

Environment Sustainability and Climate Science Related Courses at IIT (BHU) Varanasi



Environmental sustainability and climate science courses are interdisciplinary programs designed to address the pressing global challenges of environmental degradation and climate change. These courses offer students a comprehensive understanding of the complex interactions between human activities and the natural environment, while exploring strategies to mitigate environmental impacts and promote sustainable practices. Table 1 illustrates the selected courses in the domain of Environment Sustainability and Climate Science.

Subject code	Name	Credits
EP-511	Atmospheric Physics and Environmental Sciences	9
CHI-331	Environmental Chemistry	3
CE-241	Environmental Engineering - I	10
CE-441	Environmental Engineering - II	8
CE-663	Environmental Geology	9
MN-543	Environmental Hazards & Disaster Management in Mines	9
CHI-511	Environmental Impact and Risk Assessment Technology	9
CE-586	Environmental Impact Assessment and Auditing	9
MN-482	Environmental Management in coal preparation plant	9
MN-342	Environmental Management in Surface Mines	9
MN-541	Environmental Planning and Management in Surface Mines	9
CE-441	Environmental Pollution and Control	9
CE-573	Environmental Sanitation	9
AR-208	Environmental Science-II	8
CE-570	Environmental System Engineering I	9
CE-584	Environmental System Management	9
AR-109	Introduction to Environmental Studies	9
MN-545	Mine Environmental Planning	9
CE-637	Remote Sensing for Water Resources and Environmental Management	9
AR-409	Sustainable Architecture	8

IIT (BHU) also offers M.Tech. in Environmental program in the Dept. of civil engineering[1]. This program focuses on advanced studies in environmental engineering principles, practices, and technologies, with the goal of producing skilled professionals capable of addressing complex environmental challenges. The environmental engineering laboratory has almost all state of art equipments such as Spectrophotometer, Atomic absorption spectrometer, total carbon analyser, US-VIS spectrophotometer, gas chromatograph, flue gas analyser, stack monitoring kit, phase contrast microscope, flame photometer, laminar hood, COD digester, overall it is a mobile Lab.

Course Structure: M.Tech. for Civil Engineering (2018-2019)						
Cat.	Deviation	Programme Components	MST	Recommended (V Years)		
				Min	Max	
DC/ MC	0	Department/Programme Core (Includes Stream Courses)	36			
DE/ BE	0	Department/Programme Elective (Includes Stream Courses)	54			
DP	0	Practical Component	6			
HU/LM	0	Humanities/Language & Management Course	9			
DT	0	Thesis	121			
		Total	226			
		All Semester Total (Hons.)				
L: Lecture hours; T: Tutorial hours; P: Laboratory/ Practical hours; C: Credits						
Stream Electives in Civil Engineering						
Stream	Stream Code	Stream Title				
ENE	CEX4X	Environmental Engineering				
Course Structure: M.Tech. for Civil Engineering (2018-2019)						
PG-CRC Code	Course Code	Course Name	L-T-P		Credits	
Civil Engineering : 2-Year M.Tech. I-Semester						
DC.CE541.17	CE570	Environmental System Engineering I	3	0	0	9
DC.CE542.17	CE571	Design of Water Supply & Waste Water Collection System	3	0	0	9
DE - 1	DE - 1	Department Elective (DE) - 1	3	0	0	9
DE - 2	DE - 2	Department Elective (DE) - 2	3	0	0	9
DE - 3	DE - 3	Department Elective (DE) - 3	3	0	0	9
DP.CE540.17	CE572	Laboratory Environmental Engineering - 1	0	0	3	3
HU/LM	HU/LM	Humanities/Language & Management Course**	3	0	0	9
		Total	18	0	3	57
** Course to be selected from the list as declared by Academic office.						
Department Elective - DE-1, DE-2 & DE-3						
Department Elective - DE-1, DE-2 & DE-3	CE573	Environmental Sanitation	3	0	0	9
	CE513	Hydraulic Structures	3	0	0	9
	CE637	Remote Sensing for Water Resources and Environmental Management	3	0	0	9
	MA551	Mathematics	3	0	0	9
	CE514	River Pollution and Control	3	0	0	9
	CE574	Industrial Water and Waste Water Treatment	3	0	0	9
	MA552	Advanced Numerical Methods	3	0	0	9

Civil Engineering : 2-Year M.Tech. II-Semester						
DC.CE641.17	CE580	Environmental System Engineering II	3	0	0	9
DC.CE642.17	CE581	Design of Water Supply and Wastewater Treatment System	3	0	0	9
DE - 4	DE - 4	Department Elective (DE) - 4	3	0	0	9
DE - 5	DE - 5	Department Elective (DE) - 5	3	0	0	9
DE - 6	DE - 6	Department Elective (DE) - 6	3	0	0	9
DP.CE640.17	CE582	Laboratory Environmental Engineering - 2	0	0	3	3
DT.CE649.17	CE595	Thesis	0	0	11	11
		Total	15	0	14	59
Department Elective - DE-4, DE-5 & DE-6						
Department Elective - DE-4, DE-5 & DE-6	CE583	Air Pollution and Control	3	0	0	9
	CE584	Environmental System Management	3	0	0	9
	CE585	Solid Waste Engineering and Management	3	0	0	9
	CE586	Environmental Impact Assessment and Auditing	3	0	0	9
	CE587	Automobile Pollution and Control	3	0	0	9
	CE527	Computational Technique in Water Resource Engineering	3	0	0	9
	CE565	Optimization Methods	3	0	0	9
	CE526	Ground Water Hydrology	3	0	0	9
Civil Engineering : 2-Year M.Tech. III-Semester						
DT.CE695.17	CE695	Thesis	0	0	55	55
		Total	0	0	55	55
Civil Engineering : 2-Year M.Tech. IV-Semester						
DT.CE696.17	CE696	Thesis	0	0	55	55
		Total	0	0	55	55
L: Lecture hours; T: Tutorial hours; P: Laboratory/ Practical hours; C: Credits						

Ref [1]: <https://iitbhu.ac.in/dept/civ/courses>, access July 2024