

S.G.B.A.U. Amravati (Teaching / Examination Scheme w.e.f. 2023-24)
Two Year (Full Time) Post Graduate Course in M.E. Mechanical Engineering
(Advanced Manufacturing & Mechanical Systems Design) Choice Based Credit system (CBCS)
Model Curriculum Structure

Programme Outcomes (POs):

After completion of the Programme graduates will be able to

1. Apply the knowledge of science, mathematics and engineering principles for developing problem solving attitude
2. Identify, formulate and solve engineering problems in the domain of mechanical engineering field
3. Use different software tools for design, analysis and synthesis in the domain of mechanical engineering
4. Design and conduct experiments, analyse and interpret data for development of simulation experiments
5. Function as a member of a multidisciplinary team with sense of ethics, integrity and social responsibility

Two Year (Full Time) Post Graduate Course in M.E. Mechanical Engineering (Advanced Manufacturing & Mechanical Systems Design) Choice Based Credit system (CBCS)
Appendix -A

Semester --I																
Sr No	Subject Code	Subject	Teaching Scheme					Examination Scheme								
			Hours /Week			Total Hrs / Week	Credits	Theory					Practical			
			Lecture	Tutorial	P/D			Duration of University Exam (Hrs)	Maximum Marks (University Evaluation)	Maximum Marks (College Assessment)	Total Marks	Minimum Passing Marks	Maximum Marks		Total Marks	Minimum Passing Marks
													Internal	External		
01	1MMD1	Advanced Manufacturing Processes	3	-	-	3	3	3	80	20	100	50	-	-	-	-
02	1MMD2	Computer Aided Design and Engineering	3	-	-	3	3	3	80	20	100	50	-	-	-	-
03	1MMD3	Programme Elective-I	3	-	-	3	3	3	80	20	100	50	-	-	-	-
04	1MMD4	Programme Elective-II	3	-	-	3	3	3	80	20	100	50	-	-	-	-
05	1MMD5	Research Methodology and IPR	2	-	-	2	2	-	-	50	50	25	-	-	-	-
06	1MMD6	Advanced Manufacturing Processes Lab	-	-	4	4	2	-	-	-	-	-	25	25	50	25
07	1MMD7	Computer Aided Design and Engineering Lab	-	-	4	4	2	-	-	-	-	-	25	25	50	25
08	1MMD8	Audit Course – I*	2	-	-	2	0	-	-	-	-	-	-	-	-	-
		TOTAL	16	-	8	24	18	-	-	-	450	-	-	-	100	-
														TOTAL	550	-

1MMD3	Programme Elective-I	(i) Advanced Machine Design (ii) Design for Manufacturing and Assembly (iii) Analysis and Synthesis of Mechanisms
1MMD4	Programme Elective-II	(i) Flexible Manufacturing System (ii) Industrial Robotics (iii) Lean Manufacturing
1MMD8	*Audit course-I	(i) English for Research Paper Writing (ii) Disaster Management (iii) Constitution of India (iv) Stress Management by Yoga v) Sanskrit For Technical Knowledge vi) Value Education vii) Pedagogy Studies viii) Personality Development through life Enhancement skills

* Examination and evaluation for Audit –I & II shall be conducted at the Institute level.

Semester --II																
Sr No	Subject Code	Subject	Teaching Scheme					Examination Scheme								
			Hours /Week			Total Hrs / Week	Credits	Theory					Practical			
			Lecture	Tutorial	P/D			Duration of University Exam (Hrs)	Maximum Marks (University Evaluation)	Maximum Marks (College Assessment)	Total Marks	Minimum Passing Marks	Maximum Marks		Total Marks	Minimum Passing Marks
													Internal	External		
01	2MMD1	Mechatronics in System Design	3	-	-	3	3	3	80	20	100	50	-	-	-	-
02	2MMD2	Experimental Stress Analysis	3	-	-	3	3	3	80	20	100	50	-	-	-	-
03	2MMD3	Programme Elective-III	3	-	-	3	3	3	80	20	100	50	-	-	-	-
04	2MMD4	Programme Elective-IV	3	-	-	3	3	3	80	20	100	50	-	-	-	-
05	2MMD5	Mechatronics in System Design Lab	-	-	4	4	2	-	-	-	-	-	25	25	50	25
06	2MMD6	Experimental Stress Analysis Lab	-	-	4	4	2	-	-	-	-	-	25	25	50	25
07	2MMD7	Seminar	-	-	4	4	2	-	-	--	--	--	50	--	50	25
08	2MMD8	Audit Course – II*	2	-	-	2	0	-	-	-	-	-	-	-	-	-
		TOTAL	14	-	12	26	18	-	-	-	400	-	-	-	150	-
														TOTAL	550	-

2MMD3	Programme Elective-III	(i) Optimization Methods in Engineering Design (ii) Advanced Materials Technology (iii) Advanced Mechanical Vibrations
2MMD4	Programme Elective-IV	(i) Industrial Tribology (ii) Advanced Machine Tool Design (iii) Rapid Prototyping and Tooling
2MMD8	*Audit Course - II	(i) English for Research Paper Writing (ii) Disaster Management (iii) Constitution of India (iv) Stress Management by Yoga v) Sanskrit For Technical Knowledge vi) Value Education vii) Pedagogy Studies viii) Personality Development through life Enhancement skills

* Examination and evaluation for Audit –I & II shall be conducted at the Institute level.

Semester --III																
Sr No	Subject Code	Subject	Teaching Scheme					Examination Scheme								
			Hours /Week			Total Hrs / Week	Credits	Theory					Practical			
			Lecture	Tutorial	P/ D			Duration of University Exam (Hrs)	Maximum Marks (University Evaluation)	Maximum Marks (College Assessment)	Total Marks	Minimum Passing Marks	Maximum Marks		Total Marks	Minimum Passing Marks
													Internal	External		
01	3MMD1	Programme Elective-V	3	-	-	3	3	3	80	20	100	50	-	-	-	-
02	3MMD2	Open Elective	3	-	-	3	3	3	80	20	100	50	-	-	-	-
03	3MMD3	Dissertation Phase-I	-	-	20	20	10	-	-	-	-	-	100	-	100	50
		TOTAL	6	-	20	26	16	-	-	-	200	-		TOTAL	100	50
														TOTAL	300	

3MMD1	Programme Elective-V	(i) Design of Material Handling Equipments (ii) Industry 4.0 and Industrial IoT (iii) Manufacturing Management
3MMD2	Open Elective	(i) Business Analytics (ii)Industrial Safety (iii) Operations Research (iv)Cost Management of Engineering Projects (v) Composite Materials (vi)Waste to Energy

Semester --IV																
Sr No	Subject Code	Subject	Teaching Scheme					Examination Scheme								
			Hours /Week			Total Hrs / Week	Credits	Theory					Practical			
			Lecture	Tutorial	P/ D			Duration of University Exam (Hrs)	Maximum Marks (University Evaluation)	Maximum Marks (College Assessment)	Total Marks	Minimum Passing Marks	Maximum Marks		Total Marks	Minimum Passing Marks
													Internal	External		
01	4MMD1	Dissertation Phase-II	---	---	32	32	16	-----	-----	-----	-----	-----	100	200	300	150
		TOTAL	---	----	32	32	16	-----	-----	-----	-----	-----		TOTAL	300	150

Grand Total Credits (Semester -I,II,III & IV)	68	Grand Total Marks (Semester -I,II,III & IV)	1700	
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Note: Passing Criteria for Subjects / Practicals / Dissertation is including the internal marks

Semester III

Title of the dissertation work to be submitted to the University on or before 15th Sept (for regular examination) and 15th of February (for Supplementary Examination) every year.

Dissertation Phase-I: Seminar on Dissertation work to be delivered at the beginning of Semester III, which covers i) Literature Survey ii) Research Gap Identified and iii) Proposed Research Methodology.

Internal Marks: 50 Marks out of 100 will be assessed by committee members consisting of dissertation guide, Head of Department and subject expert appointed by the principal of the college / Head of University Department. Remaining 50 internal Marks out of 100 will be given by dissertation guide based on performance.

Semester IV

Student shall have to publish / present at least one research paper in referred journal / conference based on dissertation work.

Dissertation Phase-II: Dissertation work to be presented during semester IV.

Internal Marks: 50 Marks out of 100 will be assessed by committee members consisting of dissertation guide, Head of Department and subject expert appointed by the principal of the college / Head of University Department. Remaining 50 internal Marks out of 100 will be given by dissertation guide based on performance.

External Marks: 200 Marks will be assessed through Viva-Voce Examination through external examiner appointed by University.

Note :

(i) Thesis of dissertation work must be submitted to the University on or before 30th April (for Regular Exam) and 30th of November (for Supplementary Exam) every year.

(ii) Thesis of Dissertation work be submitted (with late fee) to the university up to 31st May (for Regular Exam) and 31st December (for Supplementary Exam) every year.

(iii) Students should fill the examination form in the beginning of Semester III jointly for III & IV Semester

(iv) Single Mark sheet for III & IV Semester will be given to the student.