



### Rajarambapu Institute of Technology, Rajaramnagar

(An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

Curriculum Structure and Evaluation Scheme

To be implemented for 2022-26 Batch

Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

# B.Tech. in Mechanical Engineering with Multidisciplinary Minor







### Rajarambapu Institute of Technology, Rajaramnagar

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Curriculum Structure and Evaluation Scheme

To be implemented for 2022-26 Batch

Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

Class: S. Y. B. Tech

Semester: III

		Teaching Scheme				Evaluation Scheme						
Course Code	Course	L	T	P	Credits	Scheme	Theor %)	у (Ма	rks	Practica %)	ıl (Marks	
Code		L	1	r	Cre		Max	Min. passi		Max.	Min. for passing	
	Mathematics for					ISE	20					
ME2094	Mechanical Engineers	2	-	-	2	UT1	15	40	40			
WIEZU94	Mechanical Engineers	2-		-	2	UT2	15		10			
						ESE	50	40				
	Manufacturing Processes					ISE	20					
ME2114	and Machine Tool	3	_	-	3	UT1	15	, 40	40			
141122114	and Machine 1001					UT2	15		'`			
						ESE	50	40				
	Engineering			0		ISE	20		40			
ME2134	Thermodynamics	3	-		3	UT1	15	40				
WIE2134	Thermodynamics			"		UT2	15					
						ESE	50	40				
	Engineering Mechanics		-			ISE	20	40	40			
ME2154		2			2	UT1	15					
WIE 2154						UT2	15		10			
						ESE	50	40				
	Multidisciplinary Minor- I	3			3	ISE	20	40				
_			-	- i.		UT1	15		40			
-		,				UT2	15					
			1			ESE	50	40				
ME2174	Computer Programming	_	-	2	1	ISE				50	50	
171152174	C++				1	ESE				50	50	
ME2314	Engineering Mechanics Lab	-	-	2	1	ISE				100	50	
ME2334	Machine Drawing Lab	_		2	1	ISE			-	50	50	
WIE2554					,	ESE			-	50	50	
ME2354	Workshop Practice-I	-	-	2	1	ISE			-	100	50	
ME2374	Technical Aptitude-I	-	-	2	1	ESE			-	100	50	
	Professional Skills Development and Foreign Languages	-	-	2	1	ISE			-	100	50	
-	TOTAL	13	-	12	19				-			
	TOTAL CONTACT HOURS		25									

ISE - In Semester Evaluation, UT1 - Unit Test-1, UT2 -Unit Test-2, ESE - End Semester Exam.

**Total Contact Hours/week** : 25 **Total Credits** : 19

Technical Aptitude Courses: Mathematics for Mechanical Engineers, Manufacturing Processes

and Machine Tools, Engineering Thermodynamics, Engineering Mechanics.







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Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

Sr. No.		Course Code				
1. Professional Skills		ional Skills Professional Leadership Skills				
2.	Development and	Interpersonal Skills	SH2614			
3.	Foreign Languages	Innovation Tools and Methods for	SH2694			
		Entrepreneurs				
4.		Personal Effectiveness and Body	SH2594			
		Language				
5.		German Language-III	SH2734			
6.		Japanese L'anguage-III	SH2714			

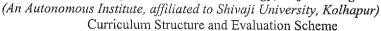
### Note:

- 1. A student has to complete any two courses out of six choices offered under Choice Based Professional Skills Development Programme. A course in each semester will be allocated without any repetition.
- 2. Foreign Language course selected in F. Y. B. Tech Sem-I will remain the same with next levels in Sem-III & IV. (No new entries in S. Y. B. Tech Sem-III).









To be implemented for 2022-26 Batch Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

Class: S. Y. B. Tech

Semester: IV

Course	Course	Tea	ching S	Schei	ne	Evaluation Scheme						
Code		L	T	P	Credits	Scheme	Theory %)		arks	(Mar	Practical (Marks %)	
					Cre		Max	Min. for passing		Max	Min.for passing	
						ISE	20					
ME216	Fluid Mechanics and	3	£		3	UT1	15	40	40			
1413210	Turbomachinery	,	1	-	,	UT2	15		40			
						ESE	50	40				
						ISE	20					
ME2124	Mechanics of Solids	3	_ 3		3	UT1	15	40	40			
	Weenames of Sonas	,	- "	_	)	UT2	15		40			
						ESE	50	40				
			1			ISE	20					
ME2144	Material Science and Metallurgy	3			3	UT1	15	40	40			
111121111		'	-	-	)	UT2	15					
						ESE	50	40				
	Multidisciplinary Minor-					ISE	20	40				
_		3		_	3	UT1	15		40			
-		)		- 1	3	UT2	15		40			
			5.4			ESE	50	40			***	
	Modern Indian Language	2	-	-	2	ISE	100	50			-	
SH2174	Environmental Science	1		2	2	ISE	50	40	40			
0112174		1	- 1			ESE	50	40	40			
ME2204	Fluid Mechanics and	_	_0(	2	1	ISE				50	50	
	Turbomachinery Lab		_	2		ESE				50	50	
ME2224	CAD Modelling Lab	_		2	1	ISE				50	50	
			- u	4	1	ESE				50	50	
ME2244	Material Science and	_		2	1	ISE				50	50	
	Metallurgy Lab		1		1	ESE				50	50	
ME2344	Workshop Practice-II	-	- ,	2	1	ISE				100	50	
ME2364	Technical Aptitude-II	-	- :	2	1	ESE			. [	100	50	
-	Professional Skills Development and Foreign Languages-II	-	- 4	2	1	ISE				100	50	
	TOTAL	15	-	14	22			_				
-	TOTAL CONTACT HOURS		29									

ISE - In Semester Evaluation, UT1 - Unit Test I, UT2 - Unit Test II, ESE - End Semester Exam.

Total Contact Hours/week : 29 Total Credits : 22

**Technical Aptitude Courses:** Fluid Mechanics and Turbomachinery, **Mechanics** of Solids, Material Science and Metallurgy.

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







Rajarambapu Institute of Technology, Rajaramnagar (An Autonomous Institute, affiliated to Shivaji University, Kolhapur) Curriculum Structure and Evaluation Scheme To be implemented for 2022-26 Batch Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

Sr. No.		Course Code			
1. Professional Skills		l Skills Professional Leadership Skills			
2.	Development and	Interpersonal Skills	SH2614		
3. Foreign Languages		Innovation Tools and Methods for	SH2694		
		Entrepreneurs			
4.	1	Personal Effectiveness and Body	SH2594		
		Language			
5.	1	German Language-IV	SH2644		
6.	1	Japanese Language-IV	SH2624		

### Note:

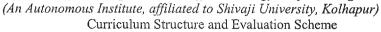
- 1. A student has to complete any two courses out of six choices offered under Choice Based Professional Skills Development Programme. A course in each semester will be allocated without any repetition.
- 2. Foreign Language course selected in F. Y. B. Tech Sem-I will remain the same with next levels in Sem-III & IV. (No new entries in S. Y. B. Tech Sem-III)

Sr. No.	Modern Indian Language: Subject Name	Course Code
1.	मराठी भाषिक कौशल्यविकास	SH202
2.	हिंदी कथा साहित्य एवं प्रयोजमूलक हिंदी	SH204









To be implemented for 2022-26 Batch

Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26
Semester: V

Class: T. Y. B. Tech

Course Code Course Teaching **Evaluation Scheme** Scheme Theory (Marks %) L T Practical P (Marks Credits Scheme %) Max Min. for Max Min. for **Passing** passing ISE 20 UT1 15 40 **ME3114** Heat and Mass Transfer 3 3 40 UT2 15 ESE 50 40 ISE 20 Kinematics and Dynamics of UT1 15 40 **ME313** 3 3 40 Machines UT2 15 ESE 50 40 ISE 20 UT1 15 40 Program Elective-I 2 2 40 UT2 15 ESE 50 40 ISE 20 UT1 15 40 Open Elective-I 3 3 40 UT2 15 **ESE** 50 40 **ISE** 20 UT1 15 40 Multidisciplinary Minor- III 3 3 40 UT2 15 ESE 50 40 ISE 20 UT1 15 40 Multidisciplinary Minor- IV 2 2 40 UT2 15 ESE 50 40 ISE 20 UT1 15 40 SH3034 Scholastic Aptitude-I 2 2 40 UT2 15 ESE 40 50 **ISE** 50 50 ME3214 Heat and Mass Transfer Lab 2 1 **ESE** 50 50 Kinematics and Dynamics of ME3234 2 1 **ISE** 100 50 Machines Lab ME3254 Software Training Lab-I 2 ISE 100 50 ME3814 Technical Aptitude-III 2 1 ESE 50 100 **ME3834** Summer Internship **ISE** -\_ 2 100 50 ---8 24 18 TOTAL CONTACT HOURS 26

ISE - In Semester Evaluation, UT1 - Unit Test I, UT2 - Unit Test II, ESE - End Semester Exam.

**Total Contact Hours/week**: 26 **Total Credits**: 24

Technical Aptitude Courses: Heat and Mass Transfer, Kinematics and Dynamics of Machines.







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# Program Elective-I

Sr. No	Course Code	Domain	Course				
1.	ME3314	:	Mechanics of Composite Material				
2.	ME333	Dagion	Engineering Optimization				
3.	ME3354	Design	Fracture Mechanics				
4.	ME336		Python Programing				
5.	ME3414		Cogeneration and waste heat management				
6.	ME343	Thermal	Alternative sources of energy				
7.	ME345	١	Hybrid and Electric Vehicles				
8.	ME3514		World Class Manufacturing				
9.	ME3534	Manufacturing	Non-Traditional Machining Processes				
10.	ME359	Manuracturing	Operations Research				
11.	ME363	T <sub>j</sub>	Quality Management System				
12.	ME3594		Production and Operation Management				
13.	ME361		Sensors and Actuators in Robotic Technology				

		Open Elec	ctive- I
Sr. No	Course Code	Course Name	Offered By Department
1.	OE345	Soft Computing	Computer Science & Information Technology
2.	OE361	Object Oriented Modeling and Design	Computer Science & Information Technology
3.	OE343	Data Science	Computer Science & Engineering (Artificial Intelligence and Machine Learning)
4.	OE347	New Product Design & Development	Mechanical Engineering
5.	OE349	Non-Conventional Energy Sources	Mechanical Engineering
6.	OE351	Hydrogen & Fuel Cell Technology	Mechanical Engineering
7.	OE3044	Renewable Energy Sources	Automobile Engineering
8.	OE353	Factory Automation	Mechatronics Engineering
9.	OE355	Cyber Physical Systems	Mechatronics Engineering
10.	OE3104	Network Administration	Computer Science & Engineering
11.	OE3064	Environmental Impact	Civil Engineering







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Department of Mechanical Engineering

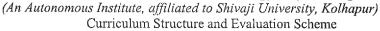
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		Assessment	
12	OE350	Operations Research	Civil Engineering
13	OE341	Energy Auditing and Management	Electrical Engineering
14	OE357	Internet of Things	Electronics & Telecommunication Engineering
15	OE359	Drone Technology	Electronics & Telecommunication Engineering









To be implemented for 2022-26 Batch Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26
Semester: VI

Class: T. Y. B. Tech

Teaching Scheme **Evaluation Scheme** Theory (Marks %) Practical (Marks %) Credits Course Course Code L T P Min. for Min. for Max Max passing passing ISE 20 UT1 40 15 Finite Element Method ME3104 2 2 40 UT2 15 ESE 50 40 20 **ISE Applied Thermal** UT1 15 40 ME3124 3 · 3 40 Engineering UT2 15 ESE 50 40 **ISE** 20 Design of Machine UT1 15 40 **ME3144** 3 3 40 Elements UT2 15 **ESE** 50 40 ---**ISE** 20 UT1 15 40 ME316 2 Research Methodology 2 40 UT2 15 ESE 50 40 **ISE** 20 ------UT1 15 40 ---Program Elective-II 3 3 40 UT2 15 ---**ESE** 50 40 ---ISE 20 ---UT1 15 40 ---Open Elective-II 3 3 40 UT2 15 ---ESE 50 40 ------ISE 20 ------Multidisciplinary Minor-UT1 15 40 ------3 3 40 UT2 15 ---ESE 50 40 ---ISE 20 \_\_\_\_ UT1 15 40 SH3064 Scholastic Aptitude-II 2 2 40 UT2 15 **ESE** 50 40 Software Training Lab-**ME3644** 2 1 ISE --100 50 Applied Thermal **ME3664** 2 1.. 1 **ISE** 100 ---50 Engineering Lab **ME3744** Technical Aptitude-IV 2 ESE 50 100 ME3764 Capstone project Phase I 2 **ISE** 1 100 50 TOTAL 25 TOTAL CONTACT 29 **HOURS** 

ISE - In Semester Evaluation, UT1 - Unit Test I, UT2 - Unit Test II, ESE - End Semester Exam.

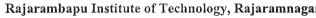
Total Contact Hours/week : 29
Total Credits : 25

Technical Aptitude Courses: Applied Thermal Engineering, Design of Machine Elements





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Rev: ME Course Structure/RIT/01/2022-26

# Program Elective-II

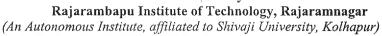
Sr.No.	Course	Discipline	Course					
	Code							
1.	ME322		Industrial Robotics					
2.	ME3264	Dagion	Machine Tool Design					
3.	ME328	Design	Smart Material and Systems					
4.	ME3304		Engineering Acoustics					
5.	ME3364		Energy Conservation & Management					
6.	ME3384	Thermal	Gas Turbine & Jet Propulsion					
7.	ME340	Thermal	Computational Fluid Dynamics (CFD)					
8.	ME3424		Alternative Fuels					
9.	ME3484		Computer Integrated Manufacturing					
10.	ME3504		Total Productive Maintenance					
11.	ME3524	Manufacturing	Tool Engineering					
12.	ME3544	Manufacturing	Industrial Organization and Management					
13.	ME364		Supply Chain Management					
14.	ME368		Robot Dynamics and Applications					

		Open E	lective-II
Sr. No.	Course Code	Course Name	Offered By Department
1	OE3401	Cyber security	Computer Science & Information Technology
2	OE360	Distributed Systems	Computer Science & Information Technology
3	OE342	Data Mining	Computer Science & Engineering (Artificial Intelligence and Machine Learning)
4	OE3024	Reliability Engineering	Automobile Engineering
5	OE344	Supply Chain Analytics	Mechatronics Engineering
6	OE346	Mobile Robotics	Mechatronics Engineering
7	OE348	Information Technology Foundation Program	Computer Science & Engineering
8	OE3381	Disaster Management	Civil Engineering
9	OE3084	Materials Management	Civil Engineering
10	OE358	Plumbing (Water and Sanitation)	Civil Engineering
11	OE3182	Industrial Drives	Electrical Engineering
12	OE352	Image Processing	Electronics & Telecommunication Engineering









Curriculum Structure and Evaluation Scheme

To be implemented for 2022-26 Batch

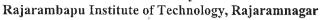
Department of Mechanical Engineering

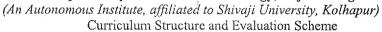
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13	OE354	Fuzzy logic and Neural Network	Electronics & Telecommunication Engineering
14	OE356	Project Management	Mechanical Engineering
15	OE3284	Supply Chain Management	Mechanical Engineering
16	OE3324	Entrepreneurship Development	Mechanical Engineering









To be implemented for 2022-26 Batch

Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

Semester: VII

Class: Final Year B. Tech

		Teaching Scheme				Evaluation Scheme						
Course Code	Course	L	Т	P	Credits	Scheme		Theory (Marks %)		Practical (Marks %)		
		_			ŗ	Sch	Max.	Min. fo passing		Max.	Min. passing	for
	Mechanical System					ISE	20	40				
ME4894	Design	3	-	-	.3	MSE	30	40	40			
	Design					ESE	50	40				
	Metrology and					ISE	20	40				
ME4034	Control Engineering	3	-	-	3	MSE	30		40			
	Condor Engineering				-	ESE	50	40				
	Tu day sand at					ISE	20	40				
ME4054	Industrial Engineering	2	_	-	2	MSE	30		40			
	Engineering					ESE	50	40				
						ISE	20	40				
-	Program Elective-III	3	-	- 1	3	MSE	30	40	40			
						ESE	50	40				
		3				ISE	20	40				
-	Program Elective-IV		- 1	_	3	MSE	30	40	40			
						ESE	50	40				
	Mechanical System					ISE				50	50	
ME4074	Design Lab	-	-	2	1	ESE				50	50	
	Industrial				, ,	ISE				50	50	
ME4094	Engineering and Quality control Lab	-	-	2	'1	ESE		040		50	50	
ME4114	Metrology and Measurement Lab	-	-	2	.1	ISE				100	50	
ME4134	Workshop Practice III (IR4)	_	-	2	1	ISE				100	50	
	Program Elective-IV			_	1	ISE				50	50	
	Lab	_	-	2	T	ESE				50	50	
ME4874	Capstone Project	-	-	6	<sup>2</sup> 3	ISE		_		50	50	
	Phase II	1.4		16	22	ESE				50	50	
-	TOTAL 14 - 16 22 TOTAL CONTACT 30								-			

ISE - In Semester Evaluation, MSE- Mid Semester Exam, ESE - End Semester Exam.

**Total Contact Hours/week** 

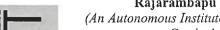
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**Total Credits** 

: 22







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# **Program Elective-III**

Sr.No.	Course Code	Discipline	Course					
1.	ME4154		Condition Monitoring					
2.	ME423	Dagion	Computer Aided Design and Analysis					
3.	ME4194	Design ,	Autotronics & Vehicle Intelligence					
4.	ME421		Engineering Failure Analysis					
5.	ME4234	Thermal	Cryogenics					
6.	ME425		Design of Heat Exchanger					
7.	ME427		Battery Thermal Management system					
8.	ME429		Foundry Technology					
9.	ME431		Enterprise Resource Planning (ERP) and					
		Manufacturing	Product Life Cycle Management (PLM)					
10.	ME433		Sustainable Manufacturing					
11.	ME435		Digital Manufacturing					

### **Program Elective-IV**

Sr.No.	Course	Discipline	Course					
	Code		H :					
1.	ME4394	Design	Mechanical Vibration					
2.	ME4414		Experimental Stress Analysis					
3.	ME4434		Engineering Tribology					
4.	ME447	Thermal	Heating Ventilation and Air Conditioning (HVAC					
5.	ME4494		I C Engines					
6.	ME4514		Refrigeration and Air conditioning					
7.	ME4534		Automotive Engineering					
8.	ME4554	Manufacturing	Industrial Hydraulics and Pneumatics					
9.	ME4574		Mechatronics system Design					
10.	ME459		Additive Manufacturing					
11.	ME461		Mechatronics and IoT					







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# Program Elective-IV Lab

Sr. No	Course Code	Discipline	Course					
1.	ME4634	Design	Mechanical Vibration Lab.					
2.	ME4654		Experimental Stress Analysis Lab.					
3.	ME467		Engineering Tribology Lab.					
4.	ME471	Thermal	Heating Ventilation and Air Conditioning (HVAC)					
			Lab.					
5.	ME4734		I C Engines Lab					
6.	ME4754		Refrigeration and Air conditioning Lab					
7.	ME4774		Automotive Engineering Lab					
8.	ME479	Manufacturing	Industrial Hydraulics and Pneumatics Lab.					
9.	ME4814		Mechatronics system Design Lab					
10.	ME483		Additive Manufacturing Lab					
11.	ME485		Mechatronics and IoT Lab					







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> > Rev: ME Course Structure/RIT/01/2022-26

Choice based Internship Model Model I: Industry Internship (II)

Class:	Final Year B. Tech								Ser	nester:	: VIII		
			Tea Sch	chin ieme	_		Evaluation Scheme						
Course Code	Course	L		Р	redits	Scheme	Theory (Marks %)			Prac	Practical (Marks		
		L	L T		Cre	Sch	Max.	Min. passir		Max.	Min. for passing		
OE4382	Financial Management	2		_	2	ISE	25	40	40				
	(Online Course)		1.65			ESE	75	40					
OE4362	Engineering Management &	2	-(	_	2	ISE	25	40	40				
	Economics (Online Course)					ESE	75	40			4		
IP4024	Industry Internship &	_	_	_	12	ISE		-		50	50		
	Project				12	ESE		-		50	50		
-	TOTAL	4	-,	-	16			_					

ISE - In Semester Evaluation, ESE - End Semester Exam.

Total Contact Hours/week: --**Total Credits** : 16

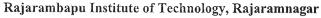
### Note:

- 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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### Model II: Research Internship (RI)

Class: Final Year B. Tech Semester: VIII

			Tea Sch	chin ieme	~	Evaluation Scheme					
Course Code	Course	L	Т	P	Credits	Scheme	Theory (Marks %)			Practical (Marks %)	
		L	ı,	r	Cre		Max.	Min. passir		Max.	Min. for passing
OE4382	Finance for Engineers (Online Course)	2	-6	-	2	ISE	25	40	40		
	(0111110 0011100)		:			ESE	75	40			
OE4362	Engineering Management &	2		_	2	ISE	25	40	40		TO FOLK
	Economics (Online Course)					ESE	75	40			
RE4044	Research Internship	_		-	12	ISE		-	-	50	50
1007044	research mensing				12	ESE		_		50	50
_	TOTAL	4	- 1	_	16			_	-		

ISE - In Semester Evaluation, ESE - End Semester Exam.

Total Contact Hours/week :-Total Credits : 16

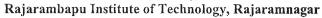
### Note:

- 1] Weekly Contact hours are not mentioned as student is expected to be in outside research organization 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.
- 3] Students who opt for research internship need to undergo a minimum of one month of research internship in outside research organizations or laboratories.

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









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### Model III: Entrepréneurial Internship (EI)

Class: Final Year B. Tech Semester: VIII

433. 11	iai I cai D. I celi				_						emester. VIII		
		118	Teaching Scheme			Evaluation Scheme							
Course Code	Course				Credits	em	Theory (Marks %)			Practi	Practical (Marks %)		
		L	T	P	O	. Schem	Max	Min. for passing		Max	Min. for passing		
ED 4404	Project Management				_	ISE	25	40	40		_		
ED4104	(Online Course)	2	-	-	2	ESE	75	40	40	-	-		
	Commercial Aspects of the	2		-	2	ISE	25	40	40	-	-		
EDTOTT	Project (Online Course)	2				ESE	75	40		-	-		
ED4064	Entrepreneurship Development Program (EDP)	-	-	-	1	ISE	-	-	-	100	50		
ED4084	Entrepreneurial Internship	-	-	-	11	ISE ESE	-	-	-	50 50	50		
-	TOTAL	4	-	-	16	٠ ـ	-	-	- 1	-	_		

ISE - In Semester Evaluation, ESE - End Semester Exam.

**Total Contact Hours/week** 

: 16

**Total Credits** 

### uits

### Note:

- 1] Weekly Contact hours are not mentioned as student is expected to be in outside research organization 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.
- 3] Students who opt for an Entrepreneurial Internship need to undergo a one month internship at an outside reputed organization or a firm.

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

4] A one week Entrepreneurship Development Program (EDP) will be conducted after completion of 7<sup>th</sup> semester and before start of 8<sup>th</sup> semester.





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## Rajarambapu Institute of Technology, Rajaramnagar

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Curriculum Structure and Evaluation Scheme
To be implemented for 2022-26 Batch

Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

# Multidisciplinary Minor

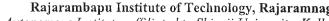
### Note:

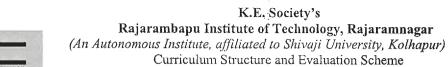
- Student should choose any one specialization given by the department and complete all the five courses under the specialization
- Following are the baskets of multidisciplinary minor courses

		• Mu	ltidisciplinary Min	or Baske	ts			
MDM Basket Name	Sr. No.	Course Code	Course Name	Semester	Offered by Department			
	1	ATMD201	Automobile Systems	III				
	2	ATMD202	I. C. Engines	IV				
Automobile Engineering	3	ATMD301	Automotive Safety & Ergonomics	V	Automotive Technology			
	4	ATMD303	Automotive Engineering Lab.	V				
	5	ATMD302	Electric Vehicles	VI				
			Building Construction and Planning	Ш				
	2	CEMD202	Building Estimation and Valuation	IV				
Construction Engineering	3	CEMD301	Infrastructure Engineering	V	Civil Engineering			
Digmooring	4	CEMD303	Smart Cities and Sustainable Development	V				
	5	CEMD302	Environmental Engineering	VI				
	1	CSMD201	Introduction to Data Structures	III				
Software	2	CSMD202	Problem solving using JAVA	IV	Computer Science &			
Programming	3	CSMD301	Fundamentals of Database Systems	V	Engineering			
	4	CSMD303	Object-oriented Programming in	V	i			



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To be implemented for 2022-26 Batch Department of Mechanical Engineering

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			Python !					
	5	CSMD302	Artificial Intelligence	VI				
	1	EEMD201	Electrical Power Generation	III				
Electrical Power	2	EEMD202	Power System	IV				
System	3	EEMD301	Electrical Machines	V	Electrical Engineering			
	4	EEMD303	Electrical Technology	V				
	5	EEMD302	Smart Grid	VI	-			
	1	ECMD201	Electronics Devices and Applications	Ш				
Electronics System Design	2	ECMD202	Electronics Communication Systems	IV	Electronics			
	3	ECMD301	Advanced Communication Systems	V	&Telecommunication Engineering			
	4	ECMD303	Electronic Product Design	V				
	5	ECMD302	Industrial Electronics	VI				
	1	CIMD201	Data Structures	III				
0.0	2	CIMD202	Computer Algorithms	IV				
Software Development	3	CIMD301	Introduction to DBMS	V	Computer Science & Information Technology			
	4	CIMD303	OOP using Java	V	information recimology			
	5	CIMD302	Software Engineering	VI				
	1	MEMD201	Materials and Applications	III				
Elements of	2	MEMD202	Design and Drawing of Machine Components	IV				
Mechanical Engineering	3	MEMD301	Manufacturing and Assembly Process	V	Mechanical Engineering			
	4	MEMD303	Refrigeration and Air Conditioning	V				
	5	MEMD302	Power Plant Engineering	VI				
Mechatronics Engineering	1	MCMD201	Fundamentals of Mechatronics	` III	Mechatronics Engineering			







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	2	MCMD202	Industrial Fluid Power	IV			
	3 MCMD301 Sensor and Instrumentation		V				
	4	MCMD303	Industrial Automation	V			
	5	MCMD302	Industrial Robotics	VI			
	1	AIMD201	Object Oriented Programming	III			
Artificial	2	2 AIMD202 Data Structures and Algorithms		IV	Computer Science &		
Intelligence	3	AIMD301	Machine Learning	V	Engineering (AI-ML)		
	4	AIMD303	Business Intelligence	V	_ ` ,		
	5	AIMD302	Principles of Artificial Intelligence	VI			





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# B.Tech. in Mechanical Engineering with Double Minor (Multidisciplinary and Specialization Minor)







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Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

# B.Tech. in Mechanical Engineering with Double Minor degree

- 1. It is required to complete SIX courses (each of 3 credits) from ONLINE platform to earn total of 18 credits under Double Minor (DM) certification.
- 2. Student must complete and earn the credits for all the six courses starting from Second Year First semester (3<sup>rd</sup> semester) to Final Year Second Semester (8<sup>th</sup> semester).
- 3. Basket of the DM courses and respective semester is mentioned in the following table.

Sr. No.	Semester	Course	Code			
1	IV	DM – I	MEDM4XXX			
2	V	· · DM – II	MEDM5XXX			
3	V	DM – III	MEDM5XXX			
4	VI	DM – IV	MEDM6XXX			
5	VII	DM - V	MEDM7XXX			
6	VIII	DM – VI	MEDM8XXX			

- 4. To select course platform, first preference must be given to NPTEL.
- 5. Other than NPTEL, courses from COURSERA and UDEMY platforms are allowed to register only in following cases,
  - a. If timeline of NPTEL course is not in line with timeline of academic calendar.
  - b. The suitable succeeding course in line with previous course is not available on NPTEL.
  - c. If any other unavoidable circumstances occurs.
- 6. Platform and course selection must be as per recommendation of BOS of the department.
- 7. Student will get the credits of respective DM course in following conditions,
  - a. In case of course selected from NPTEL platform, student have to complete the timely assignments, PASS the exam and secure the certificate.
  - b. In case of course selected from COURSERA or UDEMY, student have to secure the certificate and appear for VIVA(oral) exam.
- 8. While selecting online course, following points must be taken care of,
  - a. Selected course must be of basic or fundamental level.
  - b. Contents of the course should not be covered in any of the course offered in regular curriculum or not listed in any elective (open or program elective) or in Multidisciplinary Minor (MDM)
  - c. Duration of each online course must be of EIGHT weeks for NPTEL and 30+ hours for UDEMY, COURSERA courses.







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# B.Tech. in Mechanical Engineering with Honor and Multidisciplinary Minor







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Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

# B.Tech. in Mechanical Engineering with Honor and Multidisciplinary

### Minor degree

- 1. It is required to complete SIX courses (each of 3 credits) from ONLINE platform to earn total of 18 credits under Honor certification.
- 2. Student must complete and earn the credits for all the six courses starting from Second Year First semester (3<sup>rd</sup> semester) to Final Year Second Semester (8<sup>th</sup> semester).
- 3. Basket of the Honor courses and respective semester is mentioned in the following table.

Sr. No.	Semester	Course	Code				
1	IV	Honor - I	MEH4XXX				
2	V	Honor - II	MEH5XXX				
3	V	Honor - III	MEH5XXX				
4	VI	Honor - IV	MEH6XXX				
5	VII	Honor - V	MEH7XXX				
6	VIII	Honor - VI	MEH8XXX				

- 4. To select course platform, first preference must be given to NPTEL.
- 5. Other than NPTEL, courses from COURSERA and UDEMY platforms are allowed to register only in following cases,
  - a. If timeline of NPTEL course is not in line with timeline of academic calendar.
  - b. The suitable succeeding course in line with previous course is not available on NPTEL.
  - c. If any other unavoidable circumstances occurs.
- 6. Platform and course selection must be as per recommendation of BOS.
- 7. Student will get the credits of respective Honor course in following conditions,
  - a. In case of course selected from NPTEL platform, student have to complete the timely assignments, PASS the exam and secure the certificate.
  - b. In case of course selected from COURSERA or UDEMY, student have to secure the certificate and appear for VIVA(oral) exam.
- 8. While selecting online course, following points must be taken care of,
  - a. Selected course must be of advanced level and not basic or fundamental level.
  - b. Contents of the course should not be covered in any of the course offered in regular curriculum or not listed in any elective (open or program elective)
  - c. Duration of each online course must be of EIGHT weeks for NPTEL and 30+ hours for COURSERA, UDEMY courses.





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Rajarambapu Institute of Technology, Rajaramnagar

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To be implemented for 2022-26 Batch

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Rev: ME Course Structure/RIT/01/2022-26

# B.Tech. in Mechanical Engineering-Honors with Research and Multidisciplinary Minor





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Curriculum Structure and Evaluation Scheme
To be implemented for 2022-26 Batch
Department of Mechanical Engineering

Department of Mechanical Engineering

Rev: ME Course Structure/RIT/01/2022-26

# Honors with Research and Multidisciplinary Minor

The student will work on Research Project or Dissertation for 18 Credits in the Fourth Year in respective discipline. The distribution of 18 Credits for Research project in Sem-VII and Sem-VIII is given below. To get B.Tech. in Mechanical Engineering-Honors with Research and Multidisciplinary Minor degree Student need to earn total 206 Credits which consist 170 credits of regular Multidisciplinary Minor courses, 18 Credits of Honor courses and 18 credits of Research courses

Class: Final Year B. Tech Semester: VII

				chin 1em			Evaluation Scheme					
Course Code	Course		Т	P	Credits	cheme	Theory (Marks %)		<b>6</b> )	Practical (Marks %)		
		L			Cre	Sch	Max.	Min.		Max.	Min. for passing	
REH401	Intellectual Property				2	ISE	50	40	40			
	Rights (IPR)			1	2	ESE	50	40	40			
<b>REH403</b>	Research project (Synopsis)		-	-	2	ISE				50	50	
	phase - I					ESE				50	50	
REH405	Research Specific core course - I					ISE	50	40	40			
KE11405	(Online NPTEL course)		_		3	ESE	50	40	40			
ICE I C	TOTAL	_	-	·-	7	-	-			-	_	

ISE - In Semester Evaluation, ESE - End Semester Exam.

**Note:** For Evaluation of Online NPTEL course ISE Marks will be marks obtained by students in the assignments given by NPTEL, students who will secure NPTEL certification will be only eligible for ESE of the same course which will be conducted at institute.







# Rajarambapu Institute of Technology, Rajaramnagar

(An Autonomous Institute, affiliated to Shivaji University, Kolhapur) Curriculum Structure and Evaluation Scheme

Teaching

To be implemented for 2022-26 Batch

Department of Mechanical Engineering

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Class: Final Year B. Tech

Semester: VIII **Evaluation Scheme** 

Course Code	Course	Scheme				D'aidation ocheme					
		L	Т	P	Credits	Scheme	Theory (Marks %)		Pract	Practical (Marks %)	
							Max.	Min. for passing	Max.	Min. 1	for
REH402	Research project	-	-	-	11	ISE			. 50	50	
	phase - II					ESE			50		
-	TOTAL	_	-	-	11		_	_	-	_	

ISE = In Semester Evaluation, ESE = End Semester Exam.



