MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)
Faculty of Engineering and Technology

Three – Year (Part-time) M Tech: Metallurgical & Materials Engineering

Eligibility for Admission: A candidate for being eligible for admission to the Master of Technology in *Metallurgical & Materials Engineering* in the faculty of engineering and technology should have passed B.Sc. (Engg.)/ B.Tech/ B.E. or any other equivalent degree in the relevant discipline / branch 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 Six Semesters for part-time students. A part time candidate shall mean a person employed in any government/ semi-government/ private organisation. The duration of the programme is extendable upto five years. However, in exceptional circumstances one-year extension may be granted with approval of the Vice-Chancellor of the University.

The complete programme comprises of 13 theory courses (09 Core and 04 elective) and 02 Lab courses followed by the dissertation in two phases. 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 six semesters and the division obtained will be as under:

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

MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)
Scheme of Three – Year (Part-time) M Tech: Metallurgical & Materials Engineering

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		
MSE – 611	Materials Characterization	4	-	4	30	10	60	100
MSE – 613	Phase Transformation of Materials	4	-	4	30	10	60	100
MSE – 711/713/715	Elective – I	3	-	3	20	10	45	75
MSE – 617	Physical Metallurgy Lab	-	2	2	15	10	25	50
Total Semester Credits = 13					**Total Semester Marks = 325**			

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		
MSE – 612	Advanced Mechanical Behavior of Materials	4	-	4	30	10	60	100
MSE – 614	Advanced Materials Processing	4	-	4	30	10	60	100
MSE – 712/714/716	Elective – II	3	-	3	20	10	45	75
MSE – 618	Mechanical Metallurgy Lab	-	2	2	15	10	25	50
Total Semester Credits = 13					**Total Semester Marks = 325**			

Third 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		
MSE – 615	Composite Materials	4	-	4	30	10	60	100
MSE – 621	Advances in Iron and Steel making	4	-	4	30	10	60	100
MSE – 721/723/725	Elective – III	3	-	3	20	10	45	75
Total Semester Credits = 11					**Total Semester Marks = 275**			

Fourth Semester

Course Code	Course Title	Contact Hours per week		Credit Hours	Internal Assessment/Evaluation		External Examination /Viva-voce	Total Marks
		L	P		Assignments	Teacher's Evaluation		
MSE – 616	Fracture Mechanics and Failure Analysis	4	-	4	30	10	60	100
MSE – 624	Design of Experiments	4	-	4	30	10	60	100
MSE – 722/724/726	Elective – IV	3	-	3	20	10	45	75
Total Semester Credits = 11					**Total Semester Marks = 275**			

Fifth 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/ Committee Evaluation		
MSE – 627	Research Methodology	2	-	2	30	20	-	50
MSE – 629	Dissertation (Phase-I)	-	4	4	50	50	-	100
Total Semester Credits = 06					**Total Semester Marks = 150**			

Sixth Semester

Course Code	Course Title	Contact Hours per week		Credit Hours	Internal Assessment/Evaluation		External Examination /Viva-voce	Total Marks
		L	P		Report	Teacher(s) Evaluation		
MSE – 630	Dissertation (Phase-II)	-	12	12	50	-	250	300
Total Semester Credits = 12					**Total Semester Marks =300**			

LIST OF ELECTIVES

ELECTIVE – I

MSE – 711	Computational Methods for Materials Science
MSE – 713	Advanced Metallurgical Thermodynamics
MSE – 715	Environmental Pollution in Metallurgical Industries

ELECTIVE – II

MSE – 712	Electroceramics
MSE – 714	Advanced Ceramics
MSE – 716	Nano Structured Materials

ELECTIVE – III

MSE – 721	X-Ray & Electron Metallography
MSE – 723	Electronic and Opto-Electronic Materials
MSE – 725	Electro-Magnetic Properties of Materials

ELECTIVE – IV

MSE – 722	Advanced Foundry Technology
MSE – 724	Advanced Welding Technology
MSE – 726	Advances in Corrosion 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 **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.

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 (Phase-I) in 5^{th} semester shall comprise of literature survey, problem formulation, finalization of goals to be achieved, outlines of the methodology to be used for achieving the targeted goals and final decision about S/W, H/W tools to be used for dissertation work in 6^{th} semester. The entire work will be documented in the form of report.

c) Internal assessment of dissertation (Phase-I) in 5^{th} semester will be made by the committee evaluating the report (50% weightage), oral presentation and response of the student in the discussion / presentation (50% weightage). The dissertation supervisor (s) shall be the member (s) of the committee.

d) The submission of dissertation (Phase-II) in 6^{th} semester 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.

e) The final dissertation external examination in 6^{th} 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.