

# 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 Information Technology

Rev:CSIT/RIT/04/2020-24

Class: S. Y. B. Tech

Semester: III

				achi chen			E	valuatio	n Schen	me	
Course Code	Course				its	ne	The	ory (Ma	rks)		actical (arks)
		L	Т	P	Credits	Scheme	Max	Min. % Marks for Passing		Max.	Min. % Marks for Passing
200000000000000000000000000000000000000						ISE	20				
CI2011	Discrete Mathematics	3	1	,	4	UTI	15	40	40		
	1				1	UT2	15		1 40		
		+	-	+	-	ESE	50	40			
				1	1	ISE	20	1			
CI2031	Computer Networks	3			3	UTI	15	40	40		
						UT2	15		40		
		-				ESE	50	40	]		
	Data Structures and					ISE	20				
CI2051	1	3			3	UTI	15	40	40		
	Algorithms			1		UT2	15		40		
		+-		-		ESE	50	40			
						ISE	20				
CI2071	Digital Electronics	3			3	UTI	15	40	40		
						UT2	15		40		
						ESE	50	40			-
CI2091	Computer Networks Lab			2	1	ISE		_			50
272000000 SG1900				-	,	ESE				50	50
-	Data Structures and					ISE				50	50
CI2111	Algorithms Lab	-		4	2	ESE				50	50
CI2131	Digital Electronics Lab			_		ISE				50	50
CIZIOI	Digital Electronics Lab			2	1	ESE			_	50	50
CI2151	Object Oriented Design			200		ISE			_	50	
C12131	and Programming Lab	3	-	2	4	ESE				50	50
CI2171	Technical Aptitude-I	-	22			ISE			-	50	50
		-	-	2	1	ESE				50	50
	Open Elective-II										
	Professional Skills		_	2	1	ISE		-		60	50
	Development and Foreign Languages - I					ESE				40	50
	TOTAL	15	01	14	23						

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

Total Contact Hours/week

: 30

**Total Credits** 

: 23

Technical Aptitude Courses: Discrete Mathematics, Computer Networks, Data Structures and Algorithms, Digital Electronics





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### Open Elective-II

Sr. No.	Course Code	Course Name							
1.	SH2633	Professional Leadership Skills							
2.	SH2613	Interpersonal Skills ['Jeevanvidya' for Work Life Balance]							
3.	SH2693	Innovation Tools and Methods for Entrepreneurs							
4.	SH2593	Personal Effectiveness and Body Language							
5.	SH2733	German Language - Basic Level							
6.	SH2713	Japanese Language - Level III							

### An Important Notes:

- 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. Sem-I will remain the same with next levels in Sem-III and IV. (No new entries in S.Y.B.Tech Sem.-III)







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Department of Information Technology

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Class: S. Y. B. Tech

Semester: IV

				achi hen			E	valuatio	n Schei	me	
Course Code	Course				its	ne	The	ory (Ma	rks)		actical Iarks)
Couc		L	Т	P	Credits	Scheme	Max	Min. % Marks for Passing		Max.	Min. % Marks for Passing
	Mathematics for Data					ISE	20				
SH2043		3	1		4	UTI	15	40	40		
	Analytics					UT2	15	ļ	] 40		
		-	+-	+-	-	ESE	50	40			
			1		ł	ISE	20	40			
CI2021	Automata Theory	3	1		4	UTI	15		40		
						UT2	15				
						ESE	50	40			
						ISE	20				
CI2041	Software Engineering	3			3	UTI	15	40	40		
	January 2 de la constante de l		UT2	15		40					
		-	-	-		ESE	50	40			
						ISE	20				
CI2061	Computer Organization	3	-		3	UT1	15	40	40		
	3					UT2	15		40		
						ESE	50	40			
	Engineering Mechanics					ISE	20				
CE2263		2			2	UTI	15	40			
CLLLOS	Engineering Weenames				4	UT2	15	1	40		
						ESE	50	40			
CI2081	Python lab	2	T	2	3	ISE		-		50	50
CIZOOI		2		2	3	ESE		_		50	50
CE2283	Engineering Mechanics Lab			2	1	ISE				100	50
GYOLOL	T1-1-1 4 4 1 1 17					ISE				50	50
CI2101	Technical Aptitude-II			2	1	ESE		-	-	50	50
SH2173	Environmental Science	1*				ISE	50	40			
3112173		1*			1	ESE	50	40	40		
SH2603	Environmental Science Project			2	I	ISE				100	50
	Open Elective- III Professional Skills Development and Foreign	-	-	2	1	ISE ESE				60	50
	Languages - II TOTAL	17	2	10	24					40	50
	ester Evaluation IIT-1 = Unit Test			10	24						

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

Total Contact Hours/week : 29 Total Credits : 24

Technical Aptitude Courses: Mathematics for Data Analytics, Automata Theory, Software Engineering, Computer Organization

Internship 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.

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





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### Open Elective-III

Sr. No. Course Code		Course Name							
1.	SH2633	Professional Leadership Skills							
2.	SH2613	Interpersonal Skills ['Jeevanvidya' for Work Life Balance]							
3.	SH2693	Innovation Tools and Methods for Entrepreneurs							
4.	SH2593	Personal Effectiveness and Body Language							
5.	SH2643	German Language - Advanced Level							
6.	SH2623	Japanese Language - Level IV							

### An Important Notes:

- 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. Sem-I will remain the same with next levels in Sem-III and IV. (No new entries in S.Y.B.Tech Sem.-III)







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Class: T. Y. B. Tech

Semester: V

										mester		
	1	T	eachi	ng S	Schen	ne		E	Cvaluatio	on Sche	me	
Course Code	Course					its	ne	Th	eory (Ma	ırks)		ractical Marks)
Code		L	Т	,	P	Credits	Scheme	Max	Ma	in. % rks for ssing	Max.	Min. % Marks for Passing
120000000000000000000000000000000000000							ISE	20		T		rassing
CI3011	Operating Systems	3		-	- 1 3	3	UTI	15	40	10		****
							UT2	15		40		
1985 - 1985 - 198		+-	+-	+	+		ESE	50	40			
_	Database Management						ISE	20	4	40		
CI3031	Systems	3			.   3	3	UTI	15	40			
	Systems	1					UT2	15		40		
			-	4	_		ESE	50	40	7		
	Design and Analysis of		1		1		ISE	20				
CI3051	Algorithms	3			3		UTI	15	40	40		
	Aigorumus					-	UT2	15		40		
		+	-	+	+-	-	ESE	50	40			
	D	1			1	-	ISE	20				****
	Program Elective-I	3			3	-	UTI	15	40	40		
		1 1				-	UT2	15		40	()	
CYALAL	TATE OF	-	-	-	+-	-	ESE	50	40			
CI3131	JAVA Programming Lab	3	-	2	4	-	ISE		-		50	50
	Date	-		-	+	-	ESE				50	50
CI3151	Database Management Systems Lab	-	-	2	1	-	ISE		-	-	50	50
							ESE				50	50
CI3171	Operating Systems Lab			2	1		ISE		-	_	50	50
					_		ESE			-		50
CITALORA							ISE	20				
SH3033	Scholastic Aptitude I	2*			2	-	UTI	15	40	40		
						-	UT2	15	-	40		
CYDIA	Summer Internship			_		+	ESE	50	40			
CI3191	(4 Weeks)			-	2		ISE		_	.	100	50
CI3211	Technical Aptitude-III			2	I		ISE				50	50
SH3011	Indian Constitution				,		ESE				50	50
3113011		2		-	Audit		ISE	100	50	(P/N)		
1	TOTAL	19	00	08	23	-				200 00 00 00 00 00 00 00 00 00 00 00 00		,

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

Total Contact Hours/week

: 27

**Total Credits** 

: 23

Technical Aptitude Courses: Operating Systems, Database Management Systems, Design and analysis of algorithms

Note\*: Department should allot one extra lecture to Scholastic Aptitude – I in time Table.





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## **Program Elective 1**

Sr.No.	Course Code	Course							
1.	CI3071	Organizational Management Behavior							
2.	CI3091	IPR and Cyber Law							
3.	CI3111	Software Modeling and Design							
4.	CI323	Internetworking Protocols							







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Class: T. Y. B. Tech

Semester: VI

	T	Te	achir	10 5	cheme		10.		nester		
Course	Course	10	Lini	18 30		) ie		valuatio ory (Ma		Pi	actical Iarks)
Code	Course	L	L T		Credits	Scheme	Max	Ma	in. % rks for ssing	Max.	Min. % Marks for Passing
				-		ISE	20				
CI3021	Information Security	3			3	UTI	15	40	40		
	-					UT2 ESE	15	10	- 10		
		_		+		ISE	50 20	40	-		
	Duament El di XX					UTI	15	10			
	Program Elective-II	3			3	UT2	15		40 40		
			1			ESE	50				
				1		ISE	20	40			
	Open Elective-IV	3			3	UTI	15	40			
	Open Elective-IV	3		1 277	)	UT2	15	1 70	40		
						ESE	50	40	1		
	1					ISE	20				
SH3021	Biology for Engineers	3			3	UTI	15	40	40		
	23					UT2	15		40		
				_		ESE	50	40			
CI3181	Front End Web	2		4	4	ISE				50	50
	Technology Lab	-		-	4	ESE				50	50
CI3201	Mobile Application	2		2	3	ISE		-		50	50
	Development Lab					ESE		-		50	50
						ISE	20				
SH3063	Scholastic Aptitude II	2*		1_		UTI	15	40			
3113003	Scholastic Aprillide II	2.			2	UT2	15		40		
						ESE	50	40			
CI3241	Technical Aptitude-IV		_	2	1	ISE		-	-	50	50
	Thursday Thursday					ESE		-			50
CI3221	Capstone Project phase-I	-	-	2	2	ISE	-	-		100	50
SH304	Psychology for Engineers	1*	-	_	1	ISE	50	40	40	0 -	
						ESE	50	40	40		
IOE I O	TOTAL	19	00	10	25		1		-		

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

Total Contact Hours/week

**Total Credits** 

: 25

Technical Aptitude Courses

: C Programming, C++ Programming, Compiler Design

Note\*: Department should allot one extra lecture to Scholastic Aptitude II and Psychology for

Engineers in time table.



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### **Program Elective II**

Sr.No. Course Code		Course Name
1.	CI3041	Data Mining
2.	CI3061	Sensor Network
3.	CI3081	Machine Learning Algorithms
4.	CI3101	Computer Graphics

### 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
14	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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Sr. No.	Branch	Course Code	Open Elective-IV Courses	
18.	Civil	OE338	Disaster management	
19.	CS&IT	OE340	Cyber security	









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Department of Information Technology

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Class: Final Year B. Tech.

				-				Sei	mester	: VII	
		L		eachi chem			E	valuatio	n Sche	me	
Course Code	Course				its	ne	The	ory (Ma	Practical (Marks)		
		L	T	P	Credits	Scheme	Max	Ma	in. % rks for ssing	Max.	Min. 9 Mark for Passin
						ISE	20				1 433111
CI4011	Cloud Computing	3			3	UTI	15	40			
						UT2	15		40		
	-	+-	+		-	ESE	50	40	7		
	Parameter 1	1		1		ISE	20				
	Program Elective III	3			3	UTI	15	15 15			
			1	1		UT2	15		40		
			_			ESE	50	40			
						ISE	20				
	Program Elective-IV	3			3	UTI	15	40			
						UT2	15		40		
		-	-			ESE	50	40			
		1				ISE	20	40	40		
	Program Elective-V	3			3	UT1	15				
						UT2	15				
		-				ESE	50	40			
CI4191	Web Technology Lab	2		4	4	ISE				50	50
		-		-		ESE				50	50
	Program Elective Lab			2	1	ISE				50	50
		$\vdash$				ESE			-	50	50
CI4271	Capstone Project Phase-II			4	4	ISE			-	100	50
						ESE		_		100	50
	TOTAL ester Evaluation, UT-1 = Unit Tes	14	00	10	21						

Total Contact Hours/week

**Total Credits** 

: 24 : 21







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### **Program Elective III**

Sr.No.	Course Code	Course Name
1.	CI4031	Soft Computing
2.	CI4051	Human Computer Interaction
3.	CI4071	Software Testing
4.	CI431	Software Project Management

### **Program Elective IV**

Sr.No.	Course Code	Course Name
1.	CI4091	Internet of Things
2.	CI4111	Computer Vision
3.	CI4131	Data Analytics
4.	CI433	Bioinformatics

## Program Elective V

Sr.No.	Course Code	Course
1.	CI4151	Blockchain Technology
2.	CI4171	Virtual Reality and Augmented Reality
3.	CI4211	Parallel Computing
4.	CI4231	Big Data

## Program Elective Lab

Sr.No.	Course Code	Course Name
1.	CI4251	R Programming Lab
2.	CI4291	Asp. Net MVC Lab
3.	CI435	PHP





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# Track I: Industry Internship & Projects (IIP)

Class: Final Year B. Tech Semester: VIII Teaching **Evaluation Scheme** Scheme Course Course Theory Credits Practical Code Scheme (Marks %) T L P (Marks %) Max. Min. for Max. Min. for passing passing Finance for OE4381 Engineers ISE 25 2 2 40 (Online Course) ESE 75 40 ---Engineering Management & **ISE** 25 40 OE4361 2 2 **Economics** 40 ESE 40 (Online Course) 75 ISE IP4023 Internship & Project 50 50 8 **ESE** 50 50 TOTAL 4 12

ISE = In Semester Evaluation, ESE = End Semester Examination

Total Contact Hours/week

: 4

Total Credits

: 12

#### Note:

- 1] Weekly Contact hours are not mentioned in 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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Department of Information Technology

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# Track II: Undergraduate Research Experience (URE)

Class: Final Year B. Tech Semester: VIII Teaching **Evaluation Scheme** Scheme Course Course Theory Code Credits Practical Scheme (Marks %) (Marks %) L T P Max. Min. for Max. Min. for passing passing Finance for OE4381 Engineers 25 ISE 40 2 2 40 (Online Course) ESE 75 40 Engineering Management & ISE 25 40 OE4361 2 2 **Economics** 40 ESE 40 (Online Course) 75 **ISE RE4043** Research Project 50 8 8 50 ESE 50 50 TOTAL 4 8

ISE = In Semester Evaluation, 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.







# Rajarambapu Institute of Technology, Sakharale

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Department of Information Technology

Rev:CSIT/RIT/04/2020-24

# Track III: Entrepreneurship Development (ED)

Class:	Final Year B. Tech				_,_	_				Se	mest	er: VIII
	Course		Teaching Scheme				Evaluation Scheme					
Course Code					Landite	Cleants	me	Theory (Marks %)		Practical (Marks %)		
		L	Т	P			Scheme	Max	f	lin. or ssing	Max	Min. for
						IS	SE	20	pas	Sing		passing
ED4103	Project Management	2*	-	-	2	U	Γ-1	15	40			
	j sammgament	12		-	12	บา	r-2	15		40		
			_		_	ES	SE	50	40			
	Commercial Aspects of the Project		-		1	IS	Е	20				
ED4043		2*		_	2	UT	-1	15	40			
		2		-	2	UT	-2	15		40		
						ES	E	50	40			1
ED4063	Entrepreneurship Development Program (EDP)	-	-	-	1	ISI	E		-		100	50
	Entrepreneurship Development Project	-	-	7	7	ISF					50	50
	Total	4	-	7	12		-		1	1	-	

ISE = In Semester Evaluation, UT-1 = Unit Test-1, UT-2 = 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.





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### Rajarambapu Institute of Technology, Sakharale

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### Syllabus

To be implemented from 2022-23

## Department of Information Technology

Class:- T.Y. B. Tech	Semester-VI
Course Code: <b>OE440</b>	Course Name: Cyber Security

L	T	P	Credits
3	0		3

Course Description: Cybersecurity is the practice of protecting systems from cyber-attacks. It is important because effective cybersecurity reduces the risks of cyber-attacks. Cybersecurity is a high-demand but changing field. Since hackers are trying to find new ways to access, change, or delete sensitive information and extort money, users must be aware of cyber threats and comply with basic cybersecurity principles. This course will help in understanding cybercrimes, their laws & various techniques for investigating different cybercrimes. This course also focuses on advanced issues in e-banking and financial crimes.

### Course Learning Outcomes:

After successful completion of the course, students will be able to,

- 1. Describe fundamental terms in cybercrime legislation.
- 2. Compare various cyber-attacks & offences.
- 3. Analyze Indian IT Act 2000 & amendments in IT Act.
- 4. Asses social networks and security issues related to social media platforms.
- 5. Apply a strategy for creating awareness about cyber security for e-banking and legal issues among the social community.
- 6. Devise the best practices and policies in various layers of cyberspace.

Prerequisite: Basic Computer Technology

Eligible Students: Students of all branches except CSE and IT

Course	Content	
Unit No	Description	Hrs
1.	Introduction to Cyber security  Defining Cyberspace and Overview of Computer and Web-technology, Architecture of cyberspace, Communication and web technology, Internet, World wide web, Internet infrastructure for data transfer and governance,	06







K.E. Society's
Rajarambapu Institute of Technology, Sakharale
(An Autonomous Institute, Affiliated to Shivaji University, Kolhapur)
Syllabus
To be implemented from 2022-23

# Department of Information Technology

	1-	
	Internet society, Regulation of cyberspace, Concept of cyber security, Issues and challenges of cyber security.	
2.	Cyber Crime and Cyber law Classification of cybercrimes, Common cybercrimes - cybercrime targeting computers and mobiles, cybercrime against women and children, financial frauds, social engineering attacks, malware and ransomware attacks, viruses and worms, Cybercriminal's modus-operandi, Reporting of cybercrimes, Remedial and mitigation measures, Legal perspective of cybercrime.	06
3.	The Indian IT Act Cybercrime and Legal landscape around the world, cyber laws, challenges faced in designing cyber laws, IT Ac: Cyber Crime (Section 65-74), Amendments to the Indian IT Act 2000.	05
4.	Social Media Overview and Security Introduction to Social networks. Types of Social media, Social media platforms, Social media monitoring, Hashtag, Viral content, Social media marketing, Social media privacy, Challenges, opportunities and pitfalls in online social networks, Security issues related to social media, Flagging and reporting of inappropriate content, Laws regarding posting of inappropriate content, Best practices for the use of Social media, Case studies.	06
5.	E - Commerce and Digital Payments  Definition of E-Commerce, Main components of E-Commerce, Elements of E-Commerce Security, E-Commerce threats, E-Commerce security best practices, Introduction to digital payments, Components of digital payment and stake holders, Modes of digital payments- Banking Cards, Unified Payment Interface (UPI), e-Wallets, Unstructured Supplementary Service Data (USSD), RBI guidelines on digital payments and customer protection in unauthorized banking transactions. Relevant provisions of Payment Settlement Act,2007.	07
6.	Digital Devices Security, Tools and Technologies for Cyber Security End Point device and mobile phone security, Password policy, Security patch management, Data backup, Downloading and management of third party software, Device security policy, Cyber Security best practices, Significance of host firewall and Ant-virus, Management of host firewall and Anti-virus, Wi-Fi security, Configuration of basic security policy and permissions.	06







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

To be implemented from 2022-23

## Department of Information Technology

#### References -

### Text Books:

- Sumit Belapure and Nina Godbole, "Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives", Wiley India Pvt. Ltd.
- Henry A. Oliver, "Security in the Digital Age: Social Media Security Threats and Vulnerabilities", Create Space Independent Publishing Platform. Pearson.

### Reference Books:

- James Graham, Ryan Olson, "Cyber Security Essentials", Rick Howard CRC Press, Taylor & Francis Group.
- Cyber Crime Impact in the New Millennium, by R. C Mishra, Auther Press.
- Kumar K, "Cyber Laws: Intellectual Property & E-Commerce Security" Dominant Publishers.



