

# Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

## **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Department: Automobile Engineering

Class: S. Y. B. Tech.

SH2032   Engineering   Mathematics - III   3   1   -   4			,	Геас	hing	Scheme		E	valuatio	n Sch	eme	ester: II
SH2032   Engineering   Mathematics - III   3   1   -   4		Course	L		r   1	dits	eme	Theor	y (Mark	(s %)		
SH2032   Engineering Mathematics - III						, J	Sch	Maxi.				Min. fo
Mathematics - III		Engineering										
AE2032 Applied Thermodynamics 3 - 3 3 - 3 3 4 5 5 6 5 6 40 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7	SH2032	Mathematics III	3	1	-	4			40	40		
AE2032 Applied Thermodynamics 3 - 3 3 - 3 3 4 5 4 5 40 40 40 40 40 40 40 40 40 40 40 40 40		iviaticinatics – III								40		
AE2032   Applied Thermodynamics   3   -   3			+	+	+				40			
Thermodynamics   3	4 F2020	Applied							4			
CE2032   Engineering Mechanics   3	AE2032		3	-	-	3			40	40		
CE2032   Engineering Mechanics   3   -     3										1		
CE2032   Engineering Mechanics   3   -   3			_	+	+				40			
AE2052 Fluid Mechanics & Fluid Machinery 3 - 3	CERRORA	P										
AE2052 Fluid Mechanics & Fluid Mechanics & Fluid Machinery  AE2072 Material Science and Metallurgy  Material Science and Metallurgy  3 3   Sise   20   40   40   40   40   40   40   40	CE2032	Engineering Mechanics	3	-	-	3			40	40		
AE2052 Fluid Mechanics & Fluid Machinery												
AE2052 Fluid Mechanics & Fluid Mechanics & Fluid Machinery			_	+	+-	+			40			
AE2072   Fluid Machinery   3   -   -   3     UT2   15   40   40             AE2072   Material Science and Metallurgy   3   -   -   3     UT2   15   ESE   50   40       AE2072   Material Science and Metallurgy   3   -   -   3     UT1   15   40   40           SH2172   Environmental Science   1*   -   -   1   ISE   100   50         AE2092   Workshop Practice - I   -   -   2   1   ISE       100   50     AE2172   Engineering Mechanics   -   -   2   1   ISE       50   50     AE2112   Thermal Engg. Lab.   -   -   2   1   ISE       50   50     AE2132   Fluid Mechanics & Fluid Machinery Lab.   -   -   2   1   ISE       50   50     AE2152   Comprehensive Exam.   -   -   -   1   ESE   100   50         Open Elective - II   Choice Based Soft Skill   -   -   2   1   ISE       100   50     SH2602   Environmental Science   -   -   2   1   ISE         100   50     Environmental Science   -   -   2   1   ISE           100   50     Environmental Science   -   -   2   1   ISE	A E2052	Fluid Mechanics &										
AE2072 Material Science and Metallurgy 3 3	AE2032		3	-	-	3			40	40		
Material Science and Metallurgy   3   -   3     SE   20			1									
AE2072   Material Science and Metallurgy   3   -   3     UTI   15   40   40             SH2172   Environmental Science   1*   -   -   1   ISE   100   50           AE2092   Workshop Practice - I   -   -   2   1   ISE       100   50     CE2172   Engineering Mechanics   -   -   2   1   ISE       50   50     AE2112   Thermal Engg. Lab.   -   -   2   1   ISE     50   50     AE2132   Fluid Mechanics & Fluid Machinery Lab.   -   -   2   1   ISE     50   50     AE2152   Comprehensive Exam.   -   -   -   1   ESE   100   50         Open Elective - II   Choice Based Soft Skill   -   -   2   1   ISE       100   50     SH2602   Environmental Science   -   -   2   1   ISE       100   50     Environmental Science   -   -   2   1   ISE   100   50         100   50     COUNTY   TOTAL   TOTAL             100   50     COUNTY   TOTAL   -			+	+-	+	-			40			
Metallurgy   3   -   -   3   UT2   15   40   40         SH2172   Environmental Science   1*   -   -   1   ISE   100   50       SH2172   Environmental Science   1*   -   -   2   1   ISE       100   50     AE2092   Workshop Practice - I   -   -   2   1   ISE       100   50     CE2172   Engineering Mechanics   -   -   2   1   ISE       50   50     AE2112   Thermal Engg. Lab.   -   -   2   1   ISE       50   50     AE2112   Thermal Engg. Lab.   -   -   2   1   ISE       50   50     AE2132   Fluid Mechanics & Fluid Machinery Lab.   -   -   2   1   ISE     50   50     AE2152   Comprehensive Exam.   -   -   -   1   ESE   100   50         Open Elective - II   Choice Based Soft Skill   -   -   2   1   ISE       100   50     SH2602   Environmental Science   -   -   2   1   ISE   100   50	A E2072	Material Science and										
SH2172   Environmental Science   1*   -   -   1   ISE   100   50         AE2092   Workshop Practice - I   -   -   2   1   ISE       100   50     CE2172   Engineering Mechanics   -   -   2   1   ISE     50   50     AE2112   Thermal Engg. Lab.   -   -   2   1   ISE     50   50     AE2132   Fluid Mechanics & Fluid Machinery Lab.   -   -   2   1   ISE     50   50     AE2152   Comprehensive Exam.   -   -   -   1   ESE   100   50         Open Elective - II   Choice Based Soft Skill   -   -   2   1   ISE       100   50     SH2602   Environmental Science   -   -   2   1   ISE   100   50           TOTAL	AE20/2		3	-	-	3			40	40		
SH2172   Environmental Science   1*   -   -   1   ISE   100   50         AE2092   Workshop Practice - I   -   -   2   1   ISE     100   50     CE2172   Engineering Mechanics   -   -   2   1   ISE     50   50     AE2112   Thermal Engg. Lab.   -   -   2   1   ISE     50   50     AE2132   Fluid Mechanics & Fluid Machinery Lab.   -   -   2   1   ISE     50   50     AE2152   Comprehensive Exam.   -   -   -   1   ESE   100   50         Open Elective - II   Choice Based Soft Skill   -   -   2   1   ISE     100   50     SH2602   Environmental Science   -   -   2   1   ISE   100   50           TOTAL									40			
CE2172   Engineering Mechanics   -   -   2   1   ISE       50   50     AE2112   Thermal Engg. Lab.   -   -   2   1   ISE     50   50     AE2132   Fluid Mechanics &   -   -   2   1   ISE     50   50     AE2132   Fluid Mechanics &   -   -   2   1   ISE     50   50     AE2132   Fluid Machinery Lab.   -   -   2   1   ISE     50   50     AE2152   Comprehensive Exam.   -   -   -   1   ESE   100   50         Open Elective - II   Choice Based Soft Skill   -   -   2   1   ISE     100   50     Forgram - I   Environmental Science   -   -   2   1   ISE   100   50           Environmental Science   -   -   2   1   ISE   100   50           TOTAL   TOTAL	SH2172	Environmental Science	1*	-	-	1				)		
CE2172   Engineering Mechanics   2   1   ISE     50   50	AE2092	Workshop Practice - I	-	-	2	1	ICE					
AE2112 Thermal Engg. Lab 2 1 ISE 50 50  ESE 50 50  ES	CE2172	Engineering Mechanics										
AE2132 Fluid Mechanics & Fluid Machinery Lab 2 1 ESE 50 50 50     AE2152 Comprehensive Exam 1 ESE 100 50 50 50     Open Elective - II Choice Based Soft Skill Program - I     END Environmental Science Project   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   2 1 ISE 100 50 100 50     ENVIRONMENTAL STATES   100 50     ENVIRONMENTAL S	AE2112	Thermal Enga Lab			1		ISE					
AE2132   Fluid Mechanics &   -   2   1		Thermal Eligg. Lab.	-	-	2	1	ESE		100000			
Fluid Machinery Lab.   -   -   2   1     ESE       50   50	A E2122	Fluid Mechanics &										
Comprehensive Exam.	AE2132		-	-	2	1					50	50
Open Elective - II	150150	Comprehensive Evam			-	<del> </del>	ESE				50	50
Choice Based Soft Skill   -   -   2   1   ISE     100   50	AE2152	- I	-	-	-	1	ESE	100	50			
Project 2 1 ISE 100 50		Choice Based Soft Skill	-	-	2	1	ISE				100	50
TOTAL 16 1 12 24	SH2602	Project	-	-	2	1	ISE	100	50			
Fotal Contact Hours/week: 29 Total Creditor 24			16	1	12	24						

Total Contact Hours/week: 29

**Total Credits: 24** 

Comprehensive Exam. Courses: Applied Thermodynamics, Fluid Mechanics & Fluid Machinery, Engineering Mechanics, Material Science & Metallurgy

ISE = In Semester Evaluation, UT1 = Unit Test-I, UT2 = Unit Test-II, ESE = End Semester Examination

Note\*: Department should allot one extra lecture to Environment Science in time Table.

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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Open Elective – II: Students should select any one course form the list of Choice Based Soft Skill Program – I.

### Open Elective - II

Choice Based Soft Skill Program-I

Sr. No.	Course Name	Course Code
1.	Personal Effectiveness & Body Language	SH2592
2.	Interpersonal Skills (Work life Balance)	SH2612
3.	Leadership & Public Speaking	SH2632
4.	Innovation Tools and Methods for Entrepreneurs	SH2692
5.	German Language – Basic Level	SH2732
6.	Japanese Language – Basic Level	SH2712

#### Note:

- 1. A student has to complete any two courses out of six choices offered under Choice Based Soft Skills Programme. A course in each semester will be allocated without any repetition.
- 2. The students who have completed 'German Language Lab' or 'Japanese Language Lab' in F. Y. B. Tech should not give their choice for 'German Language Basic Level' and 'Japanese Language Basic Level'. Such students may give their choices for 'German Language Advanced Level' and 'Japanese Language Advanced Level' (batch sizes 40 each) in the S.Y. B. Tech. Sem-IV only.
- 3. The students who will select and will successfully complete 'German Language Basic Level' and 'Japanese Language Basic Level' in S. Y. B. Tech. Sem-III will by default (mandatorily) appear for Advance Levels of said courses in Semester-IV.



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### Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### Curriculum Structure and Evaluation Scheme

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Department: Automobile Engineering

Class: S. Y. B. Tech.

Course Code				<b>Feach</b>	ing Sc	heme		Ev	aluatio	n Sche	eme Sem	ester: IV
AE2022   Theory of Machines   3   -   -   3		Course	L	т	P	dits	eme				Pr	
AE2042 Heat Transfer  AE2042 Heat Transfer  AE2042 Blectric Drives and Controls  AE2082 Comprehensive Exam.  AE2182 Computer Programming C++  AE2022 Comprehensive Exam.  AE2023 Comprehensive Exam.  AE2024 Beat Transfer Lab.  AE2025 Comprehensive Exam.  AE2026 Comprehensive Exam.  AE2027 Computer Programming C++  AE2028 Comprehensive Exam.  AE2029 Comprehensive Exam.  AE2020 Comprehensive Exa						Cre	Sch	Maxi.			Maxi.	Min. for passing
AE2042 Heat Transfer  AE2042 Heat Transfer  AE2042 Blectric Drives and Controls  AE2062 Controls  AE2082 Mechanics of Materials  AE2122 Computer Stable Software Skills Laboratory - I AE2102 Workshop Practice - II AE2202 Computer Programming C++  AE2122 Computer Programming C++  AE2123 ISE Soft Ado Soft	4.00000	1										
AE2042 Heat Transfer 3 - 3   SE   SO   40   WIT   SE   SE   SO   40   WIT   SE   SE   SO   40   WIT   SE   SE   SO   SO   SO   SO   SO   SO	AE2022	Theory of Machines	3	-	-	3			40	40		
AE2042   Heat Transfer   3										40		
AE2042   Heat Transfer   3   -   3     UT1   15   40   40   -   -   -   -   -			+-	+	-	+			40			
AE2062 Electric Drives and Controls 3 - 3 UT2 15 ESE 50 40 3 UT1 15 40 40 40 3 UT1 15 ESE 50 40 40	4.500.40	1							-			
AE2062 Electric Drives and Controls 3 3   SEE   SO   40   40          AE2082 Mechanics of Materials 3 2   1   SEE   SO   40   40          AE2122 Electric Drives and Controls Lab.	AE2042	Heat Transfer	3	-	-	3			40	40		
AE2062   Electric Drives and Controls   3							_			40		
AE2062   Controls   3   -   -   3     UT1   15   40   40   -   -   -      AE2082   Mechanics of Materials   3   -   -   3     UT1   15   ESE   50   40   40   -   -      AE2122   Electric Drives and Controls Lab.   -   -   2   1   ISE   -     -     50   50    AE2142   Dynamics of Machines Lab.   -   -   2   1   ISE   -     -     50   50    AE2162   Heat Transfer Lab.   -   -   2   1   ISE   -     -     50   50    AE2182   Software Skills Laboratory - I   -   -   2   1   ISE   -     -     100   50    AE2102   Workshop Practice - II   -   -   2   1   ISE   -     -     100   50    AE2202   Comprehensive Exam.   -   -   4   2   ISE   -     -     50   50    Open Elective - III   Choice Based Soft Skill   -   -   2   1   ISE   -     -     50   50    TOTAL   12   -   16   21   ISE   -     -     -       100   50    TOTAL   12   -   16   21   ISE   -     -     -			+	+	_				40			
AE2082   Controls   3		Electric Drives and										
AE2182   Mechanics of Materials   3   -   -   3	AE2062		3	-	-	3			40	10		
AE2082   Mechanics of Materials   3		Controls								40		
AE2082   Mechanics of Materials   3			+-	+	-	-			40			
Materials   3	The state of	Mechanics of	1				100000000000000000000000000000000000000					
AE2122 Electric Drives and Controls Lab.  AE2142 Dynamics of Machines Lab.  AE2162 Heat Transfer Lab.  AE2162 Heat Transfer Lab.  AE2182 Software Skills Laboratory - I  AE2102 Workshop Practice - II  AE2102 Comprehensive Exam  II  AE2202 Computer Programming C++  Programming C++  Programming C++  Open Elective - III  Choice Based Soft Skill  Program - II  TOTAL  AE2152 ISE  SESE  SOFT 40  ISE  SOFT 40  SOFT	AE2082		3	-	-	3			40	40		
AE2122 Electric Drives and Controls Lab.  AE2142 Dynamics of Machines Lab.  AE2142 Dynamics of Machines Lab.  AE2162 Heat Transfer Lab.  AE2182 Software Skills Laboratory - I  AE2102 Workshop Practice - II 2 1 ISE 100 50  AE2102 Comprehensive Exam II  AE2202 Computer Programming C++ 4 2 ISE 50 50  Open Elective - III  Choice Based Soft Skill 2 1 ISE 50 50  Open Elective - III  Choice Based Soft Skill 2 1 ISE 50 50  TOTAL  ISE 50 50  ISE 50 50  ESE 50 50  TOTAL  ISE 50 50  TOTAL		Materials				-				40		
AE2142   Controls Lab.   -   -   2   1   ISE       50   50		Floatria Drives and	-	-	-		ESE	50	40			
AE2142 Dynamics of Machines Lab.  AE2162 Heat Transfer Lab.  AE2182 Software Skills Laboratory - I  AE2102 Workshop Practice - II 2 1 ISE 50 50  AE2102 Comprehensive Exam 1 ESE 100 50  AE2202 Computer Programming C++ 4 2 ISE 50 50  Open Elective - III  Choice Based Soft Skill 2 1 ISE 50 50  Open TOTAL 12 - 16 21	AE2122	Controls Lab.	-	_	2	1	ISE			-	100	50
AE2142   Dynamics of Machines   -   -   2   i   ESE     50   50							ISE				50	50
AE2182   Software Skills   Laboratory - I   2   1   ISE     100   50    AE2102   Workshop Practice - II   2   1   ISE     100   50    AE2202   Comprehensive Exam   1   ESE   100   50        AE2222   Computer   Programming C++   4   2   ISE     50   50    Open Elective - III   Choice Based Soft Skill   2   1   ISE     50   50    Program - II   TOTAL   12   -   16   21     100   50    TOTAL   12   -   16   21     100   50    AE2102   ISE       50   50    ISE       100   50    ISE       100   50    TOTAL   12   -   16   21    TOTAL   12   -   16   21    TOTAL   12     16   21    T	AE2142	Dynamics of Machines Lab.	-	-	2	i	ESE					7
AE2182   Software Skills   Laboratory - I   2   1   ISE     100   50    AE2102   Workshop Practice - II   2   1   ISE     100   50    AE2202   Comprehensive Exam   1   ESE   100   50        AE2222   Computer   Programming C++   4   2   ISE     50   50    Open Elective - III   Choice Based Soft Skill   2   1   ISE     50   50    Program - II   TOTAL   12   -   16   21     100   50    TOTAL   12   -   16   21     100   50    AE2102   ISE       50   50    ISE       100   50    ISE       100   50    TOTAL   12   -   16   21    TOTAL   12   -   16   21    TOTAL   12     16   21    T	AE2162	Heat Transfer Lab.	_	_	2	1	ISE				50	50
AE2182   Laboratory - I						1	ESE					
AE2202   Comprehensive Exam     -   1   ESE   100   50        AE2222   Computer     4   2   ESE       50   50    Open Elective - III   Choice Based Soft Skill   -   -   2   1   ISE       100   50    TOTAL   12   -   16   21     100   50    TOTAL   12   -   16   21       100   50    TOTAL   12   -   16   21       100   50    TOTAL   12   -   16   21		Laboratory - I	-	-	2	1	ISE					
AE2202   Comprehensive Exam     1   ESE   100   50        AE2222   Computer   Programming C++     4   2   ESE       50   50    Open Elective – III   Choice Based Soft Skill   -   -   2   1   ISE     100   50    TOTAL   12   -   16   21	AE2102	Workshop Practice - II	-	-	2	1	ISE				100	
Programming C++	AE2202		-	-	-							
Programming C++	A E2222	Computer					ISE				70	
Open Elective – III         -         -         2         1         ISE          100         50           Choice Based Soft Skill Program - II         -         -         2         1         ISE          100         50	1154444		-	-	4	2						
Choice Based Soft Skill   -   -   2   1   ISE     100   50											50	50
124 - 10   21		Choice Based Soft Skill Program - II		-	2	1	ISE				100	50
			12	-	16	21					-	

Total Contact Hours/week : 28 Total Credits : 21

Comprehensive Exam. Subjects: Theory of Machines, Strength of Materials, Heat Transfer ISE = In Semester Evaluation, UT1 = Unit Test-I, UT2 = Unit Test-II, ESE = End Semester Examination Open Elective – IV: Students should select any one course form the list of Choice Based Soft Skill Program – II.

Note: Students are required to undergo Summer Internship –I (Garage 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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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

### Open Elective - III

Choice Based Soft Skill Program- II

Sr. No.	Course Name	Course Code
1.	Personal Effectiveness & Body Language	SH2592
2.	Interpersonal Skills (Work life Balance)	SH2612
3.	Leadership & Public Speaking	SH2632
4.	Innovation Tools and Methods for Entrepreneurs	SH2692
5.	German Language – Advanced Level	SH2642
6.	Japanese Language – Advanced Level	SH2622

### Note:

- 1. A student has to complete any two courses out of six choices offered under Choice Based Soft Skills Programme. A course in each semester will be allocated without any repetition.
- 2. The students who have completed 'German Language Lab' or 'Japanese Language Lab' in F. Y. B. Tech should not give their choice for 'German Language Basic Level' and 'Japanese Language Basic Level'. Such students may give their choices for 'German Language Advanced Level' and 'Japanese Language Advanced Level' (batch sizes 40 each) in the S.Y. B. Tech. Sem-IV only.
- 3. The students who will select and will successfully complete 'German Language Basic Level' and 'Japanese Language Basic Level' in S. Y. B. Tech. Sem-III will by default (mandatorily) appear for Advance Levels of said courses in Semester-IV.



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### Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

## **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Department: Automobile Engineering

			Teach	ing S	cheme		E	valuatio	on Sch	eme	iester: V
Course Code	Course	L	Т	F	Credite	Scheme	and the second	ry (Marl	The State of the Co.	Pr	actical arks %)
		1			ػ		Maxi.		n. for ssing	Maxi.	Min. for passing
AE3012	Internal Combustion	,				ISE	20				
AE3012	Engines	1 3	-	-	3	UT1	15	40	40		
	8					UT2 ESE	15	-			
		_	+	-	+	ISE	50	40			
AE3032	A-ta-					UTI	20	-			
AE3032	Automotive Systems	3	-	-	3		15	40	40		
						UT2	15		] 40		
		-	+	+-	-	ESE	50	40			
AE3052	Automotive Electrical					ISE	20				
AE3032	& Electronics	3	-	-	3	UTI	15	40	40		
3	S 1 = 1					UT2	15	40	-		
	3		1	+-	+	ESE ISE	50	40			
AE3072	Manufacturing						20				
AE3072	Technology	3	-	-	3	UT1	15	40	40		
	83					UT2	15		1 40		
		+-	+	+	-	ESE	50	40			
	Dung Pi					ISE	20				
	Program Elective-I	3	-	-	3	UT1	15	40	40		
						UT2 ESE	15		40		
AE3232	I C Engine I -1			+	+	ISE	50	40			
ILIJZJZ	I. C. Engine Lab.	-	-	2	1	ESE				50	50
AE3252	Automobile					ISE				50	50
ILJZJZ	Engineering Lab.	-	-	2	1	ESE				50	50
AE3272			-	+	-					50	50
ALSZIZ	Workshop Practice - III	-	-	2	1	ISE ESE				50	50
					-	ISE				50	50
SH3032	Aptitude Training -I	24				UT-1	20	40			
3113032	ripittude Training -1	2*	-	-	2	UT-2	15	40	40		
						ESE	50	- 10			
SH3012	Constitution of India	2	-	-	Audit	ISE	100	50			
AE3292	Comprehensive Exam. - III	-	-	2	1	ESE	100	50			
E3312	Summer Internship - I	-	-	-	2	ISE					
	TOTAL tact Hours/week : 27	19	-	08	23					100	50

**Total Contact Hours/week** 

: 27

**Total Credits** 

: 23

Comprehensive Exam. Courses: Internal Combustion Engines, Automotive Systems, Manufacturing

ISE = In Semester Evaluation, UT1 = Unit Test-I, UT2 = Unit Test-II, ESE = End Semester Examination Note\*: Department should allot one extra lecture to Aptitude Training-I in time Table.

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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

## Curriculum Structure and Evaluation Scheme

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

### Program Elective - I:

Sr. No.	Course Code	Domain	Course
1	AE3092	Vehicle Design & Development	Automotive Styling and Design
2	AE3112	Draduation and Manufacturing	Automotive Production Systems
3	AE3132	Production and Manufacturing	Welding and Joining Technology
4	AE3152	Current & Future Technology	Hydraulics and Pneumatics
5	AE3172	Current & Future Technology	Painting Technology
6	AE3192	Product Life cycle Management	Tribology
7	7 AE3212 & Services		Recycling of Automobile



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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### Curriculum Structure and Evaluation Scheme

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

**Department:** Automobile Engineering

Class: T. Y. B. Tech.

Semester VI

		T	eachi	ng Scl	ieme		F	aluatio	n Sah	seme	ester: VI
Course Code	Course					me	Theor	y (Mark		Pra	actical rks %)
Code		L	Т	P	Credits	Scheme	Maxi.		n. for sing	Maxi.	Min. for passing
	Mali or					ISE	20		T		
AE3022	Machine & Engine	3	1	1 -	4	UT1	15	40	10		
	Design	-	1		1	UT2	15		40		
		+			-	ESE	50	40			
	Automotic E 1 11 1					ISE	20				
AE3042	Automotive Embedded	2	-	-	2	UT1	15	40	40		
	Systems	-			-	UT2	15		40		
						ESE	50	40			
	Electric & II 1 : 1					ISE	20				
AE3062	Electric & Hybrid	2	-	_	2	UT1	15	40	40		
	Vehicles	-				UT2	15		40		
		-				ESE	50	40			
						ISE	20		1		
	Program Elective - II	3	_	_	3	UTI	15	40	40		
),						UT2	15		40		
						ESE	50	40			
						ISE	20				
SH3022	Biology For Engineers	2	-	_	2	UT1	15	40	40		
					~	UT2	15		1 40		
	Electric 9 II 1 1			-	<u> </u>	ESE	50	40			
AE3202	Electric & Hybrid	_	_	2	1	ISE			-	50	50
	Vehicles Lab.		77.00		1	ESE			-	50	50
AE3222	Automotive Diagnostic	_	_	2	1	ISE			-	50	50
	Lab.	-	-	2	1	ESE		-	-	50	50
						ISE	20			30	
SH3052	Aptitude Training -II	2*	_	_	2	UT-1	15	40	40		
		-			-	UT-2	15		40		****
AE3242	Mini Project	-		2	1	ESE	50	40			
	Software Skills		-	2	1	ISE			-	100	50
AE3262	Laboratory - II	-	-	2	1	ISE			-	100	50
AE3282	Comprehensive Exam IV	-	-	-	1	ESE	100	50			
	TOTAL	14	1	08	20						

**Total Contact Hours/week** 

: 23

**Total Credits** 

: 20

Comprehensive Exam. Courses: Machine & Engine Design, Electric & Hybrid Vehicles, Automotive Embedded Systems

ISE = In Semester Evaluation, UT1 = Unit Test-I, UT2 = Unit Test-II, ESE = End Semester Examination

Note: Students are required to undergo Summer Internship – II (Industrial Training) of minimum four weeks in the vacation of Semester-VI and its evaluation will be carried out in the Semester-VII

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# Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

## **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Note\*: Department should allot one extra lecture to Aptitude Training-II in time Table.

Program Elective - II:

Program	Elective - II:		Course				
Sr. No.	Course Code	Domain					
1	AE3082	Vehicle Design & Development	Product Design and Development				
2	AE3102		Product Life Cycle Management				
		Production and Manufacturing	Jigs and Fixture				
3	AE3122		Engine & Battery Management				
4	AE3142	Current & Future Technology	Systems				
	172162	Current & Tutare Teemieregy	Automotive Sensors and Applications				
5	AE3162	1 M	Automotive Diagnostics				
6	AE3182	Product Life cycle Management & Services	Automotive Diagnosses				



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# Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

## **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Department: Automobile Engineering

Class: Final Year B. Tech.

			Teach	ing So	heme		E	valuatio	on Scho	Seme	ster: VI
Course Code	Course	L	Т	P	Credits	Scheme	Theor	ry (Marl	ks %)	Pr (Ma	actical irks %)
					, S	Sch	Maxi.	Min. for passing		Maxi.	Min. fo
A E 4010	Automotive System					ISE	20		T	<b></b>	
AE4012	Design	3	-	-	3	UT1	15	40	40		
						UT2 ESE	15	-	1 40		
		1	_	+	_	ISE	50	40			
AE4032	Vahiala Dame					UTI	20	-			
AL4032	Vehicle Dynamics	3	-	-	3	UT2	15	40	40		
						ESE	15				
			+	+	+	ISE	50	40			
	Program Elective - III	1 2			1 -	UTI	20	40			
	1 Togram Elective - III	2	-	-	2	UT2	15	40	40		
						ESE	50	40			
						ISE	20	40	-		
	Program Elective - IV	3				UT1	15	40			
	S - Sieglive IV	3	-	-	3	UT2	15	1	40		
						ESE	50	40	1 1		
						ISE	20	10			
	Open Elective - IV	3	_	_	3	UTI	15	40			
			- 580	_	3	UT2	15		40		
AE4312	Vehicle Performance	-		-		ESE	50	40			
	Evaluation & East :					ISE			-	50	50
	Evaluation & Emission Testing Lab.	-	-	2	1	ESE				50	50
	Program Elective - IV			2	,	ISE				50	50
	Lab.	-	-	2	1	ESE				50	50
	Phase -I	-	-	2	1	ISE					50
AE4702	Summer Internship - II	-	_	-	2	ISE				100	50
	TOTAL tact Hours/week : 20	14	-	6	19	IOL				100	50

**Total Contact Hours/week** 

: 20

**Total Credits** 

: 19

ISE = In Semester Evaluation, UT1 = Unit Test-I, UT2 = Unit Test-II, ESE = End Semester Examination

Sr. No.	Choice Based Track		
1	Internehin & Ducing (UD)	Phase –I Details	Course Code
-	Internship & Project (IIP)	Liberal Learning	IP4012
	Undergraduate Research Experience (URE)	URE Synopsis	
3	Entrepreneurship Development (ED)		RE4012
4	Regular Capstone Project (CP)	Prefeasibility Report	ED4012
-	regular Capsione Project (CP)	CP Synopsis	AE4332

Note: Students will work on Phase-I of choice based track allotted to them.

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# Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

## **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Program Elective - III:

Sr. No.	Elective – III:  Course Code	Domain	Course				
1	AE4052	Development	Design of Vehicle Operated Farm Equipments				
2	AE4072	Production and	Sheet Metal Manufacturing				
	AE4072 AE4092	Manufacturing	Advanced Automotive Materials				
3		Current & Future	Intelligent Transport System				
4	AE4112		Automotive HVAC				
5	AE4132	Technology					
6	AE4152	Product Life cycle Management & Services	Dealership Management				

Program Elective - IV:

	Elective – IV:	Domain	Course
Sr. No.	Course Code		El L. Element Methods
1	AE4172	venicie Design &	Finite Element Methods
2	AE4192	Development	Automotive NVH
			Reverse Engineering
3	AE4212	Production and	
4	AE4232	Manufacturing	Nano and Micro Technology
	AE4252	Current & Future	Automotive Safety
5			Automotive Emission Control
6	AE4272	Technology	
7	AE4292	Product Life cycle Management & Services	Motor Vehicle Insurance Practices

pen Elect	Branch	Course Code	Semester-VII Open Elective-IV Courses				
Sr. No.	Automobile	OE4012	Reliability Engineering				
_1		OE4032	Product Design and Development				
2	Automobile		Design Thinking & Innovation				
3	Automobile	OE4052	Metro Systems and Engineering.				
4	Civil	OE4072	Metro Systems and Engineering.				
5	Civil	OE4092	Engineering Economics.				
6	Civil	OE4112	Industrial Safety and Risk Management.				
$\frac{3}{7}$	Computer	OE4132	Cyber Laws				
8	Computer	OE4152	Database Administration				
9	Electrical	OE4172	Optimization Techniques				
	Electrical	OE4192	Electrical Materials				
10	E&TC	OE4212	Mechatronics				
11		OE4232	Open Source Software				
12	IT	OE4252	Aircraft Systems				
13	Mechanical		Supply Chain Management				
14	Mechanical	OE4272	Non-conventional Energy Sources				
15	Mechanical	OE4292	New Product Design and Development				
16	Mechanical	OE4312	New Product Design and Development				
17	MBA	OE4332	Marketing for Engineers				



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# Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

## Curriculum Structure and Evaluation Scheme

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

### Program Elective - IV Lab.:

Sr. No.	Course Code	Domain	Course
1	AE4332	Vehicle Design &	Finite Element Methods Lab.
2	AE4352	Development	Automotive NVH Lab.
3	AE4372	Production and	Reverse Engineering Lab.
4	AE4392	Manufacturing	Nano and Micro Technology Lab.
5	AE4412	Current & Future	Automotive Safety Lab.
6	AE4432	Technology	Automotive Emission Control Lab.
7	AE4452	Product Life cycle Management & Services	Motor Vehicle Insurance Practices Lab



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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Track I: Industry Internship & Projects (IIP)

Department: Automobile Engineering

Class: Final Year B. Tech.

Semester: VIII

			Teaching Scheme				Evaluation Scheme					
Sr.No	Course Code	Course				Credits	ne	Theory (Marks %)		Acres to the Acres	ctical rks %)	
	Couc		L	Т	P	C	Scheme	Maxi.	Min. for passing	Maxi.	Min. for passing	
1	IPAE4022	Online Course- I/Self Learning Course - I	-	-		3	ESE*			100	50	
2	OE4362	Engineering Management & Economics (Online Course)	,	1	-	2	ESE*			100	50	
3	IP4022	Internship & Project	_	_	_	11	ISE			50	50	
		L					ESE			50	50	
	T	otal	-	-	-	16						

**Total Contact Hours/week** 

**Total Credits** 

: 16

ISE = In Semester Evaluation, ESE = End Semester Exam

### Note:

- 1] Online or self-learning course may be:
  - A] Online Certification Course
  - B] Self-study course approved by Dean Academics All courses should be related to Industry project.
- 2] Engineering Management is Compulsory online course.
- \* Indicates that, student needs to produce certificate of online or certification course at the time of ESE. If student fails to produce this certificate, he or she will not be eligible to give ESE of Online course.
- 3] 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.



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### Rajarambapu Institute of Technology, Sakharale

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

## **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Track II: Undergraduate Research Experience (URE)

Department: Automobile Engineering

Class: Final Year B. Tech.

Semester: VIII

					ching heme		Evaluation Scheme						
Sr. No.	Course Code	Course	L	Т	P	Credits	Scheme	Theory (Marks %)			Practical (Marks %)		
			Sch	Maxi.		. for sing	Maxi.	Min. for passing					
1	RE4022	Research Methodology	3	-	-	3	UT-1 UT-2 ESE	20 15 15 50	40	40			
2	RE4062	Research Methodology Lab	-	-	2	1	ISE			-	100	50	
3	OE4362	Engineering Management & Economics (Online Course)	_	-	-	2	ESE*		_	-	100	50	
4	RE4042	Research Project	-	-	10	10	ISE			-	50	50	
		Total	3	-	12	16	ESE			-	50	50	

**Total Contact Hours/week** 

**Total Credits** 

: 16

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam Note:

1] Engineering Management & Economics is Compulsory online course.

\* For Online Certification course, student needs to produce certificate of online course at the time of ESE. If student fails to produce this certificate, he or she will not be eligible to give ESE of Online course.

All courses should be related to research project.



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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Track III: Entrepreneurship Development (ED)

Department: Automobile Engineering

Class: Final Year B. Tech.

Semester: VIII

		Teaching Scheme			Evaluation Scheme							
Sr.		Course				Credits	me	Theory (Marks %)		Contract of the Contract of th	etical rks %)	
			L	Т	P	0	Scheme	Maxi.	Min. for passing		Maxi.	Min. for passing
							ISE	20				
1	ED4102	Project Management	ect Management 3		3	UT-1	15	40	40			
							UT-2	15		100		
							ESE	50	40			
		Commercial Aspects of the Project					ISE	20	40			
2	ED4042		3	_	_	3	UT-1	15		40		
					-		UT-2	15		40		
							ESE	50	40			
3	ED4062	Entrepreneurship Development Program (EDP)	-		-	1	ISE			-	100	50
4	ED4082	Entrepreneurship Development Project	-	-	9	9	ISE			-	50	50
		1					ESE				50	
	Total				9	16						

**Total Contact Hours/week** 

: 15

**Total Credits** 

: 16

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam



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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

Track IV: Regular Capstone Project (CP)

Department: Automobile Engineering

Class: Final Year B. Tech.

Semester: VIII

Course Code		Evaluation Scheme									
	Course				its	me	Theory (Marks %)			Practical (Marks %)	
		L	T	P	Credits	Scheme	Maxi.	Min. for passing		Maxi.	Min. for passing
						ISE	20				
	Program Elective-V	3	3	3	UT1	15	40	40			
		-				UT2	15		40		
					-	ESE	50	40			
	Open Elective-V	3		-	3	ISE	20	40	40		
						UT1	15				
					3	UT2	15				
00000						ESE	50				
OE4362	Engineering Management & Economics (Online Course)	-	•	-	2	ESE*			-	100	50
AE4202	Capstone Project			8	8	ISE				50	50
				0	Ö	ESE				50	50
	TOTAL	6	-	08	16					- 50	50

Total Contact Hours/week: 14 **Total Credits** : 16

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II ESE = End Semester Exam

1] Engineering Management & Economics is Compulsory online course.

For Online Certification course, student needs to produce certificate of online course at the time of ESE. If student fails to produce this certificate, he or she will not be eligible to give ESE of Online course.



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## Rajarambapu Institute of Technology, Sakharale (An Autonomous Institute, affiliated to Shivaji University, Kolhapur)

### **Curriculum Structure and Evaluation Scheme**

(To be implemented from Academic Year 2018-19)

Rev: Auto Course Structure/RIT/02/2018-19

### Program Elective - V:

Sr. No.	Course Code	Domain	Course
1	AE4022	Vehicle Design &	Computational Fluid Dynamics
2	AE4042	Development	Experimental Stress Analysis
3	AE4062	Production and	Operations Research
4	AE4082	Manufacturing	Inventory Management
5	AE4102	Current & Future	Special Purpose Vehicle
6	AE4122	Technology	Vehicle Aerodynamics
7	AE4142	Product Life cycle	Reliability Centered Maintenance
8	AE4162	Management & Services	Transport Management

### Open Elective - V:

Sr. No.	Branch	Course Code	Semester-VIII Open Elective-V Courses
1	Automobile	OE4022	Renewable Energy Sources
2	Automobile	OE4042	Transport Management
3	Automobile	OE4062	Electric and Hybrid Electrical Vehicle
4	Civil	OE4082	Smart Cities and Sustainable Development.
5	Civil	OE4102	Material Management.
6	Computer	OE4122	Network Administration
7	Computer	OE4142	Information Technology Foundation Program
8	Electrical	OE4162	Finance Management
9	Electrical	OE4182	Electrical Installations and Maintenance
10	E&TC	OE4202	Image Processing
11	IT	OE4222	Information Technology and Business Management
12	Mechanical	OE4242	Computational Fluid Dynamics
13	Mechanical	OE4262	Entrepreneurship Development
14	Mechanical	OE4282	Hybrid Vehicles
15	Mechanical	OE4302	Maintenance Management
16	Mechanical	OE4322	Reverse Engineering and Benchmarking
17	MBA	OE4342	Finance for Engineers



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