



K.E. Society's
Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute, affiliated to Shivaji University, Kolhapur)
Curriculum Structure and Evaluation Scheme
 With effective from 2020-21 [2020-24 & 2021-25 Batch]
 Department of Mechanical Engineering

Class: S. Y. B. Tech

Semester: III

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)		Practical (Marks %)		
							Max	Min. for passing	Max.	Min. for passing	
ME2013	Material Science & Metallurgy	3	-	-	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15			----	----
						ESE	50			40	----
ME2033	Engineering Thermodynamics	3	-	-	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15			----	----
						ESE	50			40	----
ME2053	Engineering Mechanics	3	-	-	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15			----	----
						ESE	50			40	----
ME2073	Fluid Mechanics	3	-	-	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15			----	----
						ESE	50			40	----
ME2093	Manufacturing Processes and Machine Tools	3	-	-	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15			----	----
						ESE	50			40	----
ME2113	Electrical Technology	2	-	-	2	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15			----	----
						ESE	50			40	----
SH2173	Environmental Science	1*	-	-	1	ISE	50	40	----	----	
						ESE	50	40	----	----	
ME2513	Engineering Mechanics Lab	-	-	2	1	ISE	----	----	100	50	
ME2533	Fluid Mechanics and Electrical Technology Lab	-	-	2	1	ISE	----	----	50	50	
						ESE	----	----	50	50	
ME2553	Material Science & Metallurgy Lab	-	-	2	1	ISE	----	----	100	50	
ME2573	Workshop Practice -I	-	-	2	1	ISE	----	----	100	50	
ME2593	Technical Aptitude-I	-	-	2	1	ESE	100	50	----	----	
SH2613	Environmental Science Project	-	-	2	1	ISE	---	----	100	50	
	Open Elective- II										
	Choice Based Soft Skill Program-I	-	-	2	1	ISE	-	-	-	100	50
	TOTAL	18	-	14	25						

ISE = In Semester Exam, MSE (UT1+UT2) UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam

Total Contact Hours/week : 32

Total Credits : 25

Note*: One extra lecture to be allotted to Environment Science in time Table.

Technical Aptitude Courses: Material Science, Engineering Thermodynamics, Engineering Mechanics, Fluid Mechanics, Manufacturing Processes and Machine Tools





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 Department of Mechanical Engineering

Class: S. Y. B. Tech

Semester: IV

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)		Practical (Marks %)		
							Max	Min. for passing	Max	Min. for passing	
SH2063	Engineering Mathematics –III	3	1	-	4	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
ME2023	Strength of Material	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
ME2043	Applied Thermodynamics	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
ME2063	Manufacturing Engineering	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
ME2083	Kinematics of Machines	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
ME2103	Computer Programming C++	2	-	-	2	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
ME2503	Applied Thermodynamics lab	-	-	2	1	ISE	---	---	50	50	
ME2523	Machine Drawing Lab	-	-	2	1	ESE	---	---	50	50	
ME2563	Computer Programming C++ Lab	-	-	2	1	ISE	---	---	100	50	
						ESE	---	---	50	50	
ME2583	Workshop Practice – II	-	-	2	1	ISE	---	---	50	50	
						ESE	---	---	50	50	
ME2603	Technical Aptitude-II	-	-	2	1	ESE	100	50	---	---	
	Open Elective- III Choice Based Soft Skill Program-II	-	-	2	1	ISE	-	-	50	50	
						ESE	-	-	50	50	
TOTAL		17	1	12	24						

ISE = In Semester Exam, MSE (UT1+UT2) UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam

Total Contact Hours/week : 30

Total Credits : 24

Technical Aptitude Courses : Strength of Material, Applied Thermodynamics, Engineering Mathematics –III, Manufacturing Engineering, Kinematics of Machines

Note: Students are required to undergo industrial / field training of minimum four weeks in the vacation of Semester-IV and its evaluation will be carried out in the Semester-V





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Class: T. Y. B. Tech

Semester: V

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)		Practical (Marks %)		
							Max	Min. for Passing	Max	Min. for passing	
ME3013	Dynamics of Machines	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3033	Design of Machine Elements	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3053	Metrology & Control Engineering	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3073	Heat Transfer	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
	Program Elective-I	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3513	Workshop Practice – III	-	-	2	1	ISE	---	---	---	50	50
ME3533	Kinematics and Dynamics of Machinery Lab	-	-	2	1	ISE	---	---	---	50	50
						ESE	---	---	---	50	50
ME3553	Metrology & Measurement Lab	-	-	2	1	ISE	---	---	---	100	50
ME3573	Heat Transfer Lab	-	-	2	1	ISE	---	---	---	50	50
						ESE	---	---	---	50	50
ME3593	CAD-Modelling	-	-	2	1	ISE	---	---	---	100	50
ME3613	Technical Aptitude-III	-	-	2	1	ESE	100	40	---	---	---
SH3033	Scholastic Aptitude I	2*	-	-	2	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3633	Summer Internship	-	-	-	2	ISE	---	---	---	100	50
SH3013	Indian Constitution	2	-	-	Audit	ISE	100	50	(P/N)	---	---
	TOTAL	19	-	12	25						

ISE = In Semester Exam, MSE (UT1+UT2) UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam

Total Contact Hours/week : 31

Total Credits : 25

Note*: One extra lecture to be allotted to Scholastic Aptitude-I in time Table.

Technical Aptitude Courses: Dynamics of Machines, Design of Machine Elements, Heat Transfer





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Class: T. Y. B. Tech

Semester: VI

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)		Practical (Marks %)		
							Max	Min. for passing	Max	Min. for passing	
ME3023	Machine Design	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3063	Fluid & Turbo Machinery	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3083	Finite Element Method	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
	Program Elective-II	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
	Open Elective-IV	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
SH3021	Biology for Engineers	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
ME3463	Design Engineering Lab	-	-	2	1	ISE	---	---	---	50	50
						ESE	---			---	---
ME3483	Python Programming Lab	-	-	2	1	ISE	---	---	---	50	50
						ESE	---			---	---
ME3503	Fluid & Turbo Machinery lab	-	-	2	1	ISE	---	---	---	50	50
						ESE	---			---	---
ME3543	Software Training-I	-	-	2	1	ISE	---	---	---	100	50
ME3563	Technical Aptitude-IV	-	-	2	1	ESE	100	50	---	---	---
ME3583	Capstone Project phase-I	-	-	2	2	ISE	---	---	---	100	50
SH304	Psychology for Engineers	1*	-	-	1	ISE	50	40	---	---	---
SH3063	Scholastic Aptitude II	2*	-	-	2	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			---	---
TOTAL		21	-	12	28						

ISE = In Semester Exam, MSE (UT1+UT2) UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam

Total Contact Hours/week : 33

Total Credits : 28

Note*: One extra lecture to be allotted to Scholastic Aptitude-II and Psychology for Engineers in time Table.

Technical Aptitude Courses: Machine Design, Fluid and Turbo Machinery, Finite Element Method





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Sr. No.	Branch	Course Code	Open Elective-IV Courses
13.	Mechanical	OE3263	Aircraft Systems
14.	Mechanical	OE3283	Supply Chain Management
15.	Mechanical	OE3303	New Product Design and Development
16.	Mechanical	OE3323	Entrepreneurship Development
17.	Mechanical	OE3341	Research Methodology





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Program Elective-III

Sr.No.	Course Code	Discipline	Course
1.	ME4113	Design	Acoustics
2.	ME4133		Condition Monitoring
3.	ME4153		Machine Tool Design
4.	ME4173		Mechanical System Design
5.	ME4193		Alternative fuels
6.	ME4203	Thermal	Cryogenics
7.	ME4223		Solar Energy
8.	ME4243		Industrial Automation and Robotics
9.	ME4243	Manufacturing	Management of Production Systems

Program Elective-IV

Sr.No.	Course Code	Discipline	Course
1.	ME4313	Design	Mechanical Vibrations
2.	ME4333		Experimental Mechanics
3.	ME4353	Thermal	Automobile Engineering
4.	ME4373		IC Engines
5.	ME4393		Refrigeration and Air conditioning
6.	ME4413	Manufacturing	Mechatronics System Design
7.	ME4433		Manufacturing Simulation
8.	ME4453		Casting Simulation

Program Elective-IV Lab

Sr.No.	Course Code	Discipline	Course
1.	ME4553	Design	Mechanical Vibrations Lab
2.	ME4573		Experimental Mechanics Lab
3.	ME4593	Thermal	Automobile Engineering Lab
4.	ME4613		IC Engine Lab
5.	ME4633		Refrigeration and Air Conditioning Lab
6.	ME4653	Manufacturing	Mechatronics System Lab
7.	ME4673		Manufacturing Simulation Lab
8.	ME4693		Casting Simulation Lab





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Track I: Industry Internship & Projects (IIP)

Class: Final Year B. Tech

Semester: VIII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)			Practical (Marks %)	
							Max.	Min. for passing		Max.	Min. for passing
OE438	Finance for Engineers (Online Course)	-	-	-	2	ISE	25	40	40	---	---
						ESE	75	40		---	---
OE436	Engineering Management & Economics (Online Course)	-	-	-	2	ISE	25	40	40	---	---
						ESE	75	40		---	---
IP4022	Internship & Project	-	-	-	8	ISE	---	---		50	50
	TOTAL	-	-	-	12	ESE	---	---		50	50

ISE = In Semester Evaluation, ESE = End Semester Exam

Total Contact Hours/week : --
 Total Credits : 12

Note:

1] Weekly Contact hours are not mentioned as student is expected to be in industry regularly for 20 weeks. However, student needs to report to Institute mentors as and when required.

2] For online course, lecture videos of each unit will be made available through college platform to the students. For each unit there will be separate assignment. Students need to submit all assignments within specified time.

Weightage: 25% weightage for unit wise assignments + 75% weightage for final exam. Final exam will be held at college campus.





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Track III: Entrepreneurship Development (ED)

Class: Final Year B. Tech

Semester: VIII

Sr.No	Course Code	Course	Teaching Scheme			Credits	Evaluation Scheme					
			L	T	P		Scheme	Theory (Marks %)		Practical (Marks %)		
								Max	Min. for passing	Max	Min. for passing	
1	ED4102	Project Management	2*	-	-	2	ISE	20	40	40		
							UT-1	15				
							UT-2	15				
							ESE	50				
2	ED4042	Commercial Aspects of the Project	2*	-	-	2	ISE	20	40	40		
							UT-1	15				
							UT-2	15				
							ESE	50				
3	ED4062	Entrepreneurship Development Program (EDP)	-	-	-	1	ISE				100	50
4	ED4082	Entrepreneurship Development Project	-	-	7	7	ISE				50	50
							ESE				50	
Total			4	-	7	12						

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam
Total Contact Hours/week : 11
Total Credits : 12

Note:

1] * One extra lecture to be allotted to Project Management and Commercial Aspects of the Project course in time table.

