



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 Electronics and Telecommunication 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 (%)	
SH2113	Engineering Mathematics –III	3	1	-	4	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15	40	40	----	----
						ESE	50			----	----
EC2013	Electronic Devices	3	--	--	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15	40	40	----	----
						ESE	50			----	----
EC2033	Digital System Design	3	--	--	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15	40	40	----	----
						ESE	50			----	----
EC2053	Analog Communication	3	--	--	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15	40	40	----	----
						ESE	50			----	----
EC2073	Network Theory	3	--	--	3	ISE	20	40	40	----	----
						UT1	15			----	----
						UT2	15	40	40	----	----
						ESE	50			----	----
EC2093	Electronic Devices Lab	--	--	2	1	ISE	---	---	50	50	
						ESE	---	---			
EC2113	Digital System Design Lab	--	--	2	1	ISE	----	----	50	50	
						ESE	----	----			
EC2133	Analog Communication Lab	--	--	2	1	ISE	----	----	50	50	
						ESE	----	----			
EC2153	Technical Aptitude-I	-	-	2	1	ESE	----	----	100	50	
	Open Elective- II	-	-	2	1	ISE	-	-	100	50	
	Choice Based Soft Skill Program-I	-	-	2	1						
	TOTAL	15	01	1	21						

ISE = In Semester Evaluation, UT1 = Unit Test-1, UT2 = Unit Test-2, ESE = End Semester Examination

Total Contact Hours/week : 26

Total Credits : 21

Technical Aptitude Courses: Engineering Mathematics –III, Electronic Devices, Digital System Design, Analog Communication, Network Theory.





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Department of Electronics and Telecommunication Engineering

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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Department of Electronics and Telecommunication 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 (%)	
CE2263	Engineering Mechanics	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC202	Linear Integrated Circuit and Applications	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC2043	Microcontrollers	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC2063	Digital Communication	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC2083	Signals and System	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
SH2173	Environmental Science	1*	-	-	1	ISE	50	40	40	----	----
						ESE	50			40	----
CE2283	Engineering Mechanics Lab	-	-	2	1	ISE	---	----		100	50
EC210	Linear Integrated Circuit and Applications Lab	--	--	2	1	ISE	---	----		50	50
						ESE	---	----		50	50
EC2123	Microcontrollers Lab	--	--	2	1	ISE	---	----		50	50
						ESE	----	----		50	50
EC2143	Digital Communication Lab	--	--	2	1	ISE	---	----		50	50
						ESE	----	----		50	50
SH2603	Environmental Science Project	-	-	2*	1	ISE	---	----		100	50
EC2163	Technical Aptitude-II	-	-	2	1	ESE	---	----		100	50
	Open Elective- III	-	-	2	1	ISE	-	-	--	100	50
	Choice Based Soft Skill Program-II										
	TOTAL	16	-	14	23						

ISE = In Semester Evaluation, UT1 = Unit Test-1, UT2 = Unit Test-2, ESE = End Semester Examination

Total Contact Hours/week : 30

Total Credits : 23

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

Technical Aptitude Courses : Linear Integrated Circuit and Applications, Microcontrollers, Digital Communication, Signals and System.





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Department of Electronics and Telecommunication Engineering

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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Department of Electronics and Telecommunication Engineering

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 (%)	
EC3013	Digital Signal Processing	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC3033	Control Systems	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC3053	CMOS VLSI Design	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC3073	Electromagnetic Waves & Antenna Theory	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
	Program Elective-I	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC3213	Digital Signal Processing Lab using MATLAB	--	--	2	1	ISE	---	---		50	50
						ESE	---	---		50	50
EC3233	CMOS VLSI Design Lab	--	--	2	1	ISE	---	---		50	50
						ESE	---	---		50	50
EC3253	Antenna Lab	--	--	2	1	ISE	---	---		100	50
						ESE	---	---		50	50
EC3273	Object Oriented Programming using C++ Lab	--	--	2	1	ISE	---	---		100	50
						ESE	---	---		50	50
EC3293	Technical Aptitude-III	-	-	2	1	ESE	---	---		100	50
SH3033	Scholastic Aptitude I	2*	-	-	2	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC3313	Summer Internship** (4 Weeks)	-	-	-	2	ISE	---	---	---	100	50
SH3011	Indian Constitution	2	-	-	Audit	ISE	100	50	(P/N)		
	TOTAL	19	-	10	24						

ISE = In Semester Evaluation, UT1 = Unit Test-1, UT2 = Unit Test-2, ESE = End Semester Examination

Total Contact Hours/week : 29

Total Credits : 24

Note*: One extra lecture to be allotted to Aptitude Training-I in time table.

Technical Aptitude Course: Digital Signal Processing, Control Systems, CMOS VLSI Design, Electromagnetic Waves & Antenna Theory.

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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Department of Electronics and Telecommunication Engineering

Program Elective-I

Sr.No	Course Code	Domain	Course
1.	EC3093	Communication	Information Theory and Coding
2.	EC311		Wireless Communication
3.	EC313	VLSI and Signal	VLSI testing
4.	EC315	Processing	Soft Computing
5.	EC317	Embedded	Automotive Electronics
6.	EC319	Systems and Automation	Advanced Microcontrollers Architecture





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Department of Electronics and Telecommunication Engineering

Class: T. Y. B. Tech

Semester: VI

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 (%)	
EC3023	Power Electronics	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC3043	Machine Learning	3	--	--	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
	Program Elective-II	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
	Open Elective-IV	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
SH3021	Biology for Engineers	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
EC3183	Technical Aptitude-IV	-	-	2	1	ESE	---	---	100	50	
EC3203	Power Electronics Lab	--	--	2	1	ISE	---	---	50	50	
						ESE	---	---	50	50	
EC3223	Electronics Product design Lab	--	--	2	1	ISE	---	---	50	50	
						ESE	---	---	50	50	
EC3243	Python Programming Lab	--	--	2	1	ISE	---	---	50	50	
						ESE	---	---	50	50	
EC3263	Capstone Project phase-I	-	-	2	2	ISE	---	---	100	50	
SH304	Psychology for Engineers	1*	-	-	1	ISE	50	40			
						ESE	50	40			
SH3043	Scholastic Aptitude II	2*	-	-	2	ISE	20	40	40	---	----
						UT1	15			---	---
						UT2	15			---	---
						ESE	50			40	---
	TOTAL	18		10	24						

ISE = In Semester Evaluation, UT1 = Unit Test-1, UT2 = Unit Test-2, ESE = End Semester Examination

Total Contact Hours/week : 28

Total Credits : 24

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

Technical Aptitude Courses: Digital Signal Processing, Power Electronics, CMOS VLSI Design, Electromagnetic Waves & Antenna Theory, Control systems.





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Program Elective – II

Sr.No	Course Code	Domain	Course
1.	EC306	Communication	Microwave Theory and Techniques
2.	EC308		Wireless Sensor Network
3.	EC310	VLSI and Signal Processing	RTL Simulation and Synthesis with PLDs
4.	EC312		Digital Image Processing
5.	EC314	Embedded Systems and Automation	Robotics
6.	EC316		Numerical Processors

Open Elective-IV

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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Department of Electronics and Telecommunication Engineering

Class: Final Year B. Tech

Semester: VII

Semester: VII											
Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory Marks		Practical Marks		
							Max.	Min. for passing (%)	Max.	Min. for passing (%)	
EC4013	Computer Network	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40	---	---	
EC4031	Artificial Intelligence	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40	---	---	
	Program Elective-III	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40	---	---	
	Program Elective-IV	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40	---	---	
	Program Elective-V	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40	---	---	
		3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40	---	---	
EC4533	Computer Network lab	-	-	2	1	ISE	---	---	100	50	
	Program Elective-IV Lab	-	-	2	1	ISE	---	---	50	50	
						ESE	---	---	50	50	
EC4553	Capstone Project Phase-II	-	-	4	4	ISE	--	---	100	50	
						ESE	--	---	100	50	
	TOTAL	15	0	8	21						

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

ISE = In Semester Evaluation, UT1 = Unit Test-1, UT2 = Unit Test-2, ESE = End Semester Examination

Total Contact Hours/week : 23

Total Credits : 21





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Program Elective-III

Sr.No	Course Code	Domain	Course
1.	EC4053	Communication	Satellite Communication
2.	EC407		Multimedia communication
3.	EC409	VLSI and Signal Processing	Computer Vision
4.	EC4111		Mixed Mode VLSI Design
5.	EC4133	Embedded Systems and Automation	Embedded Linux
6.	EC415		Advanced Power Electronics

Program Elective-IV

Sr.No	Course Code	Domain	Course
1.	EC417	Communication	Radar and Optical Fiber Communication
2.	EC4191		Internet of Things
3.	EC4213	VLSI and Signal Processing	System Verilog
4.	EC4233		Biomedical Electronics
5.	EC425	Embedded Systems and Automation	Embedded System Design
6.	EC4273		Programmable Logic Controller & SCADA

Program Elective-V

Sr.No	Course Code	Domain	Course
1.	EC4291	Communication	Network Security
2.	EC431		Pattern Recognition
3.	EC4332	VLSI and Signal Processing	Low Power VLSI
4.	EC435		Digital Signal Processing For Wireless Communication
5.	EC4372	Embedded Systems and Automation	Computer Architecture
6.	EC4392		Electric Drives and Control

Program Elective-IV Lab

Sr.No	Course Code	Domain	Course
1.	EC441	Communication	Radar and Optical Fiber Communication
2.	EC443		Internet of Things
3.	EC4453	VLSI and Signal Processing	System Verilog
4.	EC447		Biomedical Electronics
5.	EC449	Embedded Systems and Automation	Embedded System Design
6.	EC4513		Programmable Logic Controller & SCADA





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Department of Electronics and Telecommunication Engineering

Track I: Industry Internship & Project (IIP)

Class: Final Year B. Tech

Semester: VIII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credit s	Schem e	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		---	---
IP4023	Internship & Project	-	-	-	8	ISE	---	----		50	50
						ESE	---	---		50	50
	TOTAL	4	-	-	12						

ISE = In Semester Evaluation, ESE = End Semester Exam

Total Contact Hours/week : 04

Total Credits : 12

Note:

1] Weekly Contact hours are not mentioned for IP4023 course 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

Semester: VIII											
Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credit s	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, ESE = End Semester Exam

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

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, UT1 = Unit Test-1, UT2 = Unit Test-2, 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.

