






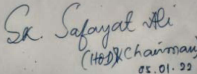
ALIAH UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING
Action Area II, Plot No. IIA/27, New Town, Kolkata 700160


In the online meeting of Board of Studies held on 04/01/22. The syllabus of M.Tech (Structural Engineering, Geotechnical Engineering and Water Resources Engineering) framed by the faculty members of the department has been finalized.



04/01/22
Dr. Supia Khatun



04/01/2022
Mohsin Jamal



04/01/2022
Md. Ragnib Adil

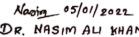

05.01.22



04/01/22
Nehal Ahmed


05/01/22
Md. Wasim Akram


04/01/22
Mohd Sayeed Ul Hasan


05/01/22
Dr. Indranil Mukherjee


05/01/2022
DR. NASIM ALI KHAN


05.01.2022
Dr. Golam Kibria


Dr. Gupinath Bhandari
Associate Professor
Department of Civil Engineering
Jadavpur University
Kolkata - 700 032



Course Structure and Syllabus

For

Two Year M. Tech Programme

In

Structural Engineering

w. e. f 2021-22

Department of Civil Engineering

Aliah University

II A/ 27, Newtown, Kolkata 700156,

West Bengal, India



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
Structural Engineering

1st YEAR 1st SEMESTER

S. No.	Course code	Name of the course	Periods per week				Credit
			L	T	P	T	
1	CENPGPC01	Advanced Structural Analysis (FEM)	3	0	0	3	3
2	CENPGPC02	Structural Dynamics & Earthquake Engineering	3	0	0	3	3
3	CENPGPE01	Elective-I	3	0	0	3	3
4	CENPGPE02	Elective-II	3	0	0	3	3
5	CENPGPC51	LAB-I	0	0	4	4	2
6	UCEPGAU01	Audit Course I	4	0	0	0	0
7		Audit Course II(to be opted from pool appended in appendix A)	2	0	0	0	0
TOTAL CREDIT							14



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
Structural Engineering

1st YEAR 2nd SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPC03	Theory of Elasticity & Plasticity	3	0	0	3	3
2	CENPGPC04	Earthquake Resistant Design of Structures	3	0	0	3	3
3	CENPGPE03	Elective-III	3	0	0	3	3
4	CENPGPE04	Elective-IV	3	0	0	3	3
5		Open Elective(to be opted from pool prepared by all engineering departments)	3	0	0	3	3
6	CENPGPC52	LAB-II	0	0	4	4	2
7	CENPGPR01	Mini Project	0	0	4	4	2
TOTAL CREDIT							19

2nd YEAR 3rd SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPE05	Elective-V	3	0	0	3	3
2	CENPGPR02	Research Methodology & IPR	2	0	0	2	2
3	CENPGPR03	Dissertation-I	0	0	20	20	10
TOTAL CREDIT							15



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
Structural Engineering

2nd YEAR 4TH SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPR04	Dissertation-II	0	0	32	32	16
TOTAL CREDIT							16

Summary of credits:

Semester I	Semester I	Semester I	Semester I	Total
14	19	15	16	64

List of Elective Subjects

Elective-I

1. Soil Structure Interaction
2. Advanced Foundation Design
3. Earthquake Geotechnical Engineering

Elective-II

- 1 Prestressed Concrete
- 2 Advanced Structural Design
- 3 Design of Tall Buildings
- 4 Stability of Structures

Elective-III

1. Bridge Engineering
2. Composite Materials and Structures
3. Advanced Concrete Technology
4. Theory of Plates & Shells



ALIAH UNIVERSITY

Curriculum for M. Tech in Civil Engineering Department
Structural Engineering

Elective-IV

1. Optimization of Structures
2. Reliability Analysis of Structures
3. Structural Health Monitoring & Rehabilitation of Structures
4. Advanced Construction Techniques

Electives-V

1. Numerical Analysis
2. Theory and Application of GIS
3. Cost Management of Engineering Project



ALIAH UNIVERSITY

Curriculum for M. Tech in Civil Engineering Department
Structural Engineering

Appendix A

Pool of AUDIT courses II

SL NO	COURSE Code	COURSENAME
1	UCEPGMC01	Pedagogy Studies
2	UCEPGMC02	English for Research Paper Writing
3	UCEPGMC03	Disaster Management
4	UCEPGMC04	Sanskrit for Technical Knowledge
5	UCEPGMC05	Value Education
6	UCEPGMC06	Constitution of India
7	UCEPGMC07	Stress Management by Yoga
8	UCEPGMC08	Personality Development through Life Enlightenment Skills.

Pool of Open Elective Courses (OEC) for PG CBCS Curriculum for Engineering Branches

As per the options submitted by five engineering department, the pool of OEC is hereby constituted and tabulated in the following table. ***It is expected that respective department will choose any course for their students as OEC other than the courses offered by them.***

Sl no	Code	Course	Offering department
1	CSEPGOE01	Image Processing	CSE
2	CSEPGOE02	Data Analytics	
3	CSEPGOE03	Internet of Things	
4	CSEPGOE04	Operations Research	



ALIAH UNIVERSITY

Curriculum for M. Tech in Civil Engineering Department Structural Engineering

5	CENPGOE01	Waste to Energy	CEN
6	CENPGOE02	Remote Sensing & GIS	
7	EENPGOE01	Optimization in Engineering	EEN
8	EENPGOE02	Essentials of Renewable Energy System	
9	EENPGOE03	Industrial Automation & Control	
10	ECEPGOE01	Laser Systems and Applications	ECE
11	ECEPGOE02	Cyber Physical Systems	
12	ECEPGOE03	Signal and Image Processing	
13	MENPGOE01	Materials Engineering	MEN
14	MENPGOE02	Finite Elements Analysis	
15	MENPGOE03	Non-Conventional Energy Sources	



Course Structure and Syllabus

For

Two Year M. Tech Programme

In

Geotechnical Engineering

w. e. f 2021-22

Department of Civil Engineering

Aliah University

II A/ 27, Newtown, Kolkata 700156,

West Bengal, India



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
Geotechnical Engineering

1st YEAR 1st SEMESTER

S. No.	Course code	Name of the course	Periods per week				Credit
			L	T	P	T	
1	CENPGPC01	Advanced Theory of Soil Mechanics	3	0	0	3	3
2	CENPGPC02	Advanced Foundation Design	3	0	0	3	3
3	CENPGPE01	Elective-I	3	0	0	3	3
4	CENPGPE02	Elective-II	3	0	0	3	3
5	CENPGPC51	LAB-I	0	0	4	4	2
6	UCEPGAU01	Audit Course I	4	0	0	0	0
7		Audit Course II(to be opted from pool appended in appendix A)	2	0	0	0	0
TOTAL CREDIT							14



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
Geotechnical Engineering

1st YEAR 2nd SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPC03	Soil Dynamics and Machine Foundations	3	0	0	3	3
2	CENPGPC04	Geotechnical Earthquake Engineering	3	0	0	3	3
3	CENPGPE03	Elective-III	3	0	0	3	3
4	CENPGPE04	Elective-IV	3	0	0	3	3
5		Open Elective(to be opted from pool prepared by all engineering departments)	3	0	0	3	3
6	CENPGPC52	LAB-II	0	0	4	4	2
7	CENPGPR01	Mini Project	0	0	4	4	2
TOTAL CREDIT							19

2nd YEAR 3rd SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPE05	Elective-V	3	0	0	3	3
2	CENPGPR02	Research Methodology & IPR	2	0	0	2	2
3	CENPGPR03	Dissertation-I	0	0	20	20	10
TOTAL CREDIT							15



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
Geotechnical Engineering

2nd YEAR 4TH SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPR04	Dissertation-II	0	0	32	32	16
TOTAL CREDIT							16

Summary of credits:

Semester I	Semester II	Semester III	Semester IV	Total
14	19	15	16	64

List of Electives:

Elective:-I

1. Soil Structure Interaction
2. Analytical Geo mechanics
3. Reinforced Soil Structures
4. Seismic Design of Foundation

Elective:-II

1. Slope Stability and Earthen Dam
2. Retaining Structures and Underground Construction
3. Geotechnics for Highway Engineering
4. Application of FEM in Geotechnical Engineering



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
Geotechnical Engineering

Elective:-III

1. Subsoil Investigation and Instrumentation
2. Design of Foundation in Expansive soil
3. Application of Smart Material in Geotechnical Engineering
4. Coastal and Offshore Geotechnology

Elective:-IV

1. Ground Improvement Techniques
2. Environmental Geo Technique
3. Rock Mechanics and Tunnelling
4. Uncertainty Analysis in Geotechnical Engineering

Electives V

1. Numerical Analysis
2. Theory and Application of GIS
3. Cost Management of Engineering Project



Appendix A

Pool of AUDIT courses II

SL NO	COURSE Code	COURSENAME
1	UCEPGMC01	Pedagogy Studies
2	UCEPGMC02	English for Research Paper Writing
3	UCEPGMC03	Disaster Management
4	UCEPGMC04	Sanskrit for Technical Knowledge
5	UCEPGMC05	Value Education
6	UCEPGMC06	Constitution of India
7	UCEPGMC07	Stress Management by Yoga
8	UCEPGMC08	Personality Development through Life Enlightenment Skills.

Pool of Open Elective Courses (OEC) for PG CBCS Curriculum for Engineering Branches

As per the options submitted by five engineering department, the pool of OEC is hereby constituted and tabulated in the following table. ***It is expected that respective department will choose any course for their students as OEC other than the courses offered by them.***

Sl no	Code	Course	Offering department
1	CSEPGOE01	Image Processing	CSE
2	CSEPGOE02	Data Analytics	
3	CSEPGOE03	Internet of Things	
4	CSEPGOE04	Operations Research	



ALIAH UNIVERSITY

Curriculum for M. Tech in Civil Engineering Department Geotechnical Engineering

5	CENPGOE01	Waste to Energy	CEN
6	CENPGOE02	Remote Sensing & GIS	
7	EENPGOE01	Optimization in Engineering	EEN
8	EENPGOE02	Essentials of Renewable Energy System	
9	EENPGOE03	Industrial Automation & Control	
10	ECEPGOE01	Laser Systems and Applications	ECE
11	ECEPGOE02	Cyber Physical Systems	
12	ECEPGOE03	Signal and Image Processing	
13	MENPGOE01	Materials Engineering	MEN
14	MENPGOE02	Finite Elements Analysis	
15	MENPGOE03	Non-Conventional Energy Sources	



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
(Water Resources Engineering)

Course Structure and Syllabus
For
Two Year M. Tech Programme
In
Water Resources Engineering
w. e. f 2021-22

Department of Civil Engineering
Aliah University
II A/ 27, Newtown, Kolkata 700156,
West Bengal, India



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
(Water Resources Engineering)

1st YEAR 1st SEMESTER

S. No.	Course code	Name of the course	Periods per week				Credit
			L	T	P	T	
1	CENPGPC01	Advanced Hydraulic Structure	3	0	0	3	3
2	CENPGPC02	Remote Sensing & GIS	3	0	0	3	3
3	CENPGPE01	Elective I	3	0	0	3	3
4	CENPGPE02	Elective II	3	0	0	3	3
5	CENPGPC51	LAB-I	0	0	4	4	2
6	UCEPGAU01	Audit Course I	4	0	0	0	0
7		Audit Course II(to be opted from pool appended in appendix A)	2	0	0	0	0
TOTAL CREDIT							14



ALIAH UNIVERSITY

Curriculum for M. Tech in Civil Engineering Department (Water Resources Engineering)

1st YEAR 2nd SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPC03	Water Resources Planning and Management	3	0	0	3	3
2	CENPGPC04	River Engineering	3	0	0	3	3
3	CENPGPE03	Elective III	3	0	0	3	3
4	CENPGPE04	Elective IV	3	0	0	3	3
5		Open Elective(to be opted from pool prepared by all engineering departments)	3	0	0	3	3
6	CENPGPC52	LAB-II	0	0	4	4	2
7	CENPGPR01	Mini Project	0	0	4	4	2
TOTAL CREDIT							19

2nd YEAR 3rd SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPE05	Elective-V	3	0	0	3	3
2	CENPGPR02	Research Methodology & IPR	2	0	0	2	2
3	CENPGPR03	Dissertation-I	0	0	20	20	10
TOTAL CREDIT							15



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
(Water Resources Engineering)

2nd YEAR 4TH SEMESTER

Sl no	Paper code	Name of the paper	Periods per week				Credit
			L	T	P	T	
1	CENPGPR04	Dissertation-II	0	0	32	32	16
TOTAL CREDIT							16

Summary of credits:

Semester I	Semester II	Semester III	Semester IV	Total
14	19	15	16	64

List of Electives:

Elective-I

1. Advanced Computing in Water Resource Engineering
2. Stochastic hydrology
3. Watershed Development and Management.
4. Soft-computing techniques in hydrology
5. Hydrological Analysis and Design

Elective-II

1. Hydropower System Planning
2. Flood forecasting
3. Climate Change and Water Resources



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
(Water Resources Engineering)

Elective-III

1. Application of Soft Computing in Water Resource Engineering
2. Irrigation and drainage engineering
3. Groundwater Development and Management.
4. Groundwater Hydrology
5. Water Resources System Reliability

Electives IV

1. Economics of Water Resource Planning
2. Rural Water Supply and Environmental Sanitation
3. Channel and fluvial hydraulics
4. Water and Land Laws

Electives V

1. Numerical Analysis
2. Theory and Application of GIS
3. Cost Management of Engineering Project



ALIAH UNIVERSITY
Curriculum for M. Tech in Civil Engineering Department
(Water Resources Engineering)

Appendix A

Pool of AUDIT courses II

SL NO	COURSE Code	COURSENAME
1	UCEPGMC01	Pedagogy Studies
2	UCEPGMC02	English for Research Paper Writing
3	UCEPGMC03	Disaster Management
4	UCEPGMC04	Sanskrit for Technical Knowledge
5	UCEPGMC05	Value Education
6	UCEPGMC06	Constitution of India
7	UCEPGMC07	Stress Management by Yoga
8	UCEPGMC08	Personality Development through Life Enlightenment Skills.

Pool of Open Elective Courses (OEC) for PG CBCS Curriculum for Engineering Branches

As per the options submitted by five engineering department, the pool of OEC is hereby constituted and tabulated in the following table. ***It is expected that respective department will choose any course for their students as OEC other than the courses offered by them.***

Sl no	Code	Course	Offering department
1	CSEPGOE01	Image Processing	CSE
2	CSEPGOE02	Data Analytics	
3	CSEPGOE03	Internet of Things	
4	CSEPGOE04	Operations Research	



ALIAH UNIVERSITY

Curriculum for M. Tech in Civil Engineering Department (Water Resources Engineering)

5	CENPGOE01	Waste to Energy	CEN
6	CENPGOE02	Remote Sensing & GIS	
7	EENPGOE01	Optimization in Engineering	EEN
8	EENPGOE02	Essentials of Renewable Energy System	
9	EENPGOE03	Industrial Automation & Control	
10	ECEPGOE01	Laser Systems and Applications	ECE
11	ECEPGOE02	Cyber Physical Systems	
12	ECEPGOE03	Signal and Image Processing	
13	MENPGOE01	Materials Engineering	MEN
14	MENPGOE02	Finite Elements Analysis	
15	MENPGOE03	Non-Conventional Energy Sources	