

Academic Programmes:

- **B. Tech Mechanical Engineering (Manufacturing & Management)**
- **M. Tech (Industrial Engineering & Management)**
- **Ph.D.**

B. Tech in Mechanical Engineering (Manufacturing & Management)

Overview: The four year B.Tech programme aims to produce world-class engineering professionals in Mechanical Engineering capable of meeting the challenges of the diverse fields of Mechanical Engineering discipline emphasizing in Manufacturing and Management related aspects. The curriculum consists of an eight semester programme. In the first two semesters, the students are given instructions in basic sciences and humanities in a manner that would facilitate their smooth passage from the intermediate level of education and acclimatize them in a professionally oriented learning process.

In the successive six semesters, they are imparted in-depth knowledge in core subjects of Manufacturing and Management fields. Each semester on an average includes six theory and two laboratory courses. During the 6th semester the students undergo industrial training in a reputed industry/research organization and submit the training report. In addition, students undergo project work aiming to create industry exposure and develop entrepreneurial capabilities. The project work is spread in both the 7th and 8th semesters to carryout project with the guidance of the faculty. The completed projects are evaluated at the end of 8th semester.

Duration: The duration of B.Tech programme is of eight semesters spread over four years. Eight semesters includes classroom instruction, laboratory work, industrial training and project work.

CURRICULA:

First Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs.	Maximum Marks		
				L/T	D/P		Sem End Exam	Sessionals	
1	EUREG101	English Language skills	HS	3	---	3	60	40	3
2	EURMT102	Engineering Mathematics - I	MT	4	---	3	60	40	4
3	EURPH103	Engineering Physics - I	BS	4	---	3	60	40	4
4	EURCH104	Engineering Chemistry – I	BS	4	---	3	60	40	4
5	EURCS105	Programming with C	BE	3	---	3	60	40	3

6	EURME111	Workshop Technology	BE		3	3		100	2
7	EURPH112	Engineering Physics Lab	BS	---	4	3	-	100	2
8	EURCS113	Programming Lab With C	BE	---	3	3	-	100	2
		Total							24

Second Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs	Maximum Marks		
				L/T	D/P		Sem.End Exam	Sessionals	
1	EUREG201	English Writing Skills	HS	3	---	3	60	40	3
2	EURMT202	Engineering Mathematics - II	MT	4	---	3	60	40	3
3	EURMT203	Engineering Mathematics - III	MT	4	---	3	60	40	3
4	EURPH204	Engineering Physics - II	BS	4	---	3	60	40	3
5	EURCH205	Engineering Chemistry – II	BS	4	---	3	60	40	3
6	EURCS206	Object Oriented programming with C++	BE	3	---	3	60	40	3
7	EURCH211	Engineering. Chemistry Lab	BS	----	4	3		100	2
8	EURME212	Engineering Graphics	BE	-----	4	3		100	3
9	EURCS213	Object Oriented Programming Lab with C++	BE	---	3	3	-	100	2
		Total							25

Third Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs.	Maximum Marks		
				L/T	D/P		Sem End Exam	Sessionals	
1	EURMM301	Engineering Mechanics	BE	5		3	60	40	4

2	EURMM302	Mechanics of Solids-I	CE	4	---	3	60	40	3
3	EURMM303	Applied Thermodynamics-I	CE	4	---	3	60	40	3
4	EURMM304	Manufacturing Technology-I	CE	4	---	3	60	40	3
5	EURMM305	Principles of Management	CE	4	---	3	60	40	3
6	EURMM306	Environmental Studies	HS	4	---	3	60	40	4
7	EURMM311	Computer Aided Machine Drawing	CE	----	3	3		100	2
8	EURMM312	Manufacturing Technology-I Lab	CE	-----	3	3		100	2
9		Industrial Tour	Audit Co						Non Credit
		Total							24

Fourth Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs.	Maximum Marks		
				L/T	D/P		Sem.End Exam	Sessionas	
1	EURMM401	Managerial Economics	BE	4		3	60	40	3
2	EURMM402	Mechanics of Solids-II	CE	4	---	3	60	40	3
3	EURMM403	Applied Thermodynamics-II	CE	4	---	3	60	40	3
4	EURMM404	Manufacturing Technology-II	CE	4	---	3	60	40	3
5	EURMM405	Materials Science	BE	4	---	3	60	40	3
6	EURMM406	Elements of Electrical & Electronics Engineering	BE	4	---	3	60	40	3
7	EURMM411	Mechanical Engineering-I Lab	CE	----	3	3		100	2
8	EURMM412	Mechanics of Solids Lab	CE	-----	3	3		100	2
9	EURMM413	Communication Skills Lab	HS		3	3		100	2
		Total							24

Fifth Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs.	Maximum Marks		
				L/T	D/P		Sem End Exam	Sessionals	
1	EURMM501	Theory of Machines – I	CE	4		3	60	40	3
2	EURMM502	Fluid Mechanics and Hydraulic Machines	CE	4	---	3	60	40	3
3	EURMM503	Quality Control and Assurance	CE	4	---	3	60	40	3
4	EURMM504	Manufacturing Technology-III	CE	4	---	3	60	40	3
5	EURMM505	Methods Engineering and Work Design	CE	4	---	3	60	40	3
6	EURMM506	Instrumentation and Control Systems	CE	4	3	60	40	3
7	EURMM511	Computer Aided Production Drawing Lab	CE		3	3		100	2
8	EURMM512	Mechanical Engineering-II Lab	CE	----	3	3		100	2
9	EURMM513	Electrical Engineering Lab	CE	----	3	3		100	2
		Total							24

Sixth Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs.	Maximum Marks		
				L/T	D/P		Sem.End Exam	Sessionals	
1	EURMM601	Theory of Machines - II	CE	4		3	60	40	3
2	EURMM602	Heat Transfer	CE	4	---	3	60	40	3
3	EURMM603	Design of Machine Elements	CE	4	---	3	60	40	3
4	EURMM604	Human Resources Management	CE	4	---	3	60	40	3
5	EURMM605	Metrology and Computer Aided Inspection	CE	4	---	3	60	40	3
6	EURMM606	Finite Element Methods	CE	4		3	60	40	3
7	EURMM611	Manufacturing Technology –II Lab	CE		3	3		100	2

8	EURMM612	Fluid Mechanics and Machinery Lab	CE	----	3	3		100	2
9	EURMM613	Industrial Management Laboratory	CE	-----	3	3		100	2
10		Personality Development	Audit Course						Non Credit
		Total							24

Seventh Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs.	Maximum Marks		
				L/T	D/P		SemEnd Exam	Sessonals	
1	EURMM701	Quantitative Techniques in Management	CE	4		3	60	40	3
2	EURMM702	Modern Manufacturing Methods	CE	4	---	3	60	40	3
3	EURMM703	CAD – CAM	CE	4	---	3	60	40	3
4	EURMM724 EURMM734 EURMM744 EURMM754	Departmental Elective – I	DE	4	---	3	60	40	4
5	EURMM725 EURMM735 EURMM745 EURMM755	Departmental Elective – II	DE	4	---	3	60	40	4
6	EURMM711	Heat Transfer Lab	CE		3	3		100	2
7	EURMM712	Metrology Lab	CE	---	3	3		100	2
8	EURMM713	Industrial Training	IT	---	3	3		100	2
9	EURMM714	Project Work	PW		4	3		100	3
		Total							26

Departmental Elective – I		Departmental Elective – II	
EURMM724	Advanced Manufacturing Technology	EURMM725	Management Information Systems
EURMM734	CNC & APT Programming	EURMM735	Total Quality Management
EURMM744	Robotics	EURMM745	Supply Chain Management
EURMM754	Tool Engineering and Design	EURMM755	Maintenance Management
EURMM764	Computer Integrated Manufacturing	EURMM765	Inventory Control

Eighth Semester

Sl. No.	Code No.	Subject	Category	Scheme of Instruction		Scheme of Examination			Credits to be awarded
				Hours per week		Duration in Hrs.	Maximum Marks		
				L/T	D/P		SemEnd Exam	Sessionals	
1	EURMM801	Production Planning and Control	CE	4		3	60	40	3
2	EURMM822 EURMM832 EURMM842 EURMM852	Departmental Elective - III	DE	4	---	3	60	40	4
3		Inter Departmental Elective-I	IE	4	---	3	60	40	4
4		Inter Departmental Elective-II	IE	4	---	3	60	40	4
5	EURMM811	CAD / CAM Lab	CE	4	---	3	60	40	2
6	EURMM812	Comprehensive Viva	CV		3	3		100	2
7	EURMM813	Project Work	PW	----	9	3		100	5
		Total							24

** Inter Departmental Elective will be from other departments. The list of courses that would be offered by the department in any semester will be notified from which the student may select a course.

Departmental Elective - III	
EURMM822	Automobile Engineering
EURMM832	Nano Technology
EURMM842	Project Management
EURMM852	Marketing Management
EURMM862	Professional Ethics

M. Tech (Industrial Engineering & Management)

Overview: The PG-Programme has been structured to impart Industrial Engineering and Management orientation aspects. The curriculum is designed to enable students to master the fundamentals of probability & statistics and concepts of advanced optimization. The 2nd second semester covers facilities operational and financial planning related aspects. During the 3rd semester the students carryout a mini project under the guidance of the faculty and submit a report. In the fourth semester students' carryout a project work in a reputed industry/research organization and the report on the completed project is submitted at the end of 4th of semester.

Duration: The duration of M. Tech programme is of four semesters spread over two years. Four semesters includes classroom instruction, laboratory work and project work.

CURRICULA:

First Semester

Course No.	Name of the course	Periods per week			Duration of exam (hr)	Max. marks			Credits
		Lec.	Lab	Total		End Exam	Sess.	Total	
EPRIE101	Probability and Statistics	4	—	4	3	60	40	100	4
EPRIE102	Advanced Optimization Techniques	4	—	4	3	60	40	100	4
EPRIE103	Work System Design	4	—	4	3	60	40	100	4
EPRIE104	Management Principles & Perspectives	4	—	4	3	60	40	100	4
EPRIE105	Inventory And Supply Chain management	4	—	4	3	60	40	100	4
EPRIE121 EPRIE122 EPRIE123 EPRIE124 EPRIE125 EPRIE126	ELECTIVE – I	4	—	4	3	60	40	100	4
EPRIE111	Industrial Management Lab	—	3	3	—	—	100	100	2
EPRIE112	Seminar	—	3	3	—	—	100	100	2
Total		24	6	30		360	440	800	28

ELECTIVE-I
EPRIE121: Reliability Engineering and Management
EPRIE122: Maintenance Management
EPRIE123: Total Quality Management
EPRIE124: Project Management
EPRIE125: Corporate Planning
EPRIE126: Marketing Management

Second Semester

Course No.	Name of the course	Periods per week			Duration of exam (hr)	Max. marks			Credits
		Lec.	Lab	Total		Exam	Sess.	Total	
EPRIE201	Facility Planning and Design	4	—	4	3	60	40	100	4
EPRIE202	Operations Planning & Control Systems	4	—	4	3	60	40	100	4
EPRIE203	Financial Management	4		4	3	60	40	100	4
EPRIE204	Management Information Systems	4	—	4	3	60	40	100	4
EPRIE205	Industrial Quality Management	4	—	4	3	60	40	100	4
EPRIE231 EPRIE232 EPRIE233 EPRIE234 EPRIE235 EPRIE236	ELECTIVE – II	4	—	4	3	60	40	100	4
EPRIE211	Computer Applications Lab	—	3	3	—	—	100	100	2
EPRIE212	Seminar	—	3	3	—	—	100	100	2
Total		24	6	30		360	440	800	28

ELECTIVE-II
EPRIE231: Soft Computing Techniques
EPRIE232: Management of Technology And Innovation
EPRIE233: Human Resource Management
EPRIE234: Product Design Management
EPRIE235: Production Management
EPRIE236: Risk Management and Insurance

Third Semester

Course No.	Name of the course	Periods per week			Duration of exam (hours)	Max. marks			Credits
		Lec.	Lab/Tut	Total		Exam	Sess.	Total	
EPRIE311	Comprehensive Viva	-			—	100	--	100	2
EPRIE312	Project	-			--	50	50	100	6
Total						150	50	200	8

Fourth Semester:

Course No.	Name of the course	Periods per week			Duration of exam (hours)	Max. marks			Credits
		Lec.	Lab/Tut	Total		Exam	Sess.	Total	
EPRIE411	Project	-			-	50	50	100	16
Total						50	50	100	16

The prerequisite for submission of the ME thesis is that one should communicate his/her work to any referred journal.

Pedagogy:

The teaching-learning method for UG and PG programmes includes (a) Lecturing: Conventional (b) Interactive session – Discussion teaching and (c) Audio-visual methods. In-class student collaboration within the classroom increases students' critical thinking skills and has positive effects on student achievement, persistency and attitudes. Teacher-student interactive sessions improves the conceptual ideas which promote augmentative innovativeness in students.

Evaluation:

The assessment of the students performance in each course will be based on continuous internal evaluation through mid semester examinations, quizzes, assignments & attendance (40%) and semester end examinations (60%) with high level of transparency.

Research Programmes:

The Department also offers Ph.D programs in different areas of Production Engineering. The research activities of the department involve areas like Manufacturing Engineering, Process Planning, Supply Chain Management, Optimization for Engineering Design and System dynamics.

Duration

Duration for Ph.D. programme is three years for full time scholars and four years for part time scholars.

Student feedback:

Evaluation of the teachers by students is also carried out at the end of each semester. The data obtained are analyzed and the teachers scoring lower levels are advised to adopt remedial measures.