

EVALUATION SCHEME

OF

M. TECH

ENVIRONMENTAL ENGINEERING

OF

I YEAR

DEPARTMENT OF CIVIL ENGINEERING

INTEGRAL UNIVERSITY

LUCKNOW

SYLLABUS AND EVALUATION SCHEME

Branch: M. Tech Environmental Engineering Program

(w.e.f. Batch 2021-22)

Year – I, Semester – I

S. No.	Course Category	Code No	Name of Subject	Periods				Evaluation Scheme				Subject Total	Attributes							United Nations Sustainable Development Goals (SDGs)
				L	T	P	C	Continuous Assessment (CA)			ESE		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
								CT	TA	Total										
1	DC	CE521	Statistics for Environmental Engineers	3	1	-	4	40	20	60	40	100	✓	✓	✓		✓	✓		SDGs 6
2	DC	CE522	Environmental Chemistry	3	1	-	4	40	20	60	40	100	✓	✓	✓		✓	✓		SDGs 6
3	DC	CE523	Environmental Microbiology	3	1	-	4	40	20	60	40	100	✓				✓	✓		SDGs 6
4	DE	CE524	Transport of Water and Wastewater	3	1	-	4	40	20	60	40	100	✓	✓			✓			SDGs 6
	DE	CE525	Industrial Wastewater Management										✓	✓	✓		✓			SDGs 6
	DE	CE526	Air Pollution Control										✓	✓			✓			SDGs 6
	DE	CE534	Unit Operations and Processes in Water and Wastewater Treatment										✓	✓	✓		✓			SDGs 13
PRACTICAL / DRAWING / DESIGN																				
5	DC	CE530	Laboratory and Field Testing	-	-	3	2	-	-	60	40	100	✓		✓		✓	✓		SDGs 6
Total				12	4	3	18					500								

L – Lecture; T – Tutorial; P – Practical; C – Credits; CT – Class Tests; TA – Teacher Assessment

Continuous Assessment (CA) = Class Tests + Teacher Assessment

Subject Total = Continuous Assessment (CA) + End Semester Examination (ESE)

DC – Departmental Core

DE – Departmental Elective

SYLLABUS AND EVALUATION SCHEME

Branch: M. Tech Environmental Engineering Program

(w.e.f. Batch 2021-22)

Year – I, Semester – II

S. No.	Course Category	Code No	Name of Subject	Periods				Evaluation Scheme			Subject Total	Attributes							United Nations Sustainable Development Goals (SDGs)	
				L	T	P	C	Continuous Assessment (CA)				ESE	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value		Professional Ethics
								CT	TA	Total										
1	DC	CE531	Solid Waste Management	3	1	-	4	40	20	60	40	100	✓	✓	✓		✓	✓		SDGs 6
2	DC	CE532	Design and Operations of Water and Wastewater Treatment Plants	3	1	-	4	40	20	60	40	100	✓	✓	✓		✓		✓	SDGs 6
3	DC	CE533	Environmental Impact Assessment	3	1	-	4	40	20	60	40	100	✓	✓	✓		✓	✓		SDGs 13
4	DC	CE552	Research Methodology	3	1	-	4	40	20	60	40	100			✓				✓	SDGs 4
PRACTICAL / DRAWING / DESIGN																				
4	DC	CE535	Seminar	-	-	3	2	-	-	60	40	100	✓	✓	✓		✓			SDGs 4
Total				12	4	3	18					500								

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INTEGRAL UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

PROGRAMME: M. TECH. ENVIRONMENTAL ENGINEERING

PROGRAM SPECIFIC OUTCOMES (PSO):

PSO-1: Facilitate and develop knowledge based on water/waste water, air and solid waste management and research based on Environmental Engineering.

PSO-2: Able to become professionals such as environmental engineer, solid waste manger, waste water expert etc.

PROGRAM EDUCATIONAL OBJECTIVES (PEO):

PEO-1: The student will become effective Environmental engineer by facilitating appropriate theoretical concepts in dealing with practical based real-life problems associated with Environmental Engineering and develop the necessary tools for the same.

PEO-2: Students will provide solution in Environmental Engineering problems in account for economical, societal and ethical by applying Environmental engineering knowledge.

PEO-3: Students will deliver effective lifelong learning and maintain the technical and professional growth.

PROGRAM OUTCOMES (PO):

PO1- Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2- 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.

PO3- 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.

PO4- 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.

PO5- 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.

PO6- 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.

PO7- 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.

PO8- Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9- Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10- 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.

PO11- 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.

PO12- 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.