918743416
23	Biswajit Majumder	CE	3rd Year	29	7365853166
24	Soumen Das	CE	4th Year	32	8582980304
25	Rahul Das	CE	2nd Year	60	07980783805
26	Subhojit Mondal	ME	4th Year	16	8906855936
27	Suraj Prasad	ECE	4th Year		9732104089
28	Souvik Chakraborty	ECE	4th Year		9564488061
29	Anup Bhar	CSE	2nd Year	68	8101804748
30	Trishit Char	CSE	2nd Year	59	8101326242

S.P.L. L/L 29.01.23

Principal in Charge
Hooghly Engineering & Technology College
Vivekananda Road, Pipulpati, Hooghly.



Chiranjit Das 29/01/2023

Jt. Convener,
Alumni Committee,
HETC

CERTIFICATE of Participation

This is to certify that Mr./Ms. of Year,
..... Department, has successfully
participated in the Technical Fest - TECHetc 2K19 during 22-23 February, 2019
at Hooghly Engineering & Technology College.

S. Bhattacharya
Prof. (Dr.) S. Bhattacharya
Principal, HETC



Pratyay Debnath
Dr. Pratyay Debnath
Convener, TECHetc 2K19



Handwritten mark

CERTIFICATE
Of Appreciation

This is to certify that Mr./Ms. Pranaya Debnath
of 1st Year CIVIL Department,
H.E.T.C. has secured the 2nd
position in the event BUILD field as part of the
Technical Fest - TECHETC held on 22-23 February,
2019 at Hooghly Engineering & Technology College.

S. Bhattacharyya
Prof. (Dr.) S. Bhattacharyya
Principal, HETC

Pranaya Debnath
Dr. Pranaya Debnath
Convener, TECHETC 2019

Jyanti Bhowi



CERTIFICATE Of Appreciation

This is to certify that *Sanjay Senapati*
of *1st* Year *CIVIL ENGINE* Department,
H.E.T.C. has secured the *2nd*
position in the event *QUIZZARD* held as part of the
Technical Fest - *TECH* etc. during *22-23* February,
2019 at *Hooghly Engineering & Technology College*.

S. Bhattacharya
Prof. (Dr.) S. Bhattacharya
Principal, H.E.T.C.

Dr. Pradyumn Chakraborty
Dr. Pradyumn Chakraborty
Coordinator, TFE & HETC 2019



CERTIFICATE of Participation

This is to certify that Mr./Ms. ROHINI PRASAD of 1st Year,
MECHANICAL Department, HETC has successfully
participated in the Technical Fest - TECHete 2K19 during 22-23 February, 2019
at Hooghly Engineering & Technology College.

Shanacharya

Prof. (Dr.) S. Bhattacharyya
Principal, HETC



Pradyum Debnath

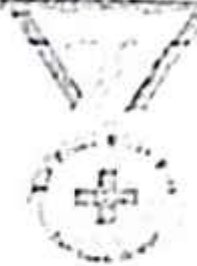
Dr. Pradyum Debnath
Convener, TECHete 2K19





Indian Red Cross Society

Ranchi Branch
BLOOD BANK
24 HOURS SERVICE



No. 123

CERTIFICATE OF APPRECIATION

This certificate is awarded to Mr / Mrs. / Miss.
Birendra shaw

in recognition of his / her valuable committed volunteer
service to the Voluntary Blood donation Camp held
on 7-02-2019 at SCHENKER, INDIA, PVT. LTD.

He/She has rendered a Splendid Social Service of High order.
This Noble Gesture is highly appreciated.

GENERAL SECRETARY

"BLOOD DONATION IS LIFE DONATION"

12 / 50 Market Road, Egmore, Chennai, 600 095. Phone: 044 2555 4325, 2559 4393. Fax: 2552 4563. Cell: 991 94884 8700
E-mail: redcross@mahatmabharatitryshila.com, redcross@mahatmabharatitryshila.com, www.indianredcross.org

Birendra shaw





BLOOD DONATION CAMP



Organised by :
PALLI MANGAL SAMITY

REGD. NO.S / 25491
NABAGRAM "C" BLOCK, HOOGHLY
ESTD - 1969

In appreciation of the humanitarian act of

Sri / Smt..... Rupanjana Ganguly

For donating Blood voluntarily in the Blood Donation Camp of Palli Mangal Samity on 20th January 2019 as a symbol of universal peace.

Utpal Kar Roy
UTPAL KAR ROY
President
PALLI MANGAL SAMITY

Asit Kumar Malik
ASIT KUMAR MALIK
Secretary
PALLI MANGAL SAMITY

Rupanjana Ganguly



By Courtesy of : Nabagram Peoples' Co-operative Credit Bank Ltd.
11, Vivekananda Road, Nabagram, Hooghly, Pin: 712246 Phone: 2673 0919





KOTHARI MEDICAL CENTRE BLOOD BANK

H. E. Alipore Road, Kothari - 750 021
Phone - 033 2567079 / 033 2567107 / 033 2567105
E-mail - kotharibloodbank@ipscs.com
Drug License No. - DL152/MS/UNCL/AA/2018



Certificate of Appreciation

We are pleased to appreciate the noble gesture of *Shri / Smt. Subhajit... Ghosh...*
..... for donating blood voluntarily at 'Voluntary Blood
Donation Camp organized on 20.09.2019..... by HETC.....
..... at HETC..... Campus..... (camp site)
in association with Kothari Medical Centre Blood Bank.

Date : 20.09..... 2019

Medical Officer
Kothari Medical Centre Blood Bank

Handwritten signature



CERTIFICATE

of Participation

This is to certify that Mr./Ms. SAYAN MUKHERJEE of 2ND Year,
CIVIL ENGINEERING Department, 2019 - 2022 has successfully
participated in the Technical Fest TECHete 2K20 during 28-29 February, 2020 at Hooghly Engineering &
Technology College.

S. Bhattacharyya
Prof. (Dr.) S. Bhattacharyya
Principal, HETC

Pradyay Debnath
Dr. Pradyay Debnath
Convener, TECHete 2K20



CERTIFICATE

of Participation

This is to certify that Mr./Ms. SANJAN PAL of 2nd Year,
CE Department, JW CUES has successfully
participated in the Technical Fest - TECHetc 2K20 during 28-29 February, 2020 at Hooghly Engineering &
Technology College.

S. Bhattacharya
Prof. (Dr.) S. Bhattacharyya
Principal, HETC

Pradyum Debnath
Dr. Pradyum Debnath
Convener, TECHetc 2K20





HOOGHLY ENGINEERING COLLEGE
HOOGHLY



THE ONLINE 2020



VOLUNTEER

BARSAH

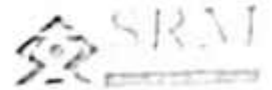
MAY 10, 2020





SRM TRICHY ARTS AND SCIENCE COLLEGE

(Affiliated to Bharathidasan University)
SRM Nagar, Trichy - Chennai Highway,
Near Samayapuram, Trichy - 621 105



CERTIFICATE

This is to certify that **Mr./Ms. SIBORAM MUKHERJEE** of Hooghly Engineering and technology College has participated in the "National Level Marketing Quiz" conducted by the Department of Management Studies, SRM Trichy Arts and Science College, Trichy in June 2021.

Dr.S.Fabiyola Kavitha
Coordinator & HoD

Dr.C.K.Kotravel Bharathi
Principal

Computer - Generated Certificate. No Signature is required

Made for free with Certify.com





Certificate

OF PARTICIPATION

This is to certify that Mr. (Ms.) Akash Dutta Banik of
2nd Year, CE Department has successfully
participated in the Blood Donation Camp organized by NSS Unit
of Hooghly Engineering & Technology College on 20 April, 2022.

Swarn Samanta

Mr. Swarn Samanta
PO, NSS, HETC

Saurav Chowdhury

Mr. Saurav Chowdhury
II. Convenor, NSS, HETC

Dr. Smitadhi Ganguly

Dr. Smitadhi Ganguly
Principal in-Charge, HETC





Certificate

OF PARTICIPATION

This is to certify that Mr./Ms. Pranoy Chatterjee of
2nd Year, EE Department has successfully
participated in the Blood Donation Camp organized by NSS Unit
of Hooghly Engineering & Technology College on 20 April, 2022.

Swarn Samanta

Mr. Swarn Samanta
PO, NSS, HETC

Saurav Chowdhury

Mr. Saurav Chowdhury
Jt. Convenor, NSS, HETC

Smitadhi Ganguly

Dr. Smitadhi Ganguly
Principal in-Charge, HETC





Certificate

OF PARTICIPATION

This is to certify that Mr./Ms. Anirban Bala of
3rd Year, CE Department has successfully
participated in the Blood Donation Camp organized by NSS Unit
of Hooghly Engineering & Technology College on 20 April, 2022.

Swarup Samanta

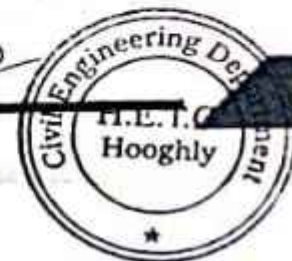
Mr. Swarup Samanta
PO, NSS, HETC

Saurav Chowdhury

Mr. Saurav Chowdhury
Jt. Convenor, NSS, HETC

Smitadhi Ganguly

Dr. Smitadhi Ganguly
Principal in-Charge, HETC



HOUSHLY ENGINEERING
AND
TECHNOLOGY



PRESENTS

UTKARSHA

2K22

VOLUNTEER

NAME

Aishik Sengupta

DEPT

(CE)





Certificate

OF PARTICIPATION

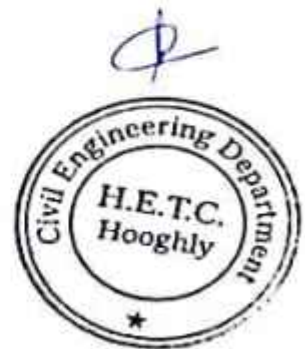
This is to certify that Mr./Ms. Souvik Pore of
4th Year. CE Department has successfully
 participated in the Blood Donation Camp organized by NSS Unit
 of Hooghly Engineering & Technology College on 20 April, 2022.

Swarnaparna Samanta
 Mr. Swarnaparna Samanta
 H. E. T. C. Hooghly

Saurav Chowdhury
 Mr. Saurav Chowdhury
 H. E. T. C. Hooghly

Smitadhi Ganguly
 Dr. Smitadhi Ganguly
 Principal in Charge, H.E.T.C.

Signed for
 H. E. T. C.





Certificate

OF PARTICIPATION

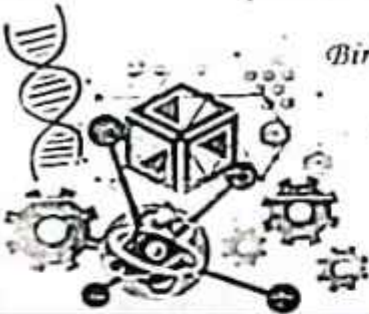
This is to certify that Mr./Ms. Shruwanay Das of
4th Year, CE Department has successfully
participated in the Blood Donation Camp organized by NSS Unit
of Hooghly Engineering & Technology College on 20 April, 2022.

Swarup Samanta
Mr. Swarup Samanta
PO, NSS, HETC

Saurav Chowdhury
Mr. Saurav Chowdhury
Jt. Convenor, NSS, HETC

Smitadhi Ganguly
Dr. Smitadhi Ganguly
Principal In-Charge, HETC





विज्ञान एवं अभियांत्रिकी मेला
SCIENCE & ENGINEERING FAIR 2023

Organised by
BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM
A Unit of National Council of Science Museums
Ministry of Culture, Govt. of India

This is to certify that Arkaprava Gangopadhyay
of Hooghly Engineering & Technology College, Hooghly, West Bengal
participated in the Science and Engineering Fair 2023 held at
Birla Industrial and Technological Museum from January 10 to 13, 2023
and was awarded Special Prize.


Subhadrata Chandhuri
Director
Birla Industrial & Technological Museum





CERTIFICATE OF APPRECIATION

THIS CERTIFICATE IS PROUDLY PRESENTED TO

Ankita Seal

of 2nd year, CE Department, HETC has secured
the 1st position in the event Model Display, held as part of
the Technical Fest - TECHetc 2K23 during 17-18 March, 2023 at Hooghly
Engineering & Technology College.

Dr. Smitadhi Ganguly

Dr. Smitadhi Ganguly
Principal in-Charge, HETC

Dr. Pratyay Debnath

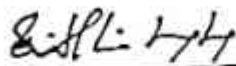
Dr. Pratyay Debnath
Convener, TECHetc 2K23



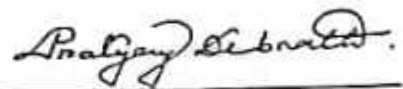


CERTIFICATE OF PARTICIPATION

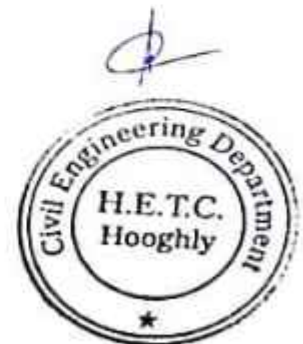
This is to certify that Mr./ Mrs. RAJAT SUBHRA CHOWDHURY. of 3RD year, CIVIL Department, HETC has successfully participated in the Technical Fest - TECHetc 2K23 during 17-18 March, 2023 at Hooghly Engineering & Technology College.



Dr. Smitadhi Ganguly
Principal in-Charge, HETC



Dr. Pratyay Debnath
Convener, TECHetc 2K23






State Blood Transfusion Council, West Bengal

Swasthya Bhawan, 1st Floor, Wing - B
GN - 29, Sector - V, Salt Lake, Kolkata - 700 091



CERTIFICATE OF APPRECIATION

We are pleased to appreciate the noble gesture of Sri / Smt. Pranjy Ghosh
for donating blood voluntarily at Blood Centre/Voluntary Blood Donation Camp organised on 26th March 2023
by L.D.S.S.
at Rambhadr Ghosh Lane, Liluan Hospital
in association with State Government Hospital Blood Centre.


Medical Officer in charge
Hospital Blood Centre

MSVP Superintendent
MCH/Hospital

Date: 26/3/23 2023





CERTIFICATE OF PARTICIPATION

This is to certify that Mr./ Ms. Biswajit Koley of
4th year, CE Department, HETC has successfully
participated in the Technical Fest - TECHetc 2K23 during 17-18 March,
2023 at Hooghly Engineering & Technology College.

Smitadhi Ganguly

Dr. Smitadhi Ganguly
Principal in-Charge, HETC

Pratyay Debnath

Dr. Pratyay Debnath
Convenor, TECHetc 2K23





State Blood Transfusion Council, West Bengal

Swasthya Bhawan, 1st Floor, Wing - B
GN - 29, Sector - V, Salt Lake, Kolkata - 700 091



CERTIFICATE OF APPRECIATION

We are pleased to appreciate the noble gesture of Shri / Smt. Aishik Sengupta
for donating blood voluntarily at Blood Centre/Voluntary Blood Donation Camp organised on 04.09.2022
by E.P.1 (M) Serampore (West) 1, 2, 3 Branches
at (Camp Site)
in association with State Government Hospital Blood Centre.

[Signature]
Medical Officer in charge

Date 04.09.2022 Hospital Blood Centre

