Savitribai Phule Pune University Faculty of Science & Technology



Curriculum

For

First Year
Bachelor of Engineering
(Choice Based Credit System)

(2019 Course)

(With Effect from Academic Year 2019-20)

A'I TESTED

ALL AND S M O

Dr. M. S. GAIKWAD
PRINCIPAL
Sinhgad Institute of Technology, Lonavela

	TABLE -	Firs	t Eng	ginee	ring _	Struc	ture	for Se	mest	er-I				
Course Code	Course Name		achir chem rs/W	e	E	xamir		ı Sche arks	eme a	ınd		Cre	dits	
30		Theory	Practical	Tutorial	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
107001	Engineering Mathematics-I	03	:eue.	01	30	70	25	#	-	125	03		01	04
107002/ 107009	Engineering Physics / Engineering Chemistry	04	02	1440	30	70	(patin)	25		125	04	01		05
102003	Systems in Mechanical Engineering	03	02	-	30	70		25		125	03	01	(Mark)	04
103004 / 104010	Basic Electrical Engineering / Basic Electronics Engineering	03	02		30	70		25		125	03	01	10000	04
110005/ 101011	Programming and Problem Solving / Engineering Mechanics	03	02		30	70	5.F.	25		125	03	01	3	04
111006	Workshop [@]	55	02	1070	:575:			25		25		01		01
	Total	16	10	01	150	350	25	125	-	650	16	05	01	22
101007	Audit Course 1&	02					Envir	onmei	ntal S	tudies-	-I			
Inducti	on Program: 2 weeks at	the b	egini	ning c	of sem	ester-	I and	1 wee	k at t	he beg	innin	g of s	emes	ter-II
	TABLE -	2 Firs	t En	ginee	ring_	Stru	cture	for S	emest	ter-II				
Course Code	Course Name	S	eachi chem irs/W		E	xamir		n Sche arks	eme a	ınd		Cre	dits	
		Theory	Practical	Tutorial	ISE	ESE	TW	PR	OR	Total	ТН	PR	TUT	Total
107008	Engineering Mathematics-II	04		01	30	70	25	-	77	125	04	-	01	05
107002/ 107009	Engineering Physics/ Engineering Chemistry	04	02	44	30	70		25		125	04	01		05
103004 /	Basic Electrical										02	0.1		0.4
104010	Engineering / Basic Electronics Engineering	03	02	42	30	70	8442	25	2222	125	03	01	da en	04
	Engineering / Basic Electronics Engineering Programming and Problem Solving /	1	02		30	70		25		125	03	01	See	04
104010 110005/ 101011 102012	Engineering / Basic Electronics Engineering Programming and Problem Solving / Engineering Mechanics Engineering Graphics ¹⁰	03) ****					01		
104010 110005/ 101011	Engineering / Basic Electronics Engineering Programming and Problem Solving / Engineering Mechanics	03	02		30	70) ****	25		125	03	01		04
104010 110005/ 101011 102012	Engineering / Basic Electronics Engineering Programming and Problem Solving / Engineering Mechanics Engineering Graphics Project Based	03	02	01	30	70 50	2	25		125 75	03	01)1	04
104010 110005/ 101011 102012	Engineering / Basic Electronics Engineering Programming and Problem Solving / Engineering Mechanics Engineering Graphics Project Based Learning§	03	02 02 04	 01 02	30	70 50 - 330	 25 75 Envir	25 50 125 onmer	 ntal S	125 75 75	03 01 15	01 02 05	01 02	04 02 02

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Description

The control technology transvala

ATTESTED

Dr. M. S. GAIKWAD
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Siningad Institute of Technology, Lonavala

Savitribai Phule Pune University Faculty of Science & Technology



Curriculum/Syllabus for

Second Year
Bachelor of Engineering
(Choice Based Credit System)
Mechanical Engineering and Automobile Engineering
(2019 Course)

Board of Studies - Automobile and Mechanical Engineering
(With Effect from Academic Year 2020-21) ESTED

DAVENCE SALES

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Sinhgad Institute of Technology, Lonavala

Savitribai Phule Pune University

Board of Studies - Automobile and Mechanical Engineering Undergraduate Program - Automobile Engineering & Mechanical Engineering (2019 pattern)

Course	Course Name	Sc (H	her oui	ne rs/	Ex	ami ar	natio	_		ne	(Cre	dit	t
Code	Course Ivaine	TH	PR	TUT	ISE	ESE	TW	PR	OR	TOTAL	THI	PR	TUT	TOTAL
	Semester-	Ш		W	-	Ti Ti								
202041	Solid Mechanics	4	2	-	30	70	-	50		150		1	-	5
202042	Solid Modeling and Drafting	3	2	-	30	70	: = :	50	-	150	3	1	9#3	4
	Engineering Thermodynamics	3	2	-	30	70	-		25	125		1	-	4
202044	Engineering Materials and Metallurgy	3	2	<u> </u>	30	70	25	30		125		1	=	4
203156	Electrical and Electronics Engineering	3	2	1	30	70	25		-	125	3	1		4
202045	Geometric Dimensioning and Tolerancing Lab	-	2	-	-	-	25	1	722	25	4	1	: <u>:::</u> :	1
202046	Audit Course - III	-	-	-	_	*	-	300	X#	-	-	-	-	-
	Total	16	12	-	150	350	75	100	25	700	16	6	-	22
	Semester-									40.7				
	Engineering Mathematics - III	3	-	1	30	70	25	- 4	-	125	_	-	1	4
	Kinematics of Machinery	3	2	П	30	70		-	25	125	_	1		4
	Applied Thermodynamics	3	2	-	30	70	:=:	=	25	125		1	-	4
	Fluid Mechanics	3	2	7	30	70	-	-	25	125	_	1	-	4
	Manufacturing Processes	3	-	-	30	70	-	-	*	100	3	-	-	3
	Machine Shop	1999	2	7	2:41	-	50			50		1	-	1
	Project Based Learning - II	-	4	_	-		50	=		50	=	2		2
202053	Audit Course - IV	-	-	-	-	-	-	-	-		ž		*	-
	Total	15	12	1	150	350	125	-	75	700	15	6	1	22

Abbreviations: TH: Theory, **PR**: Practical, **TUT**: Tutorial, **ISE**: In-Semester Exam, **ESE**: End-Semester Exam, **TW**: Term Work, OR: Oral

Note: Interested students of SE (Automobile Engineering and Mechanical Engineering) can opt for any one of the audit course from the list of audit courses prescribed by BoS (Automobile and Mechanical Engineering)

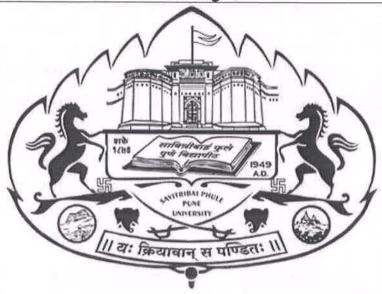
Instructions

- Practical/Tutorial must be conducted in three batches per division only.
- Minimum number of required Experiments/Assignments in PR/ Tutorial shall be carried out as mentioned in the syllabi of respective subjects.
- Assessment of tutorial work has to be carried out as a term-work examination. Term-work Examination at second year of engineering course shall be internal continuous assessment only.
- Project based learning (PBL) requires continuous mentoring by faculty throughout the semester for successful completion of the tasks selected by the students per batch. While assigning the teaching workload of 2 Hrs/week/batch needs to be considered for the faculty involved. The Batch needs to be divided into sub-groups of 5 to 6 students. Assignments / activities / models/ projects etc. under project based learning is carried throughout semester and Credit for PBL has to be awarded on the basis of internal continuous assessment and evaluation at the end of semester.
- Audit course is mandatory but non-credit course. Examination has to be conducted at the end of Semesters for award of grade at institute level. Grade awarded for audit course shall not be calculated for grade point & CGPA.

 ATTESTED

Dr. M. S. GAIKWAD PRINCIPAL

Savitribai Phule Pune University, Pune



Faculty of Science and Technology

Board of Studies **Electrical Engineering**

Syllabus
Second Year Electrical Engineering
(2019 Course)

(w.e.f. AY: 2020-21)

ATTESTED

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Sinhgad Institute of Technology, Lonavala

Savitribai Phule Pune University

Syllabus: Second Year (SE) Electrical Engineering (2019 Course) w.e.f. AY:2020-2021

					EME	STEF	k-I							
Course Code	Courses Name	10	eachin Schem	_	Exa	ıminati	on Sch	eme a	and M	arks		C	redits	
Code		TH	PR	TUT	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
207006	Engineering Mathematics-III	03	55	1	30	70	**			100	03			03
203141	Power Generation Technologies	03	- 53		30	70	3		-	100	03	311	F	03
203142	Material Science	03	04#		30	70	25	-	25	150	03	02		05
203143	Analog and Digital Electronics	03	02		30	70		50	444	150	03	01	5 44 5	04
203144	Electrical Measurement & Instrumentation	03	04#	,	30	70	25	25	STATE	150	03	02		05
203150	Applications of Mathematics in Electrical Engineering		02*				25		1 19 <u>115</u> 1	25	: :	01		01
203151	Soft Skill		02			===	25	8 7115 8		25		01	TITO:	01
203152	Audit Course-III		5440	144			1414		(+++=			Grad	e: PP/	NP
	Total	15	14		150	350	100	75	25	700	15	07		22

				5	SEME	STER	-II							
Course	Courses Name		eachir Schem	~	Exa	aminati	ion Sch	eme a	and M	arks		Cı	redits	
Code		TH	PR	TUT	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
203145	Power System-I	03			30	70		-		100	03	****	777	03
203146	Electrical Machines-I	03	02	: 	30	70	-	50	Ħ5.	150	03	01	500	04
203147	Network Analysis	03	02	<u></u> 1	30	70	25	-3		125	03	01		04
203148	Numerical Methods & Computer Programming	03	02	3 440):	30	70	(Approx.)	25		125	03	01	2 111	04
203149	Fundamental of Microcontroller and Applications	03	04\$: -	30	70	25		25	150	03	02	***	05
203152	Project Based Learning		04	1997.0	***		50			S AU S:	##	02		
203153	Audit Course-IV					***	_ ==== 1 _==============================					Grad	e: PP/	NP
	Total	15	14		150	350	100	75	25	700	15	07		22

* - Lab sessions on application of Mathematics in Electrical Engineering using professional software.

Abbreviation: TH: Theory, PR: Practical, TUT:Tutorial, ISE: Insem Exam, ESE: End Sem Exam, TW: Term Work, OR: Oral

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Size of reposition is estimate there in

^{# -} Practical section will comprises of two Part: a) PART A: 2 hours per week: Regular curriculum listed practical total 12 numbers out of which conduction of 8 numbers will be mandatory b) PART B: 2 Hours a week: Practical/case studies/assignments to enable active learning based on advances related to subject to bridge gap between curriculum and enhance practical knowledge required in field.

^{\$ -} Practical section will comprises of two Part: a) PART A: 2 hours per week: Regular curriculum listed practical total 12 numbers out of which conduction of 8 numbers will be mandatory b) PART B: 2 Hours a week: IOT application in Electrical Engineering using microcontroller and GSM module to bridge gap between curriculum and enhance application knowledge.

Savitribai Phule Pune University Faculty of Science and Technology



Syllabus for

S.E (Electronics / Electronics & Telecommunication Engineering)

DAW DAD & M. KO

(Course 2019)

(w.e.f. June 2020)

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Dr. M. S. GAIKWAD PRINCIPAL

Savitribai Phule Pune University, Pune S.E. (Electronics / E&TC Engineering) 2019 Course (With effect from Academic Year 2020-21)

Semester-III

Course Code	Course Name		achir che m rs/W	e	E	xamin	ation Ma		ne a	nd		Cre	dit	
		Theory	Practical	Tutorial	In-Sem	End-Sem	TW	PR	OR	Total	ТН	PR	TUT	Total
207005	Engineering Mathematics III	04	2	01	30	70	25	-	-	125	04	-	01	05
204181	Electronic Circuits	03	Ħ	= 0	30	70	10			100	03		17	03
204182	Digital Circuits	03	-	- =:	30	70	-		-	100	03	7. T.	=	03
204183	Electrical Circuits	03	-		30	70	. ** :	+	-	100	03	(#)	1	03
204184	Data structures	03	-	397	30	70	-	-	200	100	03	(#)	*	03
204185	Electronic Circuit Lab	1-3	02	-	7.0	(\=	-	50	i. 🕶 i	50	.√€.	01	-	01
204186	Digital circuits Lab		02					50		50		01		01
204187	Electrical Circuit Lab	-	02	S#E		2.22	25	(2)		25	:=	01	-	01
204188	Data Structures Lab	125	02	744	<u>ar</u>	-	重()	-	25	25	12	01	91	01
204189	Electronic Skill Development	•	02	- 1	-	-	25	-	(#	25	-	01	-	01
204190	Mandatory Audit Course 3 &	-	-	-					-	-	-	-		#
Total		16	10	01	150	350	75	100	25	700	16	05	01	22

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Savitribai Phule Pune University, Pune S.E. (Electronics / E&TC Engineering) 2019 Course

(With effect from Academic Year 2020-21)

Semester-IV

				Seme	ester-	-IV								
Course Code	Course Name	S	eachir Schem urs/W	e	E	xami	nation Ma	Sche rks	me a	nd		Cre	dit	
	- (-)	Theory	Practical	Tutorial	In-Sem	End-Sem	TW	PR	OR	Total	TH	PR	TUT	Total
204191	Signals & Systems	03	-	01	30	70	25	-	-	125	03	-	01	04
204192	Control Systems	03	-		30	70		(#)		100	03	-	8	03
204193	Principles of Communication Systems	03	-	-	30	70	7.5	•		100	03	A TO	1	03
204194	Object Oriented Programming	03	-		30	70	15	-		100	03	15.	=	03
204195	Signals & Control System Lab		02				50		7	50		01		01
204196	Principle of Communication Systems Lab		02	-	-		-	50	-	50	5 55	01		01
204197	Object Oriented Programming Lab	1=1	02	-	-	-	1	:=:	50	50	(#E)	01	+	01
204198	Data Analytics Lab		02						25	25		01		01
204199	Employability Skill Development	02	02	-	-	1	50) =	#8	50	02	01	22	03
204200	Project Based Learning 1] -	04				50		90	50		02		02
204201	Mandatory Audit Course 4&	-	: (+):	: + :		-	*	+	141	-	(=)	-	-	546
	Total	14	14	01	120	280	175	50	75	700	14	07	01	22

Abbreviations:

In-Sem: In semester

End-sem: End semester

TH: Theory

TW: Term Work

PR: Practical

OR: Oral

TUT: Tutorial

Note: Interested students of S.E. (Electronics/E&TC) can opt any one of the audit course from the list of audit courses prescribed by BoS (Electronics & Telecommunications Engineering)

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Faculty of Science and Technology Savitribai Phule Pune University Maharashtra, India



http://unipune.ac.in

Curriculum for **Second Year of Computer Engineering** (2019 Course) (With effect from 2020-21)

ATTESTED

Dr. M. S. GAIKWAD **PRINCIPAL**

Savitribai Phule Pune University Second Year of Computer Engineering (2019 Course) (With effect from Academic Year 2020-21)

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Savitribai Phule Pune University Second Year of Information Technology Engineering (2019 Course)

(With effect from Academic Year 2020-21)

				S	emes	ter-II					- 11/15	- 1		
Course Code	Course Name	S	achir chem rs/W	e	Ex	amin	ation Ma	Sche irks	me a	nd		Cre	dit	
		Theory	Practical	Tutorial	IN-Sem	End-Sem	WT	PR R	OR	Total	Ŧ	PR	TUT	Total
214441	Discrete Mathematics	03	-	01	30	70	25	(#)		125	03		01	04
214442	Logic Design and Computer Organization	03	6 4 6	:=:	30	70	1	120	4:	100	03	: =	_	03
214443	Data Structures and Algorithms	03	*	-	30	70	2	74	-	100	03	-	11	03
214444	Object Oriented Programming	03	; .	: - :	30	70		120	500	100	03	-	-	03
214445	Basics of Computer Network	03	-	9#	30	70	¥	0#	9=0	100	03	-	-	03
<u>214446</u>	Logic Design Computer Organization Lab	8	02	(-		(j.)	25	25		50		01	-	01
214447	Data Structures and Algorithms Lab	9	04		•		25	25	•	50	•	02	*	02
214448	Object Oriented Programming Lab	-	04	- 196	7-0) (#)	25	25		50	(#:	02	-	02
214449	Soft Skill Lab	-	02	-	-	-	25	-	-	25	-	01	-	01
<u>214450</u>	Mandatory Audit Course 3	-	1=1	-	-		27	-	:#0	34 8	No	n Cred	dit	, ≅ S
	Total	15	12	01	150	350	125	75		700	15	06	01	22

Abbreviations:

TH: Theory

TW: Term Work

PR: Practical

OR: Oral

TUT: Tutorial

Note: Students of S.E. (Information Technology) can opt any one of the audit course from the list of audit courses prescribed by BoS (Information Technology)

#Mandatory Audit Course 3:

214450A- Ethics and values in IT

214450B - Quantitative Aptitude and Logical Reasoning

214450C- Language Study- Japanese- Module

214450D-Cyber Security and Law

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Home

Savitribai Phule Pune University, Pune Second Year of Information Technology Engineering (2019 Course) (With effect from Academic Year 2020-21)

				Sem	neste	r-IV								
Course Code	Course Name	S	eachir chem irs/W	e	Ex	kamin	nation Ma	Sche arks	me a	ind		Cree	dit	
		Theory	Practical	Tutorial	IN-Sem	End-Sem	ΤW	PR	OR	Total	Ŧ	PR	TUT	Total
207003	Engineering Mathematics- III	03	-	01	30	70	25	-	-	125	03	3 717 1	01	04
214451	Processor Architecture	03	-	02	30	70	-	•	-	100	03	-	•	03
214452	Database Management System	03	1-0	10 0	30	70	-	-	-	100	03	-	-	03
214453	Computer Graphics	03	-	-	30	70	-	-	-	100	03	-	•	03
214454	Software Engineering	03	-	-	30	70	-	-	-	100	03	-	:=:	03
214455	Programming Skill Development Lab	5.	02	18.	3 * 3	188	25	25	; = ;	50	\$ = 3	01	-	01
214456	Database Management System Lab		04		:==:	•	25	25		50		02	2	02
214457	Computer Graphics Lab	-	02	-	:•:	-	i=0	25	3#3	25	1000	01	-	01
214458	Project Based Learning	100 ## T	04	3	(#.)	-	50	*	*	50	16	02	•	02
214459	Mandatory Audit Course 4	-	-	-	-	-	æ::	-	-	-	No	n Cred	dit) =)
	Total	15	12	01	150	350	125	75		700	15	06	01	22

Abbreviations:

TH: Theory

TW: Term Work

PR: Practical

OR: Oral

TUT: Tutorial

Note: Students of S.E. (Information Technology) can opt any one of the audit course from the list of audit courses prescribed by BoS (Information Technology)

#Mandatory Audit Course 4:

214459A - Water Supply and Treatment

214459B - Language Study- Japanese- Module II

214459C - Waste Management and Pollution Control

214459D - Intellectual Property Rights

SE (Information Technology) Syllabus (2019 Course)

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1

SAVITRIBAI PHULE PUNE UNIVERSITY



FACULTY OF ENGINEERING

SYLLABUS FOR T. E. (ELECTRICAL **ENGINEERING)**

(2015 course)

WITH EFFECT FROM YEAR 2017-2018

ATTESTED

Savitribai Phule Pune University **FACULTY OF ENGINEERING**

T.E. Electrical Engineering (2015 Course)

(w.e.f. 2017-2018)

					9	EMESTE	R-I						
	C. I.			Teachii Schem			Examina	ation Sc	heme			C	redit
Sr. No	Subject Code	Subject Title	TL			Р	P				Total	TH/	PR+OR
NO	Code	1 to "	Th	Pr.	Tu.	In Sem	End Sem	TW	PR	OR	Marks	TU	
1	311121	Industrial and Technology Management	03	55	72	30	70	3000	850	>300	100	03	2 911 5
2	303141	Advance Microcontroller and its Applications	04	02		30	70	(42)	722	50	150	04	01
3	303142	Electrical Machines II	04	02	7.70	30	70	1,555.0	50	S##C	150	04	01
4	303143	Power Electronics	04	02	**	30	70		50		150	04	01
5	303144	Electrical Installation, Maintenance and Testing	03	02		30	70	50	2-		150	03	01
6	303145	Seminar and Technical Communication		02	#X	2847	248	50	199	(ees)	50	70 2	01
	303152	Audit Course III											
	то	TAL	18	10		150	350	100	100	50	750	18	05

					SEI	MESTER-II							
			Teach	ing Sch	neme		Examinati	on Sche	me			С	redit
Sr.	Subject					P	P				Total	TH/	PR+OR
No.	Code	Subject Title	Th	Pr.	Tu	In Sem	End Sem	TW	PR	OR	Marks	TU	
1.	303146	Power System II	04	02	35	30	70	ne.	50	5.7	150	04	01
2,	303147	Control System I	04	02	15	30	70	201	22	50	150	04	01
3,	303148	Utilization of Electrical Energy	03		75	30	70	==		##:	100	03	144
4.	303149	<u>Design of</u> <u>Electrical</u> <u>Machines</u>	04	02	===	30	70	25		50	175	04	01
5.	303150	Energy Audit and Management	03	02	ww.	30	70	25	H	==	125	03	01
6.	303151	<u>Electrical</u> <u>Workshop</u>	25	02		en:	#E.	50		e#:	50	**:	01
	303153	<u>Audit Course IV</u>											
	To	otal	18	10		150	350	100	50	100	750	18	05

Th: Theory lectures hours/week

Practical hours/week Pr: Tu:

Tutorial hours/week

Term work TW:

PR: Theory

OR:

Paper- In semester and End PP:

Semester

ATTESTED

T.E. Electrical Engineering (2015 Course) - Savitribai Phule Pune University

2

Dr. M. S. GAIKWAD PRINCIPAL Sinhgad Institute of Technology, Lonavala

Savitribai Phule Pune University

FACULTY OF ENGINEERING



Structure for the

T.E (Electronics and Telecommunication Engineering)

(2015 Course)

(w.e.f. June 2017)

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PRINCIPAL
Sinhgad Institute of Technology, Londwala

Page **1** of **48**

Third Engineering-E&TC (2015 Course)

(With effect from Academic Year 2017-18)

				Sem	ester	I						
Course Code	Course	Teachi Hour	ng Sch s / We		Seme	ster E		natio irks	n Sch	eme of		edits
		Theory	Tuto rials	Practi cals	In- Sem	End- Sem	TW	PR	OR	Total	TH/TW	PR+OR
304181	Digital Communication	4	-	() in the second	30	70				100	4	7411
304182	Digital Signal Processing	4	-		30	70	===			100	4	<u> </u>
304183	Electromagnetics	3	1	-	30	70	==	==		100	4	
304184	Microcontrollers	3	3000		30	70		22		100	3	1
304185	Mechatronics	3		-	30	70		52	=	100	3	1
304191	Signal Processing and Communications Lab (DC/DSP)	are to	· · · · · · · · · · · · · · · · · · ·	4		2001	50	50		100		2
304192	Microcontrollers and Mechatronics Lab	***	-	4	##	-	50	50		100		
304193	Electronics System Design	2	श ्चात र	2	-	:	350	-	50	50	2	1
	Audit Course 3	***	-	115	==	-	-		· • • • • • • • • • • • • • • • • • • •		177	T
	Total	19	1	10	150	350	100	100	50	750		
								T	otal (Credits	2	25

Abbreviations:

TH: Theory

DE MUSICANION

OR: Oral

TW: Term Work PR: Practical

Note: Interested students of T.E (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

ATTESTED

Third Engineering-E&TC (2015 Course)

(With effect from Academic Year 2017-18)

Course Code	Course	Teachi Hour	ng Scl s / We		Semo	ester I	Exam of M		on S	cheme	Credit		
		Theory	Tutor ials	Practi cals		End- Sem	TW	PR	OR	Total	TH/T W	PR +OR	
304186	Power Electronics	4		_	30	70	+			100	4	-	
304187	Information Theory, Coding and Communication Networks	4	-		30	70	411	3	24	100	4		
304188	Business Management	3			30	70		7777.5		100	3	-	
306189	Advanced Processors	4	44		30	70	410	5 440 5		100	4	1	
304190	System Programming and Operating Systems	3			30	70		See		100	3	1	
304194	Power and ITCT Lab	-		4	::		50	50	1,000	100	****	2	
304195	Advanced Processors and System Prograaming Lab			4			50	50		100			
304196	Employability Skills and Mini Project	2		2			-	-	50	50	2	1	
	Audit Course 4	-			3 110				जार			-//\	
	Total	20		10	150	350	100	100	50	750			

Abbreviations:

TH: Theory
TW: Term Work

ı Work

OR: Oral PR: Practical

Note: Interested students of T.E (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

Page **3** of **48**

ATTESTED

Savitribai Phule Pune University, Pune Bachelor of Computer Engineering

Program Educational Objectives

- 1. To prepare globally competent graduates having strong fundamentals, domain knowledge, updated with modern technology to provide the effective solutions for engineering problems.
- 2. To prepare the graduates to work as a committed professional with strong professional ethics and values, sense of responsibilities, understanding of legal, safety, health, societal, cultural and environmental issues.
- 3. To prepare committed and motivated graduates with research attitude, lifelong learning, investigative approach, and multidisciplinary thinking.
- 4. To prepare the graduates with strong managerial and communication skills to work effectively as individual as well as in teams.

Program Outcomes

Students are expected to know and be able -

- 1. To apply knowledge of mathematics, science, engineering fundamentals, problem solving skills, algorithmic analysis and mathematical modeling to the solution of complex engineering problems.
- 2. To analyze the problem by finding its domain and applying domain specific skills
- 3. To understand the design issues of the product/software and develop effective solutions with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- 4. To find solutions of complex problems by conducting investigations applying suitable techniques.
- 5. To adapt the usage of modern tools and recent software.
- 6. To contribute towards the society by understanding the impact of Engineering on global aspect.
- 7. To understand environment issues and design a sustainable system.
- 8. To understand and follow professional ethics.
- 9. To function effectively as an individual and as member or leader in diverse teams and interdisciplinary settings.
- 10. To demonstrate effective communication at various levels.
- 11. To apply the knowledge of Computer Engineering for development of projects, and its finance and management.
- 12. To keep in touch with current technologies and inculcate the practice of lifelong learning.

Program Specific Outcomes (PSO)

A graduate of the Computer Engineering Program will demonstrate-

PSO1: Professional Skills-The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying.

PSO2: Problem-Solving Skills- The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.

PSO3: Successful Career and Entrepreneurship-The ability to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.

Syllabus for Third Year Computer Engineering

Dr. M. S. GAIKWAE PRINCIPAL ATTESTED

#3/64

Dr. M. S. GA!KWAD

PRINCIPAL
Sinhgad institute of Technology, Lonavala

Savitribai Phule University of Pune Third Year Computer Engineering (2015 Course) (with effect from 2017-18)

			100	Semest	er I							
Course Code	Course		ching Schours / We		Ex	amination	Schen	ne and	Mar	ks	Cre	dit
		Theory	Tutorial	Practical	In-Sem	End-Sem	TW	PR	OR	Total	TH/ TUT	PR
310241	Theory of Computation	03		212	30	70	1.22			100	03	
310242	Database Management Systems (DBMS)	03	24	22	30	70) (18 1	15 11 12 1		100	03	
310243	Software Engineering & Project Management	03	20		30	70		D==	144	100	03	
310244	Information Systems & Engineering Economics	03	***		30	70	-		220	100	03	
310245	Computer Networks (CN)	04	-5777		30	70	7775	77		100	04	
310246	Skills Development <u>Lab</u>	-	02	04		· · · · · · · · · · · · · · · · · · ·	50	***	50	100	02	02
310247	DBMS Lab		-	04		144	25	50	-	75		02
310248	CN Lah			02	**		25	50	: *** :	75	HH.	01
									Total	Credi	18	05
	Total	16	02	10	150	350	100	100	50	750	2	23
310249	Audit Course 3					4).					Gr	ade

310249-Audit Course 3 (AC3) Options:

AC3-I: Cyber Security

AC3-II: Professional Ethics and Etiquettes

AC3-III: Emotional Intelligence

AC3-IV: MOOC- Learn New Skills

AC3-V: Foreign Language (Japanese- Module 3)

Abbreviations:

TW: Term Work TH: Theory OR: Oral TUT: Tutorial PR: Practical Sem: Semester

Syllabus for Third Year Computer Engineering

ATTESTED

#4/64

Dr. M. S. GAIKWAD
PRINCIPAL
Sinhgad Institute of Technology, Lanavala

Savitribai Phule University of Pune Third Year Computer Engineering (2015 Course) (with effect from 2017-18)

Semester	II
	_

Course Code	Course	Teachin Hours /	ig Scheme Week	9	Examina	ation Sche	me ai	nd Ma	ırks		Credi	t
		Theory	Tutorial	Practical	In-Sem	End-Sem	TW	PR	OR	Total	TH/ TUT	PR
310250	Design & Analysis of Algorithms	04	-	- Care	30	70		77.00	1/1557/	100	04	
310251	Systems Programming & Operating System (SP & OS)	04	***		30	70			:(eee	100	04	
310252	Embedded Systems & Internet of Things (ES & IoT)	04	. **** **	:==:	30	70				100	04	
310253	Software Modeling and Design	03	intra	(440)	30	70	777	-	**************************************	100	03	
310254	Web Technology	03	3 416 3	1400	30	70	***	-	414	100	03	
310255	Seminar & Technical Communication	(244)	01	***)			50			50	01	-
310256	Web Technology <u>Lab</u>	SHEA	S##6	02			25	50	HH S	75		01
310257	SP & OS Lab			04			25	50		75		02
310258	ES & IoT Lab			02	0,444		50			50		01
								,	Total	Credit	19	04
	Total	18	01	08	150	350	150	100		750	2:	3
310259	Audit Course 4									1	Gra	ade

310259-Audit Course 4(AC4) Options:

AC4-I: Digital and Social Media Marketing AC4-II: Green Computing

AC4-III: Sustainable Energy Systems

AC4-IV: Leadership and Personality Development

AC4-V: Foreign Language (Japanese- Module 4)

Abbreviations:

TW: Term Work TH: Theory OR: Oral TUT: Tutorial PR: Practical Sem: Semester

Syllabus for Third Year Computer Engineering

Dr. M. S. GĂIKV

#5/64

ATTESTED

T.E. (Information Technology) 2015 Course to be implemented from June 2017

SYLLABUS STRUCTURE

SEMESTER – I

Subject		Te	eaching Schei	ne		Examination	on Schem	ne		Total	100
Code	Subject	Lecture	Tutorial	Practical	In-Sem. Paper	End-Sem. Paper	TW	PR	OR	Marks	Credits
314441	Theory of Computation	4			30	70		272	-	100	4
314442	Database Management Systems	4			30	70				100	4
314443	Software Engineering &Project Management	3	-	(3.2	30	70	æ	:**		100	3
314444	Operating System	4			30	70			-	100	4
314445	Human-Computer Interaction	3		-	30	70	>20	722	124	100	3
314446	Software Laboratory-I		**	4	7.89	+4	25	50	50	125	2
314447	Software Laboratory-II			4	9-0	753	25	50	.76	75	2
314448	Software Laboratory-III			2		29.5	50	384	(+-	50	1
314449	Audit Course 3	27			857	724	(G	**		Gra	de
J. 15	Total	18	-	10	150	350	100	100	50	750	
	Total of Part-I		28 Hours	s				750	114	n Half	23

SEMESTER - II

Subject		Te	aching Sche	me		Examinatio	n Schem	e		Total		
Code	Subject	Lecture	Tutorial	Practical	In-Sem. Paper	End-Sem.	TW	PR	OR	Marks	Credits	
314450	Computer Network Technology	3	¥.		30	70			544	100	3	
314451	Systems Programming	4	+		30	70	(755)	127	2700	100	4	
314452	Design and Analysis of Algorithms	4	-	- 5	30	70		·	-	100	4	
314453	Cloud Computing	3			30	70	184	***	i ke	100	3	
314454	Data Science & Big Data Analytics	4		*	30	70	255	200	1.55	100	4	
314455	Software Laboratory-IV			2		==	25	20	25	50	1	
314456	Software Laboratory-V	**	***	4	**	**	50	50	-	100	2	
314457	Software Laboratory-VI		744	2		-22	25	25		50	1	
314458	Project Based Seminar		01		 :	**	-	(64	50	50	1	
314459	Audit Course 4	**	24	#2	22)	-	-			Gr	ade	
	Total	18		01	08	150	350	100	75	75	750	
	Total of Part-II		27 Hours				750				23	

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Dr. M. S. GAIKWAD

PRINCIPAL Sinhgad Institute of Technology, Lonavala

ATTESTED

Savitribai Phule Pune University



Faculty of Science and Technology

Syllabus for Final Year of Mechanical Engineering

(Course 2015)

ATTESTED

Dr. M. S. GAIKWAD

Sinhgad Institute of Technology, Lonavala

Faculty of Science and Technology

Mechanical Engineering

Page 1 of 62

Savitribai Phule Pune University, Pune

BE (Mechanical Engineering) (2015 Course) Semester - VII

~ 1			ching Sc Hrs / wee			Examina	ition Sc	heme		Total		Credits	•
Code	Subject	Lect	Tut	Pract	In- Sem	End- Sem	TW	PR	OR	Marks	ТН	TW	OR/ PR
402041	Hydraulics and Pneumatics	3	×	2	30	70	25	*	25	150	3	* 0	1
402042	CAD CAM Automation	3	8	2	30	70	25	50	<u> </u>	175	3	8	1
402043	Dynamics of Machinery	4	-	2	30	70	25	540	25	150	4	-	1
402044	Elective-I	3	-	2	30	70	25	-		125	3	1	-
402045	Elective-II	3	-	-	30	70		180	-	100	3		*
402046	Project Stage-I	-	-	4	-		25	-	25	50	-	1	1
	Total	16	=	12	150	350	125	50	75	750	16	2 22	4

B. E. (Mechanical Engineering) (2015 Course) Semester - VIII

Code	Subject		hing Sc Irs / wee]	Examina	tion Sc	heme		Total Marks		Credi	ts
		Lect	Tut	Pract	In- Sem	End- Sem	TW	PR	OR		ТН	TW	OR/ PR
402047	Energy Engineering	3	(a)	2	30	70	25))	25	150	3		1
402048	Mechanical System Design	4	-	2	30 (1.5 hrs)	70 (3 hrs)	25	240	50	175	4		1
402049	Elective-III	3		2	30	70	25	-		125	3	1	-
402050	Elective-IV	3	-	-	30	70	-	-	-	100	3		
402051	Project Stage-II	: 4 :	-	12	0940	940	100	-	100	200	-	3	3
	Total	13	3440	18	120	280	175	(4)	175	750	13	22	5

	Elective – I		Elective – II
Code	Subject	Code	Subject
402044 A	Finite Element Analysis	402045 A	Automobile Engineering
402044 B	Computational Fluid Dynamics	402045 B	Operation Research
402044 C	Heating Ventilation and Air Conditioning	402045 C	Energy Audit and Management
		402045 D	Open Elective**
- 04	Elective – III		Elective – IV
402049 A	Tribology	402050 A	Advanced Manufacturing Processes
402049 B	Industrial Engineering	402050 B	Solar & Wind Energy
402049 C	Robotics	402050 C	Product Design and Development
	Pal live	402050 D	Open Elective**

Faculty of Science and Technology

Mechanical Engineering

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SAVITRIBAI PHULE PUNE UNIVERSITY



FACULTY OF ENGINEERING

SYLLABUS FOR B.E. ELECTRICAL ENGINEERING (2015 course)

WITH EFFECT FROM YEAR 2018-2019

ATTESTED

Savitribai Phule Pune University **FACULTY OF ENGINEERING**

B.E. Electrical Engineering (2015 Course) (w.e.f. 2018-2019)

					SEME	ESTER-	·I						
Sr	Subject	Subject Title	S	eachir Schem rs/We	e	E	xamin: (N	ation S Marks)		e	Total	Cre	edit
No	Code	Subject Title	ТН	PR	TU	In Sem	End Sem	TW	PR	OR	Marks	TH / TU	PR + OR
1	403141	Power System Operation and Control	03	02		30	70	25	MH	25	150	03	01
2	403142	PLC and SCADA Applications	04	02		30	70	25	50	ales .	175	04	01
3	403143	Elective I	03	02		30	70	25			125	03	01
4	403144	Elective II	03			30	70				100	03	
5	403145	Control System II	03	02	· ()	30	70	25		25	150	03	01
6	403146	Project I			02		7. 70.			50	50	02	
	403152	Audit Course V											
		TOTAL	16	08	02	150	350	100	50	100	750	18	04
		*		Ä	SEME	STER-	II						
Sr	Subject	C-1-14 T-141-		eachii Schem	e	Е	xamin (I	ation S Marks		ie	Total	Cr	edit
No	Code	Subject Title				P	P				Marks	TH/	PR-
			TH	PR	TU	In Sem	End Sem	TW	PR	OR		TU	OR
1	403147	Switchgear and Protection	03	02		30	70	50		25	175	03	01
2	403148	Power Electronic Controlled Drives	04	02	-	30	70	25	50	-	175	04	01
3	403149	Elective III	03	02		30	70	25		25	150	03	01
4	403150	Elective IV	03			30	70				100	03	
4					0.0			=0		100	4.50	0.0	
5	403151	Project II			06			50		100	150	06	

120

280

150

50

150

ATTESTED

750

Dr. M. S. GAIKWAD **PRINCIPAL**

19

03

13

06

06

TOTAL

Savitribai Phule Pune University Faculty of Science & Technology



B.E. (Electronics & Telecommunication) (2015 Pattern) Syllabus (With effect from Academic Year 2018-19)

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Dr. M. S. GAIKWAD

PRINCIPAL

Savitribai PhulePune University Final Year E&TC Engineering (2015 Course)

(With effect from Academic Year 2018-19)

				5	Semes	ter I						
Course	Course	Teachi Hou	-		Sem	ester I		inatio arks	n Sch	eme of	Cr	edits
Code	Course	Theor y	Tut	Pract	In- Sem	End- Sem	TW	PR	OR	Total	TH/TW	PR+OR
404181	VLSI Design& Technology	3			30	70	-	-		100	3	
404182	Computer Networks & Security	4			30	70	344C			100	4	
404183	Radiation & Microwave Techniques	3			30	70	-			100	3	
404184	Elective I	3			30	70		===		100	3	7.7
404185	Elective II	3			30	70			100000	100	3	
404186	Lab Practice -I (CNS+ RMT)	X 755 (4			50		50	100		2
404187	Lab Practice -II (VLSI + Elective I)	18754		4	3 ***		50	50		100		2
404188	Project Stage I		2				-		50	50		2
	Audit Course 5		=		-		=			220	-	
	Total	16	2	8	150	350	100	50	100	750	16	6
	ONVIVING IS M	.WI	Tota	l Cred	its							22
Electiv 1 Digit	al Image and Video			ctive II	[<u>Audi</u>	t Course	e <u>5</u>	
Process	sing		1. V	Vavelet	S				1. Gr	een Ener	gy	
2. Indu	strial Drives and Con	trol	2. E	lectron	ics Pr	oduct I	Design	ւ	2. Hu	man Bel	haviour	
3. Emb	edded Systems & RT	OS	3. C	ptimiz	ation 7	Гесhni	ques					
4. Inter	rnet of Things		4. A	Artificia Electron	ıl Intel	ligence						

2

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Dr. M. S. GAIKWAD

PRINCIPAL Sinhgad Institute of Technology, Lonavala

Final Year E&TC Engineering (2015 Course)

		Teachi Hour	-		Sem	ester		nina: Iark		heme of	Cro	edit
Course Code	Course	Theory	Tut	Pract		End- Sem		PR		Total	TH/TW	PR+OF
404189	Mobile	2			20	70				100	2	
	Communication	3			30	70			444	100	3	
404190	Broadband											
	Communication	4	-		30	70	10000			100	4	1900
	Systems								-			
404191	Elective III	3	-	=	30	70	-		-	100	3	
404192	Elective IV	3			30	70	:) + : + ::		1	100	3	
404193	Lab Practice –III (MC+BCS)	-		4		-	50	50	-	100	0 775 1	2
404194	Lab Practice –IV (Elective III)		NATE:	2	-			(A nte)	50	50		1
404195	Project Stage II		6	120			150	02/22	50	200	(44)	6
	Audit Course 6		**	=				199		411 .		
	Total	13	6	6	120	280	200	50	100	750	13	9
									Tota	l Credits		22
Elective II	<u>II</u>		Elect	ive-IV	ń					Course 6		<i>1 L</i>
. PLC s a . Audio a . Softwar	e Learning nd Automation nd Speech Processi e Defined Radio Video Engineering	ng	2. Bio 3. Wi 4. Re	botics omedic reless t newabl en Elec	Senso e Ene	r Netv ergy S	works	- 1	1. Tear Fitness 2. Env	m Buildir s	ng, Leader al issues a	

*Any one course from the list of Elective IV of computer/IT/Electrical/Instrumentation or Institute can offer elective IV based on any industry need with prior approval from BoS(Electronics & Telecommunication). Repetition of course or topics should be avoided.

ATTESTED

PRINCIPAL

Savitribai Phule Pune University Fourth Year of Computer Engineering (2015 Course) (with effect from 2018-19)

			Ser	neste	<u>r I</u>							
Course Code	Course		g Scheme s / Week	Ex	aminati	on Sch	ieme :	and Ma	rks	Cre	dit	
		Theory	Practical	In- Sem	End- Sem	TW	PR	OR/ *PRE	Total	TH/ TUT	PR	
410241	High Performance Computing	04		30	70	-	-111		100	04		
410242	Artificial Intelligence and Robotics	03	2002	30	70	- 	-	-	100	03		
410243	Data Analytics	03	(aje)	30	70	1990	-		100	03		
410244	Elective I	03		30	70				100	03	S###	
410245	Elective II	03		30	70				100	03		
410246	<u>Laboratory</u> Practice I	-	04		1944	50	50		100		02	
410247	Laboratory Practice II	OHR:	04		Owner:	50	; ** :	*50	100	::::::::::::::::::::::::::::::::::::::	02	
410248	Project Work Stage I	-	02	***	::HHE	:++:	2660	*50	50	Defe	02	
			39					Tota	l Credit	16	06	
	Total	16	10	150	350	100	50	100	750	2	2	
410249	Audit Course 5			I min my and my area area area.							ade	
	Elective	I					Ele	ective I		3/		
410244 (A) Digital Signal Processing				410245 (A) Distributed Systems								
410244 (B) Software Archite	cture and	Design	410	410245 (B) Software Testing and Quality Assurance							
410244 ((C) Pervasive and Ut	oiquitous	Computing	410	245 (C)	Opera	tions l	Researc	<u>h</u>			
410244 (D) Data Mining and	Warehou	ising	410	245 (D)	Mobil	e Con	nmunica	tion			

410249-Audit Course 5 (AC5) Options:

AC5-T **Entrepreneurship Development**

AC5-IV: Industrial Safety and Environment Consciousness

AC5-II: Botnet of Things

AC5-V:

Emotional Intelligence

AC5-III: 3D Printing

AC5-VI: MOOC- Learn New Skills

Abbreviations:

TW: Term Work

TH: Theory

OR: Oral

PR: Practical

Sem: Semester

*PRE: Project/ Mini-Project Presentation

ATTESTED

#4/87

Sinhgad Institute of Technology, Lonavala

Syllabus for Fourth Year of Computer Engineering

Savitribai Phule Pune University Fourth Year of Computer Engineering (2015 Course) (with effect from 2018-19)

Semester	II
-	

Course Code	Course	Sch	ching ieme / Week	Ex	aminati	on Sch	eme :	and Ma	rks	Cre	dit
1.	1001 0	Theory	Practical	In- Sem	End- Sem	TW	PR	OR/ *PRE	Total	TH/ TUT	PR
410250	Machine Learning	03	- 	30	70			NHH.	100	03	i s mr s
410251	Information and Cyber Security	03	-	30	70	**	550	-	100	03	**
410252	Elective III	03		30	70	122		:446	100	03	
410253	Elective IV	03		30	70				100	03	
410254	Laboratory Practice III	-	04) 200 /	50	50		100	-	02
410255	Laboratory Practice IV		04			50		*50	100		02
410256	Project Work Stage II		06		-	100		*50	150	(200)	06
	mtn							Total		12	10
	Total	12	14	120	280	200	50	100	750	22	2
4102 57	Audit Course 6		dr.							Gra	ide
	Elective	III]	Elective	IV		
410252	(A) Advanced Digital S	ignal Pro	cessing		41025	3 (A) S	oftwa	are Defin	ned Netv	vorks	
410252	(B) Compilers				41025	3 (B) <u>I</u>	Iumai	1 Compt	iter Inter	face	
410252	(C) Embedded and Real	Time Op	perating Sy	stems	41025	3 (C) <u>C</u>	Cloud	Comput	ting		
410252	(D) Soft Computing and	Optimiz	ation Algo	rithms	41025	3 (D) ()nen l	Elective			

410259-Audit Course 6 (AC6) Options:

AC6-I: Business Intelligence

AC6-IV: Usability Engineering

AC6-II: Gamification

AC6-V: Conversational Interfaces

AC6-III: Quantum Computing

AC6-VI: MOOC- Learn New Skills

Abbreviations:

TW: Term Work

TH: Theory

OR: Oral

PR: Practical

Sem: Semester

*PRE: Project/ Mini-Project Presentation

ATTESTED

PRINCIPAL Sinhgad Institute of Technology, Lonavala

Emigrad Institute of Territuragy, Londwalls

Savitribai Phule Pune University, Pune

B.E. (Information Technology) 2015 Course to be implemented from Academic Year 2018-19 SEMESTER-L

Subject Code		Teaching Scheme				Examinat					
	Subject	Lecture	Practical	Tutorial	In-Sem	TW	PR	OR	End-Sem	Total Marks	Credits
414453	Information and Cyber Security	3			30	**			70	100	3
414454	Machine Learning and Applications	4			30	2000			70	100	4
414455	Software Design and Modeling	3	1000/2		30			nit	70	100	3
414456	Elective-I	3		775	30	ं क्षेत्रति र			70	100	3
414457	Elective -II	3			30				70	100	3
414458	Computer Laboratory-VII		4			50	50			100	2
414459	Computer Laboratory-VIII		4		**	50		50		100	2
414460	Project Phase-I			2				50		50	2
414461 Audit Course-V										G	rade
Total		16	8	2	150	100	50	100	350	750	22
Total of	Part-I		26					750			22

Abbreviations: TW: Term Work TH: Theory OR: Oral PR: Practical Sem: Semester

Computer Laboratory-VII (Information and Cyber Security+ Machine Learning and Application)

Computer Laboratory-VIII (Software Design and Modeling)

	Elective I	Elective II					
414456 A	1. Wireless Communications	414457A	1. Software Defined Networks				
414456B	2. Natural Language Processing	414457B	2. Soft Computing				
414456C	3. Usability Engineering	414457C	3. Software Testing and Quality Assurance				
414456D	4. Multicore and Concurrent Systems	414457D	4. Compiler Construction				
414456E	5. Business Analytics and Intelligence	414457E	5. Gamification				

Audit Course-V						
414461A	1. Emotional Intelligence					
414461B	2. Green Computing					
414461C	3. Critical Thinking					
414461D	4. Statistical Learning model using R.					

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Dr. M. S. GAIKWAD
PRINCIPAL
Sinhgad Institute of Technology, Lonavala

SEMESTER-II

		Teachi	ng Sch	eme		Examin	ation	Schem	е		
Subject Code	Subject	Lecture	Practical	Tutorial	In-Sem	TW	PR	OR	End- Sem	Total Marks	Credits
414462	Distributed Computing System	3	**	***	30				70	100	3
414463	<u>Ubiquitous</u> Computing	3			30	***		***	70	100	3
414464	Elective-III	3	2	2445	30	25	344	25	70	150	4
414465	Elective-IV	3	22	-	30		(12-21		70	100	3
414466	Computer Laboratory-IX		4	- 		50	50) ***		100	2
414467	Computer Laboratory-X), man.	2		1441	25		25		50	1
414468	Project Work			6		50	· ***	100	:***	150	6
414469 Audit Course-VI							(##			G	irade
Total		12	8	6	120	150	50	150	280	750	22
Total of P	art-II		26			1		750			22

Abbreviations: TW: Term Work **TH:** Theory **OR:** Oral **PR:** Practical **Sem:** Semester Computer Laboratory-IX (Distributed Computing System)
Computer Laboratory-X (Ubiquitous Computing)

	Elective III	Elective IV			
414464A	1. Internet of Things (IoT)	414465A	1. Rural Technologies and Community Development		
414464B	2. Information storage and retrieval	414465B	2. Parallel Computing		
414464C	3. Multimedia Techniques	414465C	3. Computer Vision		
414464D	4. Internet and Web Programming	414464D	4. Social Media Analytics		
414464E	5. Computational Optimization	414465E	5. Open Elective		

	Audit Course-VI					
414469A	1. IoT – Application in Engineering field					
414469B	2. Entrepreneurship					
414469C	3. Cognitive Computing					
414469D	4. Al and Robotics					

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