

DEPARTMENT OF CIVIL ENGINEERING

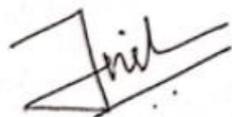
M.TECH
in
**ENVIRONMENTAL SCIENCE AND
ENGINEERING**



M. TECH DEGREE PROGRAMME
in
ENVIRONMENTAL SCIENCE AND ENGINEERING

CURRICULUM & SYLLABI

Items	Board of Studies (BoS)	Academic Council (AC)
Date of Approval	12/08/2024	30/08/2024



Head of the Department
Chairman, Board of Studies



Principal
Chairman, Academic Council

CURRICULUM & SYLLABI
FOR
M. TECH DEGREE PROGRAMME
IN
ENVIRONMENTAL SCIENCE AND ENGINEERING

2022 SCHEME (AUTONOMOUS)



MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Autonomous Institution Affiliated to APJ Abdul Kalam Technological University)
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MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

Vision and Mission of the Institution

Vision

To be an Institution moulding globally competent professionals as epitomes of Noble Values.

Mission

To transform the Youth as technically competent, ethically sound and socially committed professionals, by providing a vibrant learning ambience for the welfare of humanity.

DEPARTMENT OF CIVIL ENGINEERING

Vision and Mission of the Department

Vision

To be a Centre of Excellence in Civil Engineering education with a global perspective, creating ethically strong engineers for the service of society.

Mission

To provide Engineering Education which can create exemplary professional Civil Engineers of high ethics with strong conceptual foundation coupled with practical insight, to serve the industry and community.

**DEPARTMENT OF CIVIL ENGINEERING****M.Tech. Programme in****Environmental Science and Engineering***For the students admitted from 2024-2025***Scheduling of Courses****i) Knowledge Segments and Credits**

Every course of M.Tech Programme is placed in one of the nine course types as listed in Table 1. No semester shall have more than six lecture-based courses and two laboratory courses, and/or project courses in the curriculum.

Table 1: Credit Distribution and Knowledge Domains

Sl. No.	Category	Course Type	Number of Courses	Total Credits
1	Discipline Core Course	DCC	2	6
2	Program Core Course	PCC	3	9
3	Laboratory Course	LBC	2	2
4	Program Elective Course	PEC	4	12
5	Mandatory Credit Course (Research Methodology & IPR)	RM	1	2
6	Industry/ Interdisciplinary Elective	IEC	1	3
7	Internship	PR	1	3
8	Mini Project		1	2
9	Project		2	27
10	MOOC	MOOC	1	2
11	Audit Course	AC	1	-
Total Mandatory Credits				68

ii) Semester-wise Credit Distribution

Semester	I	II	III	IV	Total Credits
Credits for Courses	18	18	16	16	68



Semester I							
Slot	Course Type	Course Number	Course Name	L	T	P	Credit
A	DCC	24MA060F	Probability and Statistics	3	0	0	3
B	PCC	24CE361A	Environmental Chemistry and Microbiology	3	0	0	3
C	PCC	24CE361B	Physico-Chemical Water and Wastewater Treatment	3	0	0	3
D	PEC	24CE362X	Program Elective 1	3	0	0	3
E	PEC	24CE362X	Program Elective 2	3	0	0	3
S	RM	22MC061A	Research Methodology & IPR	2	0	0	2
T	LBC	24CE369A	Environmental Monitoring Laboratory I	0	0	2	1
Total				17	0	2	18

Semester II							
Slot	Course Type	Course Number	Course Name	L	T	P	Credit
A	DCC	24CE360A	Solid and Hazardous Waste Management	3	0	0	3
B	PCC	24CE361C	Biological Wastewater Treatment	3	0	0	3
C	PEC	24CE362X	Program Elective 3	3	0	0	3
D	PEC	24CE362X	Program Elective 4	3	0	0	3
E	IEC	24CE36XX	Industry based/ Interdisciplinary Elective	3	0	0	3
S	PR	24CE367A	Mini project	0	0	4	2
T	LBC	24CE369B	Environmental Monitoring Laboratory II	0	0	2	1
Total				15	0	6	18



Semester III							
Slot	Course Type	Course Number	Course Name	L	T	P	Credit
A	MOOC	-	MOOC	-	-	-	2
B	AC	2XAC071X	Audit Course	3	0	0	-
C	PR	24CE377A	Internship	-	-	-	3
D	PR	24CE378A	Dissertation Phase I	0	0	17	11
			Research Project Phase I				
Total				3	0	17	16

Semester IV							
Slot	Course Type	Course Number	Course Name	L	T	P	Credit
D	PR	24CE378B	Dissertation Phase II	0	0	24	16
			Research Project Phase II				
Total				0	0	24	16



LIST OF PROGRAM ELECTIVE COURSES

Category Code	Course Number	Course Name	L	T	P	Credit
PEC	24CE362A	Environmental Impact Assessment and Management	3	0	0	3
	24CE362B	GIS and Remote Sensing for Environmental Applications	3	0	0	3
	24CE362C	Instrumental and Analytical Techniques in Environmental Engineering	3	0	0	3
	24CE362D	Geo-Environmental Engineering and Technology	3	0	0	3
	24CE362E	Environmental Health, Hygiene and Safety	3	0	0	3
	24CE362F	Mitigation and Adaptation Strategies in Climate Change	3	0	0	3
	24CE362G	Environmental System Modelling	3	0	0	3
	24CE362H	Ecological Engineering	3	0	0	3
	24CE362I	Air Pollution and Control Technologies	3	0	0	3
	24CE362J	Advanced Wastewater Treatment Technologies	3	0	0	3
	24CE362K	Environmental Biotechnology and Bioremediation	3	0	0	3
	24CE362L	Environmental Hydrology	3	0	0	3
	24CE362M	Contaminant Transportation and Remediation	3	0	0	3
	24CE362N	Environmental Toxicology	3	0	0	3
	24CE362O	Applications of AI and ML in Environmental Engineering	3	0	0	3



INTERDISCIPLINARY ELECTIVE COURSE

Slot	Category Code	Course Number	Course Name	L	T	P	Credit
E	IEC	24CE365A	Sustainable Technologies and Cleaner Production	3	0	0	3

LIST OF INDUSTRY-BASED ELECTIVE COURSES

Slot	Category Code	Course Number	Course Name	L	T	P	Credit
E	IEC	24CE366A	Industrial Effluent Management	3	0	0	3
		24CE366B	Circular Economy	3	0	0	3
		24CE366C	Environmental Nanotechnology	3	0	0	3