

COURSE STRUCTURE

FOR

B. TECH. COURSE

IN

ENVIRONMENTAL ENGINEERING



Department of Environmental Science & Engineering
INDIAN SCHOOL OF MINES UNIVERSITY
Dhanbad-826 004 (Jharkhand)

**Course Structure for Bachelor of Technology in
Environmental Engineering**

I- Semester B-Tech (Common- A Group)

L: Lecture; T: Tutorial; P: Practical

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	AMC 11101	Mathematics-I	3-1-0	7
2.	APC 11101	Physics	3-1-0	7
3.	MMC 11101	Engineering Graphics	1-3-0	5
4.	EEC 11101	Electrical Technology	3-1-0	7
5	MMC 11103	Engineering Mechanics	3-1-0	7
6.	GLD/CMD 11301	Earth System Science (S) AGL: 2-0-0 ; ESE: 1-0-0	3-0-0	6
7	HSC-11301	Value Education Human Rights and Legislative (S)	3-0-0	6
8	APC 12201	Physics (Practical)	0-0-3/2	1.5
9	EEC 12201	Electrical Technology (Practical)	0-0-3/2	1.5
10	DSW	Counseling / Special Class	0-0-0	0
Total			19-7-3	48

I- Semester B-Tech (Common- B Group)

L: Lecture; T: Tutorial; P: Practical

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	AMC 11101	Mathematics-I	3-1-0	7
2.	ACC 11101	Chemistry	3-1-0	7
3.	MMC 11102	Manufacturing Process	1-3-0	5
4.	EIC 11101	Electronics Engineering	3-1-0	7
5	HSC 11101	English for Science & Technology	3-1-0	7
6.	FMD/CMD 11301	Global Energy Scenario & Energy Security of India (S) FME: 2-0-0 ; ESE: 1-0-0	3-0-0	6
7	CSC-11301	Computer Programming (S)	3-0-0	6
8	ACC 12201	Chemistry (Practical)	0-0-3/2	1.5
9	EIC 12201	Electronics Engineering (Practical)	0-0-3/2	1.5
10	DSW	Counseling / Special Class	0-0-0	0
Total			19-7-3	48

II- Semester B-Tech (Common- A Group)*L: Lecture; T: Tutorial; P: Practical*

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	AMC 12101	Mathematics-II	3-1-0	7
2.	ACC 12101	Chemistry	3-1-0	7
3.	MMC 12101	Manufacturing Process	1-3-0	5
4.	EIC 12101	Electronics Engineering	3-1-0	7
5	HSC 12101	English for Science & Technology	3-1-0	7
6.	FMD/CMD 11301	Global Energy Scenario & Energy Security of India (S) FME: 2-0-0 ; ESE: 1-0-0	3-0-0	6
7	CSC-12301	Computer Programming (S)	3-0-0	6
8	ACC 12201	Chemistry (Practical)	0-0-3/2	1.5
9	EIC 12201	Electronics Engineering (Practical)	0-0-3/2	1.5
10	SWC-12701	Counseling / Special/ Co-Curricular Activities	0-0-0	(3)
Total			19-7-3	48 + (3)

II-Semester B-Tech (Common- B Group)*L: Lecture; T: Tutorial; P: Practical*

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	AMC 12101	Mathematics-II	3-1-0	7
2.	APC 12101	Physics	3-1-0	7
3.	MMC 12101	Engineering Graphics	1-3-0	5
4.	EEC 12101	Electrical Technology	3-1-0	7
5	MMC 12103	Engineering Mechanics	3-1-0	7
6.	GLD/CMD 12301	Earth System Science (S) AGL: 2-0-0 ; ESE: 1-0-0	3-0-0	6
7	HSC-12301	Value Education Human Rights and Legislative (S)	3-0-0	6
8	APC 12201	Physics (Practical)	0-0-3/2	1.5
9	EEC 12201	Electrical Technology (Practical)	0-0-3/2	1.5
10	SWC-12701	Counseling / Special/ Co-Curricular Activities	0-0-0	(3)
Total			19-7-3	48 + (3)

THIRD SEMESTER

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	ESC 13101	Environmental Chemistry	4-1-0	9
2.	ESC 13102	Environmental Biology and Ecology	4-1-0	9
3.	MMR 13101	Mechanical Engineering -1	3-1-0	7
4.	ESC 13103	Applied Thermodynamics	3-1-0	7
5.	AMCP 13101	Methods of Applied Mathematics I	4-1-0	9
Practicals/Etc.				
1	ESC 13201	Environmental Chemistry	0-0-2	2
2	ESC 13202	Environmental Biology and Ecology	0-0-2	2
3	ESC 13203	Applied Thermodynamics	0-0-2/2	1
Total			18-5-5	46

FOURTH SEMESTER

S. No.	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	ESC141 01	Environmental Microbiology	3-1-0	7
2.	ESC141 02	Fluid Mechanics and Hydraulics	3-1-0	7
3.	ESC 141 03	Geology for Environmental Engineering	4-1-0	9
4.	ESC 141 04	Remote Sensing and GIS	3-1-0	7
5.	AMCP 141 01	Numerical and Statistical Methods	4-0-0	8
Practicals / Etc.				
1	ESC142 01	Environmental Microbiology	0-0-2	2
2	ESC142 02	Fluid Mechanics and Hydraulics	0-0-2	2
3	ESC 142 03	Geology for Environmental Engineering	0-0-2	2
4	AMCP 14201	Numerical and Statistical Methods	0-0-3	3
5	ESC 146 01	Industry and Environment	0-0-0	(1)
6	ESC 146 02	Land Surveying and Mapping	0-0-0	(4)
7	ESC 146 03	Industrial Visit/Report	0-0-0	(1)
8.	ESC 145 01	Composite Viva -Voce	0-0-0	(4)
9.	SWC 147 01	Co-Curricular Activity	0-0-0	(0)
Total			17-4-9	57

Note: Industrial visits conducted in III and IV Semesters will be credited together in IV Semester only.

FIFTH SEMESTER

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1	ESC 15101	Air Pollution	3-1-0	7
2	ESC 15102	Water Resources Planning and Management	4-1-0	9
3	ESC 15103	Land Management: Principles and Design	3-1-0	7
4	ESC 15104	Soil Mechanics for Environmental Engineering	3-0-0	6
5	ACC 151 04	Instrumental Methods for Environmental Analysis	3-1-0	7
Practicals/Etc.				
1	ESC 152 01	Air Pollution	0-0-2	2
2	ESC 152 04	Soil Mechanics for Environmental Engineering	0-0-2	2
3	ACC 152 04	Instrumental Methods for Environmental Analysis	0-0-2/2	1
4	ESC 156 01	Vocational Training *	0-0-0	(5)
Total			16-4-5	46

* Vocational training taken at the end of IVth Semester is credited in Vth Semester.

SIXTH SEMESTER

S. No.	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1	ESC 16101	Municipal Wastewater Engineering	3-1-0	7
2	ESC 16102	Air Pollution Control	3-1-0	7
3	ESC 16103	Solid Waste Management	3-1-0	7
4	ESC 16104	Environmental Policy and Legislation	3-1-0	7
5.	ESC 16105	Water Quality and Treatment	3-1-0	7
Practicals/Etc.				
1	ESC 16201	Municipal Wastewater Engineering	0-0-2	2
2	ESC 16203	Solid Waste Management	0-0-2	2
3	ESC 16205	Water Quality and Treatment	0-0-2	2
4	MSC 16351	Managerial Economics	0-0-0	(4)
5	ESC 16105	Seminar- Paper and Presentation	0-0-0	(2)
6	ESC 16401	Industrial Visit/Report	0-0-0	(1)
7.	ESC 165 01	Composite Viva -Voce	0-0-0	(4)
8.	SWC 167 01	Co-Curricular Activity	0-0-0	(0)
Total			15-5-6	52

Note: Industrial visits conducted in V and VI Semesters will be credited together in VI Semester only.

SEVENTH SEMESTER

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	ESC 17101	Environmental Impact Assessment	3-1-0	7
2.	ESC 17102	Industrial Wastewater Treatment	3-1-0	7
3.	ESC 17103	Design of Environmental Systems	3-1-0	7
4.	ESC 17104	Noise: Fundamentals and Control	3-1-0	7
5. Elective Papers		(any one)	3-0-0	6
	ESE 17105	<i>Environmental Toxicology & Health</i>		
	ESE 17106	<i>Hazardous and Biomedical Waste Management</i>		
	ESE 17107	<i>Occupational Health and Safety</i>		
	ESE 17108	<i>Environmental Economics</i>		
Practicals/Etc.				
1	ESC 17201	Environmental Impact Assessment	0-0-2/2	1
2	ESC 17202	Industrial Wastewater Treatment	0-0-2/2	1
3	ESC 17204	Noise: Fundamentals and Control	0-0-2/2	1
4	ESC 17402	Environmental Leadership Projects	0-0-6	6
5	HSS 17345	Social and Ethical Issues in Engineering	0-0-0	(2)
6	ESC 17401	Seminar: Paper and Presentation	0-0-0	(2)
7	ESC 176 01	Vocational Training *	0-0-0	(5)
Total			15-4-9	52

* Vocational training taken at the end of VIth Semester is credited in VIIth Semester.

EIGHTH SEMESTER

S. No	Subject Code	Name of the Course	L T P	Credits
Theory Papers				
1.	ESC 18101	Environmental Auditing	3-1-0	7
2.	ESC 18102	Environmental Modeling	3-1-0	7
3.	ESC 18103	Risk Assessment and Disaster Management	3-1-0	7
4.	ESC 18104	Industrial Environmental Issues: Case Studies	3-1-0	7
5. Elective Papers		(any one)	3-0-0	6
	ESE 18105	<i>Energy and Environment</i>		
	ESE 18106	<i>Environmental Geotechnology</i>		
	ESE 18107	<i>Environmental Biotechnology</i>		
	ESE 18108	<i>Human Systems Engineering</i>		
Practicals/Etc.				
1	ESC 18801	Design Project	0-0-6	6
2	ESC 18105	Rehabilitation and Resettlement Issues	0-0-0	(2)
3	ESC 18401	Seminar: Paper and Presentation	0-0-0	(3)
4	ESC 185 01	Composite Viva –Voce	0-0-0	(4)
5	SWC 187 01	Co-Curricular Activity	0-0-0	(0)
Total			15-4-6	49

