Department of Mechanical Engineering
Second Year B.Tech. In Mechanical Engineering
Semester-III

Sr. No	Course Code	Course Type	Name of the Course	Teaching Scheme Per Week			Credits	Total Marks	Evaluation scheme			
				Lecture	Tutorial	Practical			Type	Max. Marks	Min. Marks for Passing	
1	201MEL201	BSC	Engineering Mathematics III	3	1	-	4	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
2	201MEL202	PCC	Fluid Mechanics	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
3	201MEL203	PCC	Kinematics and Theory of Machines@	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
4	201MEL204	PCC	Manufacturing Processes	3			3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
5	201MEL205	PCC	Applied Thermodynamics	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
6	201MEP202	LC	Fluid Mechanics Lab	-	-	2	1	50	ISE	25	10	10
									ESE (POE)	25	10	10
7	201MEP203	LC	Kinematics and Theory of Machines Lab	-	-	2	1	25	ISE	25	10	10
8	201MEP205	LC	Applied Thermodynamics Lab	-	-	2	1	50	ISE	25	10	10
									ESE (POE)	25	10	10
9	201MEP206	LC	Workshop Practice II Lab	-	-	2	1	50	ISE	25	10	10
									ESE (POE)	25	10	10
10	201MEP207	ESC	Advanced Computer Programming Lab	-	-	2	1	25	ISE	25	10	10
			Total	**15**	**1**	**10**	**21**	**700**	**Total Credits: 21**			
									Total Contact Hrs.: 26			

Course Code	Definition
BSC	Basic Science Course
ESC	Engineering Science Course
HSMC	Humanity and Social Science including Management Course
PCC	Professional Core Course
PEC	Professional Elective Course
OEC	Open Elective Course
LC	Laboratory Course
MC	Mandatory Course

Abbreviations:

ISE: In Semester Evaluation,
MSE:-Mid semester Examination,
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Note:
1. ESE will be conducted for 100 marks and converted to 50 marks
2. @ Theory paper of 04 (four hour) Durations

Department of Mechanical Engineering
Second Year B.Tech. In Mechanical Engineering
Semester-IV

Sr. No	Course Code	Course Type	Name of the Course	Teaching Scheme Per Week			Credits	Total Marks	Evaluation scheme			
				Lecture	Tutorial	Practical			Type	Max. Marks	Min. Marks for Passing	
11	201MEL208	ESC	Machine Drawing and Computer Aided Drafting @	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
12	201MEL209	ESC	Strength of Materials	3	1	-	4	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
13	201MEL210	PCC	Fluid and Turbo Machinery	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
14	201MEL211	PCC	Machine Tools and Processes	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
15	201MEL212	PCC	Theory of Machines	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
16	201MEP208	LC	Machine Drawing and Computer Aided Drafting Lab	-	-	2	1	25	ISE	25	10	10
17	201MEP210	LC	Fluid and Turbo Machinery Lab	-	-	2	1	50	ESE (POE)	25	10	10
									ISE	25	10	10
18	201MEP212	LC	Theory of Machines	-	-	2	1	50	ISE	25	10	10
									ESE (POE)	25	10	10
19	201MEP213	ESC	Workshop Practice-III Lab	-	-	2	1	75	ISE	25	10	10
									ESE (POE)	50	20	20
20	201MEP214	LC	CAD-CAM Lab	-	-	2	1	25	ISE	25	10	10
21	201MEMC215	MC	Environmental Studies	2			0					
			Total	**17**	**1**	**10**	**21**	**725**	**Total Credits: 21**			
									Total Contact Hrs.: 28			

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Note:

1. **ESE will be conducted for 100 marks and converted to 50 marks**
2. **@ Theory paper of 04 (four hour) Durations**
3. **Students have to undergo 4 to 6 weeks internship Semester after IV or VI during summer vacation**

(Guidelines for Internship is attached below)

Guidelines for Internship -

• The students are expected to undergo 4 to 6 weeks internship in Industry and work on relevant area as assigned by industry. The work done should be monitored and evaluated by the concerned Industrial expert based on report prepared by the students. The department has to assign one faculty member who has to communicate with industry and monitor the internship related work periodically.

The weightage of evaluation will be as under:-

a) Industry expert/Supervisor -70%

b) Department and faculty mentor includes preparation and submission of report to department at the beginning of subsequent semester -30%

• Internship can be availed by the students during summer vacation after the completion of Semester IV or VI.

• The credits of internship will be considered in Semester VII

• The industry expert/Supervisor is expected to assign work worth of minimum of 100 to 120 hrs. for 4 to 6 week duration and should monitor and evaluate periodically.

• At the completion of Internship work, the student is expected to prepare report on the work done and get certified from the industry expert.

Department of Mechanical Engineering
Third year B.Tech. In Mechanical Engineering
Semester-V

Sr. No	Course Code	Course Type	Name of the Course	Teaching Scheme Per Week			Credits	Total Marks	Evaluation scheme			
				Lecture	Tutorial	Practical			Type	Max. Marks	Min. Marks for Passing	
1	201MEL301	HSMC	Industrial Engineering and Operation Research	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
2	201MEL302	PCC	Metallurgy	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
3	201MEL303	PCC	Metrology and Quality Control	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
4	201MEL304	PCC	Design of Machine Elements	3	1	-	4	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
5	201MEL305	PCC	Heat Transfer	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
6	201MEP302	LC	Metallurgy lab	-	-	2	1	50	ISE	25	10	10
									ESE (OE)	25	10	10
7	201MEP303	LC	Metrology and Quality Control Lab	-	-	2	1	50	ISE	25	10	10
									ESE (OE)	25	10	10
8	201MEP305	LC	Heat Transfer lab	-	-	2	1	50	ISE	25	10	10
									ESE (POE)	25	10	10
9	201MEP306	PROJ	Mini Project	-	-	2	1	25	ISE	25	10	10
10	201MEP307	ESC	Workshop Practice-IV	-	-	2	1	25	ISE	25	10	10
11	201MEMC308	MC	Essence of Indian Traditional Knowledge	2	-	-	0					
			Total	**17**	**1**	**10**	**21**	**700**	**Total Credits: 21**			
									Total Contact Hrs.: 28			

Course Code	Definition
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PROJ	Project

Abbreviations:

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Note:
ESE will be conducted for 100 marks and converted to 50 marks

Department of Mechanical Engineering
Third year B.Tech. In Mechanical Engineering
Semester-VI

Sr. No	Course Code	Course Type	Name of the Course	Teaching Scheme Per Week			Credits	Total Marks	Evaluation scheme			
				Lecture Hours	Tutorial Hours	Practical Hours			Type	Max. Marks	Min. Marks for Passing	
12	201MEL309	PCC	Internal Combustion Engines	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
13	201MEL310	PCC	Machine Design	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
14	201MEL311	PCC	Manufacturing Technology @	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
15	201MEL312	PCC	Industrial Hydraulics & Pneumatics	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
16	201MEL313-314	OEC	Open Elective-I	3	1	-	4	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
17	201MEP309	LC	Internal Combustion Engines Lab	-	-	2	1	50	ISE	25	10	10
									ESE (POE)	25	10	10
18	201MEP310	LC	Machine Design Lab	-	-	2	1	50	ISE	25	10	10
									ESE (OE)	25	10	10
19	201MEP311	LC	Manufacturing Technology Lab	-	-	2	1	25	ISE	25	10	10
20	201MEP312	LC	Industrial Hydraulics & Pneumatics Lab	-	-	2	1	25	ISE	25	10	10
21	201MEP315	ESC	Instrumentation Lab	-	-	2	1	50	ISE	25	10	10
									ESE (OE)	25	10	10
			Total	**15**	**1**	**10**	**21**	**700**	**Total Credits: 21**			
									Total Contact Hrs.: 26			

Open Elective Course-I

Sr. No	Course Code	Course No.	Open Elective Course-I
1	OEC	201MEL313	Human Resource Management
2	OEC	201MEL314	Industrial Automation and Robotics

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Department of Mechanical Engineering
Final Year B.Tech. In Mechanical Engineering
Semester-VII

Sr. No	Course Code	Course Type	Name of the Course	Teaching Scheme Per Week			Credits	Total Marks	Evaluation scheme			
				Lecture	Tutorial	Practical			Type	Max. Marks	Min. Marks for Passing	
1	201MEL401	PCC	Refrigeration and Air Conditioning	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
2	201MEL402	PCC	Mechatronics	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
3	201MEL403-405	PEC	Professional Elective I	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
4	201MEL406-407	OEC	Open Elective II	3	1	-	4	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
5	201MEP401	LC	Refrigeration and Air Conditioning Lab	-	-	2	1	50	ISE	25	10	10
									ESE (POE)	25	10	10
6	201MEP402	LC	Mechatronics Lab	-	-	2	1	50	ISE	25	10	10
									ESE (OE)	25	10	10
7	201MEP403-405	LC	Professional Elective I Lab	-	-	2	1	25	ISE	25	10	10
8	201MEP408	PROJ	Internship	-	-	-	4	50	ISE	50	20	20
9	201MEP409	PROJ	Project Phase-I	-	-	2	1	50	ISE	50	20	20
									ESE (OE)	25	10	10
			Total	**12**	**1**	**8**	**21**	**625**	**Total Credits: 21**			
									Total Contact Hrs.: 21			

Professional Elective Core Course-I

Sr. No	Course Code	Course No.	Professional Elective Core Course-I
1	PEC	201MEL403	Automobile Engineering
2	PEC	201MEL404	Control Engineering
3	PEC	201MEL405	Finite Element Analysis

Open Elective Course-II

Sr. No	Course Code	Course No.	Open Elective Course-I
1	OEC	201MEL406	Entrepreneurship Development
2	OEC	201MEL407	Industry 4.0

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Department of Mechanical Engineering
Final Year B.Tech. In Mechanical Engineering
Semester-VIII

Sr. No	Course Code	Course Type	Name of the Course	Teaching Scheme Per Week			Credits	Total Marks	Evaluation scheme			
				Lecture	Tutorial	Practical			Type	Max. Marks	Min. Marks for Passing	
10	201MEL410	PCC	Process Planning and Cost Estimation	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
11	201MEL411-414	PEC	Professional Elective II	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
12	201MEL415-417	PEC	Professional Elective III	3	-	-	3	100	ISE	20	20	40
									MSE	30		
									ESE	50	20	
13	201MEL418	PROJ	Project Phase –II	-	-	10	5	125	ISE	50	20	20
									ESE (OE)	75	30	30
14	201MEP410	LC	Process Planning and Cost Estimation Lab	-	-	2	1	50	ISE	25	10	10
									ESE (OE)	25	10	10
15	201MEL411-414	LC	Professional Elective II Lab	-	-	2	1	25	ISE	25	10	10
16	201MEL415-417	LC	Professional Elective III Lab	-	-	2	1	25	ISE	25	10	10
17	201MEMC419	MC	Enterprise Resource Planning	2	-	-	0					
			Total	**11**	**0**	**16**	**17**	**525**	**Total Credits: 17**			
									Total Contact Hrs.: 27			

Professional Elective Core Course-II

Sr. No	Course Code	Course No.	Professional Elective Core Course-II
1	PEC	201MEL411	Total Quality Management
2	PEC	201MEL412	Additive Manufacturing
3	PEC	201MEL413	Noise and Vibration
4	PEC	201MEL414	Energy Engineering

Professional Elective Core Course-III

Sr. No	Course Code	Course No.	Professional Elective Core Course-III
1	PEC	201MEL415	Computer Integrated Manufacturing Systems
2	PEC	201MEL416	Advanced Machine Tool Design
3	PEC	201MEL417	Composite Materials and Processing

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Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	19	19	21	21	21	21	21	17	160

Dr. A. V. GhutePatil
Program Coordinator

Prof. Dr. S. R. Todkar

Prof. Dr. G. A. Patil
Dean Academics

Sr. No.	Category	As per AICTE Guidelines	Mechanical Engineering
1	Humanity and Social Sciences including Management Courses (Humanity)	12	4(FY)+3=7
2	Basic Science Courses (Engg. Math. III)	25	16(FY)+4=20
3	Engineering Science Courses including workshop, drawing, basics of electrical/mechanical/computer etc.	24	18(FY) + 14 =32
4	Professional Core Course	48	70
5	Professional Elective Course relevant to chosen specialization/branch	18	12
6	Open subjects-Electives from other technical and /or emerging subjects	18	8
7	Project work, seminar and internship in industry or elsewhere	15	11
8	Mandatory Courses(Environmental Studies , Essence of Indian Traditional Knowledge, Enterprise Resource Planning)	(non -credit)	(non -credit)
Total		160	160

Sr. No.	Category	Subjects Included
1	Humanity and Social Sciences including Management Courses(HSMC)	Industrial Engineering and Operation Research
2	Basic Science Courses(BSC)	Engg. Math. III
3	Engineering Science Courses including workshop, drawing, basics of electrical/mechanical/computer etc.(ESC)	Machine Drawing and Computer Aided Drafting, Workshop practice II,III,IV, Advanced Computer Programming Lab, CAD-CAM, Strength of Materials, Instrumentation
4	Professional Core Course(PCC)	Fluid Mechanics, Applied Thermodynamics, Kinematics and Theory of Machines, Manufacturing Processes, Fluid & Turbo Machinery, Machine Tools & Processes, Theory of Machines, Metallurgy, Industrial Hydraulics & Pneumatics, Manufacturing Technology, Design of Machine Elements, Heat Transfer, Internal Combustion Engines, Machine Design, Metrology and Quality Control, Refrigeration and Air Conditioning, Mechatronics, Process Planning & Cost Estimation
5	Professional Elective Course relevant to chosen specialization/branch(PEC)	Automobile Engineering, Control Engineering, Finite Element Analysis, Total Quality Management, Additive Manufacturing, Noise and Vibration, Energy Engineering, Computer Integrated Manufacturing Systems, Advanced Machine Tool Design, Composite Materials and Processing
6	Open subjects-Electives from other technical and /or emerging subjects(OEC)	Human Resource Management, Industrial Automation and Robotics, Entrepreneurship Development, Industry 4.0
7	Project work, seminar and internship in industry or elsewhere (PROJ)	Project Phase I and II, Mini Project, Internship
8	Mandatory Courses(MC)	Environmental Studies, Essence of Indian Traditional Knowledge, Enterprise Resource Planning