

Department of Environmental Science and Engineering
Indian Institute of Technology (Indian School of Mines) Dhanbad

Course Structure for Ph. D. in Environmental Science and Engineering
(Introduced Year 2020-21)

First Semester (Monsoon)

Sl. No.	Designation	Course Code	Subject Name	L-T-P	Credit
1.	DC-1	ESC 700	Research Methodology	3-0-0	9
2.	DC-2	ESC 503	MATLAB Programming for Numerical Computation	3-0-0	9
3.	DC-3	ESC 502	Water Supply and Treatment	3-0-0	9
4.	DC-4	ESC 504	Air and Noise Pollution	3-0-0	9
5.	IC	HSI-500	Research and Technical Communication	3-0-0	S/X

Second Semester (Winter)

Sl. No.	Designation	Course Code	Subject Name	L-T-P	Credit
1	DE-1	Any one from Table 1 A		3-0-0	9
2.	DE-2	Any one from Table 1 B		3-0-0	9
3.	DE-3/OE-1	Any one from Table 1 C or Table 2 A		3-0-0	9
4.	DE-4/OE-2	Any one from Table 1 D or Table 2 B		3-0-0	9
** Students with B. Tech degree or M. Tech in non-relevant field require two additional DC courses.					

Table 1

2nd Semester (Winter)	Departmental Elective		
Course Code	Subject Name	L-T-P	Credit
Table 1 A			
ESC 506	Environmental Laws and Impact Assessment	3-0-0	9
ESD 503	Environmental Modelling	3-0-0	9
ESD 504	Green Engineering Concepts and Life Cycle Analysis	3-0-0	9
Table 1 B			
ESC 507	Municipal Solid Waste Management	3-0-0	9
ESD 501	Environmental Geology and Resource Management	3-0-0	9
ESD 502	Environmental Biotechnology	3-0-0	9
Table 1 C			
ESD 505	Advanced Water and Wastewater Treatment	3-0-0	9
ESD 506	Biomedical and Hazardous Waste Management	3-0-0	9
ESD 507	Environmental Biogeochemistry	3-0-0	9
Table 1 D			
ESD 508	Social Impact Assessment and R&R	3-0-0	9
ESD 509	Air and Noise Pollution Control	3-0-0	9
ESD 510	Soil Pollution and Restoration	3-0-0	9

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Table 2

2nd Semester (Winter)	Open Elective		
Course Code	Subject Name	L-T-P	Credit
Table 2 A			
ESO 501	Environmental Management System and Auditing	3-0-0	9
ESO 502	Environmental Aspects of Industries	3-0-0	9
ESO 503	Instrumental Techniques in Environmental Analysis	3-0-0	9
Table 2 B			
ESO 504	Environmental Remote Sensing & GIS	3-0-0	9
ESO 505	Climate Change and Modelling	3-0-0	9
ESO 506	Environmental Geotechnology	3-0-0	9

Third to Eighth Semester

3rd Semester

Sl. No.	Course code	Course Name	L-T-P	Credit	Course Type
1	ESC599	Thesis	0-0-0	36	Audit

4th Semester

Sl. No.	Course code	Course Name	L-T-P	Credit	Course Type
1	ESC599	Thesis	0-0-0	36	Audit

5th Semester

Sl. No.	Course code	Course Name	L-T-P	Credit	Course Type
1	ESC599	Thesis	0-0-0	36	Audit

6th Semester

Sl. No.	Course code	Course Name	L-T-P	Credit	Course Type
1	ESC599	Thesis	0-0-0	36	Audit

7th Semester

Sl. No.	Course code	Course Name	L-T-P	Credit	Course Type
1	ESC599	Thesis	0-0-0	36	Audit

8th Semester

Sl. No.	Course code	Course Name	L-T-P	Credit	Course Type
1	ESC599	Thesis	0-0-0	36	Audit

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1.	DC-1	ESC 700	Research Methodology	3-0-0	9
2.	DC-2	ESC 503	MATLAB Programming for Numerical Computation	3-0-0	9
3.	DC-3	ESC 501	Ecology and Environmental Microbiology	3-0-0	9
4.	DC-4	ESC 502	Water Supply and Treatment	3-0-0	9
5.	IC	HSI-500	Research and Technical Communication	3-0-0	S/X

Second Semester (Winter)

Sl. No.	Designation	Course Code	Subject Name	L-T-P	Credit
1	DE-1	Any one from Table 1 A		3-0-0	9
2.	DE-2	Any one from Table 1 B		3-0-0	9
3.	DE-3/OE-1	Any one from Table 1 C or Table 2 A		3-0-0	9
4.	DE-4/OE-2	Any one from Table 1 D or Table 2 B		3-0-0	9
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Table 2

2nd Semester (Winter)	Open Elective		
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Table 2 A			
ESO 501	Environmental Management System and Auditing	3-0-0	9
ESO 502	Environmental Aspects of Industries	3-0-0	9
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Third to Eighth Semester

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Sl. No.	Course code	Course Name	L-T-P	Credit	Course Type
1	ESC599	Thesis	0-0-0	36	Audit

8th Semester

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