



K.E. Society's
Rajarambapu Institute of Technology, Sakharale
(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 Computer Science & 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 (%)
CS2013	Computer Organization	3	-	-	3	ISE	20	40	-	-
						UT-1	15		-	-
						UT-2	15		-	-
						ESE	50		-	-
CS2033	Data structure & Algorithms	3	-	-	3	ISE	20	40	-	-
						UT-1	15		-	-
						UT-2	15		-	-
						ESE	50		-	-
CS2053	Digital Electronics	3	-	-	3	ISE	20	40	-	-
						UT-1	15		-	-
						UT-2	15		-	-
						ESE	50		-	-
CS2073	Discrete Mathematics	3	1	-	4	ISE	20	40	-	-
						UT-1	15		-	-
						UT-2	15		-	-
						ESE	50		-	-
CS2093	Operating Systems	3	-	-	3	ISE	20	40	-	-
						UT-1	15		-	-
						UT-2	15		-	-
						ESE	50		-	-
CS2113	Advanced C Programming Lab	2	-	2	3	ISE	-	-	50	50
						ESE	-	-	50	50
CS2133	Data structure & Algorithms Lab	-	-	4	2	ISE	-	-	50	50
						ESE	-	-	50	50
CS2153	Digital Electronics Lab	-	-	2	1	ISE	-	-	100	50
CS2173	Technical Aptitude-I	-	-	2	1	ESE	-	-	100	50
	Open Elective-II Choice-based Soft Skills Program - I	-	-	2	1	ISE	-	-	100	50
Total		17	1	12	24					

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

Total Contact Hours/week : 30

Total Credits : 24

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

Technical Aptitude Courses : CS2013, CS2033, CS2053, CS2073, CS2093, CS2113





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Open Elective-II

Sr. No.	Subject Name		Course Code
1.	Choice Based Soft Skill Program-I & II	Personal Effectiveness & Body Language	SH2593
2.		Interpersonal Skills (Work life Balance)	SH2613
3.		Leadership & Public Speaking	SH2633
4.		Innovation Tools and Methods for Entrepreneurs	SH2693
5.		German Language – Basic Level	SH2733
6.		Japanese Language – Basic Level	SH2713

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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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 (%)	
CS2003	Computer Networks	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	-		-	
						ESE	50	40		-	-
CS2023	Formal Language & Automata Theory	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	-		-	
						ESE	50	40		-	-
CE2263	Engineering Mechanics	2	-	-	2	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	-		-	
						ESE	50	40		-	-
SH2023	Engineering Mathematics - III	3	1	-	4	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	-		-	
						ESE	50	40		-	-
CS2043	Computer Networks Lab	-	-	2	1	ISE	-	-		50	50
						ESE	-	-		50	50
CS2063	Object Oriented Programming Lab	2	-	4	4	ISE	-	-		50	50
						ESE	-	-		50	50
CE2283	Engineering Mechanics Lab	-	-	2	1	ISE	-	-		50	50
	Open Elective-III Choice-based Soft Skills Program - II	-	-	2	1	ISE	-	-		100	50
SH2173	Environmental Science	1*	-	-	1	ISE	50	40	40	-	-
						ESE	50	40		-	-
SH2603	Environmental Science Project	-	-	2	1	ISE	-	-		100	50
CS2083	Technical Aptitude-II	-	-	2	1	ESE	-	-		100	50
Total		14	1	14	22						

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

Total Contact Hours/week : 29

Total Credits : 22

Technical Aptitude Courses : CS2003, CS2023, SH2023, CS2063

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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Open Elective-III

Sr. No.	Subject Name		Course Code
1.	Choice Based Soft Skill Program-I & II	Personal Effectiveness & Body Language	SH2593
2.		Interpersonal Skills (Work life Balance)	SH2613
3.		Leadership & Public Speaking	SH2633
4.		Innovation Tools and Methods for Entrepreneurs	SH2693
5.		German Language – Advanced Level	SH2643
6.		Japanese Language – Advanced Level	SH2623

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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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 (%)	
CS3013	Database Management Systems	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	40	40	-	-
						ESE	50			-	-
CS3033	System Software	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	40	40	-	-
						ESE	50			-	-
CS3053	Design & Analysis of Algorithms	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	40	40	-	-
						ESE	50			-	-
	Program Elective-I	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	40	40	-	-
						ESE	50			-	-
CS3133	JAVA Programming Lab	2	-	4	4	ISE	-	-	50	50	
						ESE			50	50	
CS3153	Database Management Systems Lab	-	-	2	1	ISE	-	-	50	50	
						ESE			50	50	
CS3173	Technical Aptitude-III	-	-	2	1	ESE	-	-	100	50	
SH3033	Scholastic Aptitude-I	2*	-	-	2	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15	40	40	-	-
						ESE	50			-	-
SH3011	Indian Constitution	2	Audit			ISE	100	50	(P/N)	-	-
CS3193	Summer Internship (4 Weeks)	-	-	-	2	ISE	-	-	100	50	
Total		18	-	8	22						

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Total Contact Hours/week : 26
Total Credits : 22





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Technical Aptitude Courses: CS3013, CS3033, CS3053

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

Program Elective-I

Sr. No.	Course Code	Domain	Course
1	CS3073	Database and Algorithms	Data Mining
2	CS3093	Systems and Intelligence	Soft Computing
3	CS3113	Advanced IT Technologies	Information Security





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Class: T. Y. B. Tech

Semester: VI

Course Code	Course	Teaching scheme			Credits	Evaluation Scheme					
		L	T	P		Scheme	Theory (Marks)		Practical (Marks)		
							Max	Min for Passing (%)	Max	Min for Passing (%)	
	Program Elective-II	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15			-	-
						ESE	50			-	-
	Open Elective-IV	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15			-	-
						ESE	50			-	-
CS3063	Software Engineering	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15			-	-
						ESE	50			-	-
SH3021	Biology for Engineers	3	-	-	3	ISE	20	40	40	-	-
						UT-1	15			-	-
						UT-2	15			-	-
						ESE	50			-	-
SH304	Psychology for Engineers	1*	-	-	1	ISE	50	40	40	-	-
						ESE	50			-	-
CS3083	Capstone Project phase-I	-	-	2	2	ISE	-	-	-	100	50
CS3103	.NET Programming Lab	2	-	2	3	ISE	-	-	-	50	50
						ESE	-	-	-	50	50
SH3043	Scholastic Aptitude-II	2*	-	-	2	ISE	20	40	40	-	-
						UT1	15			-	-
						UT2	15			-	-
						ESE	50			-	-
CS3123	Technical Aptitude-IV	-	-	2	1	ESE	-	-	-	100	50
CS3143	Mobile Application Development Lab	2	-	2	3	ISE	-	-	-	50	50
						ESE	-	-	-	50	50
Total		19	-	8	24						

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

Total Contact Hours/week : 27

Total Credits : 24

Technical Aptitude Courses : CS3013, CS3033, CS3053, CS3063

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





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Program Elective-II

Sr. No.	Course Code	Domain	Course
1	CS3003	Database and Algorithms	Advanced Algorithms
2	CS3023	Systems and Intelligence	Optimization Techniques
3	CS3043	Advanced IT Technologies	Linux Operating System

Open Elective-IV

Sr. No.	Branch	Course Code	Open Elective-IV Courses
1	Automobile	OE3023	Reliability Engineering
2	Automobile	OE3043	Renewable Energy Sources
3	Civil	OE3063	Environmental Impact Assessment
4	Civil	OE3083	Material Management
5	Computer	OE3103	Network Administration
6	Computer	OE3123	Information Technology Foundation Program
7	E&TC	OE3143	Mechatronics
8	Electrical	OE3163	Engineering Materials
9	Electrical	OE3181	Industrial Drives
10	CS&IT	OE336	Neural Network and Deep Learning
11	CS&IT	OE3221	Cyber Forensics
12	MBA	OE3243	Marketing for Engineers
13	Mechanical	OE3263	Aircraft Systems
14	Mechanical	OE3283	Supply Chain Management
15	Mechanical	OE3301	New Product Design and Development
16	Mechanical	OE3323	Entrepreneurship Development
17	Mechanical	OE3341	Research Methodology





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Class: Final Year B. Tech

Semester: VII

Course Code	Course	Teaching scheme			Credits	Evaluation Scheme									
		L	T	P		Scheme	Theory (Marks)		Practical (Marks)						
							Max	Min for Passing (%)	Max	Min for Passing (%)					
CS4013	Machine Learning	3	-	-	3	ISE	20	40	40	-	-				
						UT-1	15			-	-				
						UT-2	15			-	-				
						ESE	50			40	-	-			
	Program Elective-III	3	-	-	3	ISE	20	40	40	-	-				
						UT-1	15			-	-				
						UT-2	15			-	-				
						ESE	50			40	-	-			
	Program Elective-IV	3	-	-	3	ISE	20	40	40	-	-				
						UT-1	15			-	-				
						UT-2	15			-	-				
						ESE	50			40	-	-			
	Program Elective-V	3	-	-	3	ISE	20	40	40	-	-				
						UT-1	15			-	-				
						UT-2	15			-	-				
						ESE	50			40	-	-			
CS4213	Cloud Computing	3	-	-	3	ISE	20	40	40	-	-				
						UT-1	15			-	-				
						UT-2	15			-	-				
						ESE	50			40	-	-			
	Machine Learning Lab	-	-	2	1	ISE	-	-	50	50					
						ESE	-	-	50	50					
						Program Elective-IV Lab	-	-	2	1	ISE	-	-	50	50
											ESE	-	-	50	50
CS4313	Capstone Project Phase-II	-	-	4	4	ISE	-	-	100	50					
						ESE	-	-	100	50					
CS4333	Web Technology Lab	2	-	2	3	ISE	-	-	50	50					
						ESE	-	-	50	50					
Total		17	-	10	24										

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Total Contact Hours/week : 27
Total Credits : 24





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Program Elective-III

Sr. No.	Course Code	Domain	Course
1	CS4033	Database and Algorithms	Big Data Analytics
2	CS4053	Systems and Intelligence	Natural Language Processing
3	CS4073	Advanced IT Technologies	Blockchain Technology

Program Elective-IV

Sr. No.	Course Code	Domain	Course
1	CS4093	Database and Algorithms	Parallel Programming
2	CS4113	Systems and Intelligence	Artificial Intelligence
3	CS4133	Advanced IT Technologies	Internet of Things

Program Elective-IV Lab

Sr. No.	Course Code	Domain	Course
1	CS4253	Database and Algorithms	Parallel Programming Lab
2	CS4273	Systems and Intelligence	Artificial Intelligence Lab
3	CS4293	Advanced IT Technologies	Internet of Things Lab

Program Elective-V

Sr. No.	Course Code	Domain	Course
1	CS4153	Database and Algorithms	Advanced Database System
2	CS4173	Systems and Intelligence	Computer Vision
3	CS4193	Advanced IT Technologies	Wireless Networks





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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 (%)	for
OE4381	Finance for Engineers (Online Course)	2	-	-	2	ISE	25	40	40	-	-
						ESE	75	40		-	-
OE4361	Engineering Management & Economics (Online Course)	2	-	-	2	ISE	25	40	40	-	-
						ESE	75	40		-	-
IP4023	Internship & Project	-	-	-	8	ISE	-	-	50	50	50
						ESE	-	-			
	TOTAL	4	-	-	12						

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

Total Contact Hours/week : 04

Total Credits : 12

Note:

1] Weekly Contact hours are not mentioned for IP4023 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 II: Undergraduate Research Experience (URE)

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 (%)
OE4381	Finance for Engineers (Online Course)	2	-	-	2	ISE	25	40	40	-	-
						ESE	75	40			
OE4361	Engineering Management & Economics (Online Course)	2	-	-	2	ISE	25	40	40	-	-
						ESE	75	40		-	-
RE4043	Research Project	-	-	8	8	ISE	-	-		50	50
						ESE	-	-		50	50
	TOTAL	4	-	8	12						

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

Total Contact Hours/week : 12

Total Credits : 12

Note:

1] 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

Course Code	Course	Teaching Scheme			Credits	Evaluation Scheme					
		L	T	P		Scheme	Theory (Marks)		Practical (Marks)		
							Max	Min for Passing (%)	Max	Min for Passing (%)	
ED4103	Project Management	2*	-	-	2	ISE	20	40	40	-	-
						UT-1	15				
						UT-2	15				
						ESE	50	40			
ED4043	Commercial Aspects of the Project	2*	-	-	2	ISE	20	40	40	-	-
						UT-1	15				
						UT-2	15				
						ESE	50	40			
ED4063	Entrepreneurship Development Program (EDP)	-	-	-	1	ISE	-	-	-	100	50
ED4083	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 Examination

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.

