

MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)
Faculty of Engineering and Technology

Two – Year (Regular) M Tech: Environmental Science and Engineering

Eligibility for Admission: The Master of Technology (Environmental Science and Engineering) is an inter-disciplinary post-graduate programme. A candidate for being eligible for admission to the Master of Technology in Environmental Science and Engineering in the faculty of engineering and technology should have passed B.Sc. (Engg.)/ B.Tech/ B.E. or any other equivalent engineering degree in the relevant discipline / branch or M.Sc. degree (Chemistry / Biochemistry / Biotechnology / Physics / Agriculture / Forestry / Mining / Geography) from any recognized Indian or foreign University.

A candidate should have at least 55% marks or equivalent CGPA in the qualifying examination (50% marks or equivalent CGPA for Scheduled Caste/Scheduled Tribes Candidates) on the basis of which the admission is being sought.

Overview of the Programme: The normal duration of programme shall be four Semesters for regular students. However, in exceptional circumstances, only dissertation work may be extended and has to be completed within five years from the date of enrolment for this programme. This extension requires the prior approval of the Vice-Chancellor of the University.

The complete programme comprises of 12 theory courses (08 Core and 04 elective) and 02 Lab courses followed by a seminar and the research/ project work in the form of a dissertation. Student has to obtain at least 40 % marks to pass the examination (both internal and external examination separately) for all the courses specified in the scheme of the programme. The degree will be awarded on the basis of cumulative marks obtained in all the four semesters and the division obtained will be as under:

Marks Obtained	Division/Result
70% and above	1 st Division with Honours
60% and above	1 st Division
50% to 59%	2 nd Division
40% to 49%	Pass Class

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First Semester

Course Code	Course Title	Contact Hours per week		Credit Hours	Internal Assessment/Evaluation		External Examination /Viva-voce	Total Marks
		L	P		Assignments /Lab Record	Teacher's Evaluation		
ESE – 611	Environmental Chemistry and Microbiology	4	-	4	30	10	60	100
ESE – 613	Water Treatment Processes	4	-	4	30	10	60	100
ESE – 615	Ecology	4	-	4	30	10	60	100
ESE – 711/713/715	Elective – I	3	-	3	20	10	45	75
ESE – 721/723/725	Elective – II	3	-	3	20	10	45	75
ESE – 617	Environmental Engg. Lab-I	-	2	2	15	10	25	50
Total Semester Credits = 20					Total Semester Marks = 500			

Second Semester

Course Code	Course Title	Contact Hours per week		Credit Hours	Internal Assessment/Evaluation		External Examination /Viva-voce	Total Marks
		L	P		Assignments /Lab Record	Teacher's Evaluation		
ESE – 612	Air and Noise Pollution	4	-	4	30	10	60	100
ESE – 614	Wastewater Treatment Processes	4	-	4	30	10	60	100
ESE – 616	Solid and Hazardous Waste Management	4	-	4	30	10	60	100
ESE – 712/714/716	Elective – III	3	-	3	20	10	45	75
ESE – 722/724/726	Elective – IV	3	-	3	20	10	45	75
ESE-618	Environmental Engg. Lab-II	-	2	2	15	10	25	50
Total Semester Credits = 20					Total Semester Marks = 500			

Third Semester

Course Code	Course Title	Contact Hours per week		Credit Hours	Internal Assessment/Evaluation		External Examination /Viva-voce	Total Marks
		L	P		Assignments /Report	Teacher's Evaluation		
ESE – 621	Industrial Waste Management	4	-	4	30	10	60	100
ESE – 623	Environmental Impact Assessment	4	-	4	30	10	60	100
ESE – 625	Seminar	2	-	2	25	25	-	50
Total Semester Credits = 10					Total Semester Marks = 250			

Fourth Semester

Course Code	Course Title	Contact Hours per week		Credit Hours	Internal Assessment/Evaluation		External Examination /Viva-voce	Total Marks
		L	P		Report	Supervisor (s) Evaluation		
ESE – 628	Dissertation	-	16	16	75	75	250	400
Total Semester Credits = 16					Total Semester Marks = 400			

LIST OF ELECTIVES

ELECTIVE – I

1. ESE – 711 Advance Water Supply and Wastewater Management
2. ESE – 713 Bioremediation: Principles and Applications
3. ESE – 715 Water Quality Management

ELECTIVE – III

1. ESE – 721 Environmental Issues, Protection and Laws
2. ESE – 723 Air Quality Modelling
3. ESE – 725 Surface Water Quality Modeling and Control

ELECTIVE – II

1. ESE – 712 Environmental Planning and Management
2. ESE – 714 Life Cycle Analysis and Design for Environment
3. ESE – 716 Advanced Computational Methods and Optimization

ELECTIVE – IV

1. ESE – 722 Renewable Energy Sources
2. ESE – 724 Environmental Risk Assessment
3. ESE – 726 Geographic Information System (GIS) in Environmental Engineering

Internal Assessment/Examination: The internal evaluation for all theory courses (40% of the total marks) will be based on the evaluation of **three assignments** provided during the semester and assessment of the teacher concerned. Similarly, the internal evaluation for all Lab courses (50% of the total marks) will be based on the evaluation of lab record and assessment of the teacher concerned.

External Examination/Viva -voce: For all the theory courses, there will be **08 (Eight)** questions to be set by the external paper setter (nominated /approved by the competent authority) out of which the candidate will have to attempt only **05 (Five)** questions all carrying equal marks. Duration of each external examination will be **three hours**. Similarly, the external evaluation for all Lab courses (50% of the total marks) will be based on the evaluation/viva-voce conducted by an external examiner (from the relevant field) nominated/approved by the competent authority.

Evaluation of Seminar: The seminar topic should belong to the core area of specialization. Senior faculty will supervise the students in selecting and preparation of the same. The student will submit two copies of seminar report and shall make oral presentation as per time schedule decided by the faculty concerned. Internal Evaluation will be made on the basis of report, presentation and the discussion during the presentation.

Submission and Evaluation of Dissertation:

- a) A dissertation supervisor (s) having at least post- graduate qualification, from industry/research organization shall be assigned to the student approved by the competent authority. *In no case, the candidate can have more than two dissertation supervisors.*
- b) Dissertation work shall comprise of literature survey, problem formulation, methodology used, S/W, H/W tools used, Results and discussion followed by the conclusions & further scope of work in that area. Industry oriented projects may be encouraged for the purpose.
- c) The submission of dissertation shall be allowed only after ensuring that the research work carried out by the candidate has attained the level of satisfaction of the 'Dissertation Supervisor (s)' and proof of communication/acceptance of the research paper (if any, and certified in the report) in the relevant refereed journal/ conference.
- d) The final dissertation external examination in 4th semester shall be taken by a panel of examiners comprising of concerned Supervisor (s), one external examiner (from the relevant field) nominated/approved by the competent authority. Hard copies of dissertation, one for each supervisor (s), examiner and the university/ department, are required to be submitted by the student before the final dissertation external examination. The candidate shall appear before the examining committee for oral examination and presentation on the scheduled date.