

Savitribai Phule Pune University, Pune
Syllabus: Third Year (TE) Electrical Engineering (2019 course)
(w.e.f 2021-22)

SEMESTER-I

Course code	Course Name	Teaching Scheme				Examination Scheme						Credit				
		Th	Pr	Tu	SEM /PW /IN	ISE	ESE	TW	PR	OR	Total	Th	Pr	Tu	SEM /PW /IN	Total
303141	<u>Industrial and Technology Management</u>	3	0	0	0	30	70	0	0	0	100	3	0	0	0	3
303142	<u>Power Electronics</u>	3	4#	0	0	30	70	0	50	0	150	3	2	0	0	5
303143	<u>Electrical Machines-II</u>	3	2	0	0	30	70	25	25	0	150	3	1	0	0	4
303144	<u>Electrical Installation Design and Condition Based Maintenance</u>	3	4#	0	0	30	70	25	0	25	150	3	2	0	0	5
303145	<u>Elective-I</u>	3	0	0	0	30	70	0	0	0	100	3	0	0	0	3
303146	<u>Seminar</u>	0	0	0	1	0	0	50	0	0	50	0	0	0	1	1
303147	<u>Audit course-V</u>	2*	0	0	0	0	0	0	0	0	0	GRADE: PP/NP				0
Total		15	10	0	1	150	350	100	75	25	700	15	5	0	1	21

303145: Elective-I

303147 : Audit Course-V

303145A : Advanced Microcontroller and Embedded System

303147A : Energy storage systems

303145B : Digital Signal Processing

303147B : Start-up & Disruptive innovation

303145C : Open Elective

SEMESTER-II

Course code	Course Name	Teaching Scheme				Examination Scheme						Credit				
		Th	Pr	Tu	SEM /PW /IN	ISE	ESE	TW	PR	OR	Total	Th	Pr	Tu	SEM /PW /IN	Total
303148	<u>Power System-II</u>	3	2	1	0	30	70	25	50	0	175	3	1	1	0	5
303149	<u>Computer Aided Design of Electrical Machines</u>	3	4#	0	0	30	70	50	0	25	175	3	2	0	0	5
303150	<u>Control System Engineering</u>	3	2\$	1\$	0	30	70	25	0	25	150	3	1	0	0	4
303151	<u>Elective-II</u>	3	0	0	0	30	70	0	0	0	100	3	0	0	0	3
303152	<u>Internship</u>	0	0	0	4	0	0	100	0	0	100	0	0	0	4	4
303153	<u>Audit Course VI</u>	2*	0	0	0	0	0	0	0	0	0	GRADE: PP/NP				0
Total		12	8	2	4	120	280	200	50	50	700	12	4	1	4	21

303151: Elective-II

303153 : Audit Course-VI

303151A : IoT and its Applications in Electrical Engineering

303153A: Ethical Practices for Engineers

303151B : Electrical Mobility

303153B : Project Management

303151C: Cybernetic Engineering

303151D: Energy Management

#Practical consists of Part A & part B. PART A; Regular experiments & part B; to bridge the gap between theory & actual industrial practices. For subject 303144; there will be auto cad drawing on Electrical installation, Electrical wiring, cabling etc. For 303149, Part A, Regular drawing by hand & part B same drawing by AutoCAD.

\$ tutorial credit merged with Practical.

* Conduct over and above these lectures.

Savitribai Phule Pune University
Third Year of Computer Engineering (2019 Course)
 (With effect from Academic Year 2021-22)


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Semester V

Course Code	Course Name	Teaching Scheme (Hours/week)			Examination Scheme and Marks						Credit Scheme				
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total	
310241	<u>Database Management Systems</u>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310242	<u>Theory of Computation</u>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310243	<u>Systems Programming and Operating System</u>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310244	<u>Computer Networks and Security</u>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310245	<u>Elective I</u>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310246	<u>Database Management Systems Laboratory</u>	-	04	-	-	-	25	25	-	50	-	02	-	02	
310247	<u>Computer Networks and Security Laboratory</u>	-	02	-	-	-	25	-	25	50	-	01	-	01	
310248	<u>Laboratory Practice I</u>	-	04	-	-	-	25	25	-	50	-	02	-	02	
310249	<u>Seminar and Technical Communication</u>	-	-	01	-	-	50	-	-	50	-	-	01	01	
Total		15	10	01	150	350	125	50	25	700	15	05	01	21	
310250	<u>Audit Course 5</u>											Grade			
Total Credit											15	05	01	21	
310245 Elective I Options: 310245(A) <u>Internet of Things and Embedded Systems</u> 310245(B) <u>Human Computer Interface</u> 310245(C) <u>Distributed Systems</u> 310245(D) <u>Software Project Management</u>						310250 Audit Course 5 Options: 310250 (A) <u>Cyber Security</u> 310250 (B) <u>Professional Ethics and Etiquettes</u> 310250 (C) <u>Learn New Skills</u> 310250 (D) <u>Engineering Economics</u> 310250 (E) <u>Foreign Language</u>									
Laboratory Practice I Assignments from Systems Programming and Operating System and Elective I															

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Third Year of Computer Engineering (2019 Course)
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Semester VI

Course Code	Course Name	Teaching Scheme (Hours/week)			Examination Scheme and Marks						Credit Scheme				
		§§ Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total	
310251	<u>Data Science and Big Data Analytics</u>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310252	<u>Web Technology</u>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310253	<u>Artificial Intelligence</u>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310254	<u>Elective II</u>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310255	<u>Internship**</u>	-	-	-	-	-	100**	-	-	100	-	-	-	04**	
310256	<u>Data Science and Big Data Analytics Laboratory</u>	-	04	-	-	-	50	25	-	75	-	02	-	02	
310257	<u>Web Technology Laboratory</u>	-	02	-	-	-	25	-	25	50	-	01	-	01	
310258	<u>Laboratory Practice II</u>	-	04	-	-	-	50	25	-	75	-	02	-	02	
Total		12	10	-	120	280	225	50	25	700	12	09	-	21	
310259	<u>Audit Course 6</u>											Grade			
											Total	12	09	-	21

310254 Elective II Options:

- 310254(A) Information Security
- 310254(B) Augmented and Virtual Reality
- 310254(C) Cloud Computing
- 310254(D) Software Modeling and Architectures

310259 Audit Course 6 Options:

- 310259(A) Digital and Social Media Marketing
- 310259(B) Sustainable Energy Systems
- 310259(C) Leadership and Personality Development
- 310259(D) Foreign Language
- 310259(E) Learn New Skills

Laboratory Practice II:

Assignments from **Artificial Intelligence** and **Elective II**.

**** Internship:**

Internship guidelines are provided in course curriculum sheet.

§§ Hours/Week for Theory Course in Third Year of Engineering, Semester VI:

As per the apex bodies' recommendations and guidelines, it is need of the day to train the pre-final year students for the industrial readiness through internship. As per the guidelines of AICTE, the duration of internship is 4-6 weeks after completion of semester V and before commencement of semester VI, so it is apparent that the contact hours of the TE students need to be managed meticulously. It becomes mandatory as per the structure that 4 credits for internship must be earned by the students. **Per semester, 15 weeks duration that is suggested ideally by the affiliated university will eventually reduce to fruitful 12 weeks after the implementation of the revised curriculum (2019 Course). With the evaluatory introduction of internship in the structure, we are left with the choice of 4 theory courses in the sixth semester with 12 weeks instead of traditional 15 weeks.** To balance the credits and to achieve the minimum required contact hours, it is the reasonable choice to allot 4 hours / week for each theory course of the sixth semester of Third year of Engineering. The additional one lecture/ week will definitely be instrumental in achieving the largest of minimum contact hours. As such there is no correspondence of weekly load and credits earned, the credit allotted per course remain intact despite of the change. **So it is almost imperative that the commencement of VI Semester need to be approx. 3 weeks beyond the schedule.**

Savitribai Phule Pune University
Board of Studies - Automobile and Mechanical Engineering
Undergraduate Program - Mechanical Engineering (2019 pattern)

Course Code	Course Name	Teaching Scheme (Hrs./week)			Examination Scheme and Marks						Credit			
		TH	PR	TUT	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
Semester-V														
302041	Numerical & Statistical Methods	3	-	1	30	70	25	-	-	125	3	-	1	4
302042	Heat & Mass Transfer	3	2	-	30	70	-	50	-	150	3	1	-	4
302043	Design of Machine Elements	3	2	-	30	70	-	-	25	125	3	1	-	4
302044	Mechatronics	3	2	-	30	70	-	-	25	125	3	1	-	4
302045	Elective I	3	-	-	30	70	-	-	-	100	3	-	-	3
302046	Digital Manufacturing Laboratory	-	2	-	-	-	50	-	-	50	-	1	-	1
302047	Skill Development	-	2	-	-	-	25	-	-	25	-	1	-	1
302048	Audit course - V ^s	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		15	10	1	150	350	100	50	50	700	15	5	1	21
Semester-VI														
302049	Artificial Intelligence & Machine Learning	3	2	-	30	70	-	-	25	125	3	1	-	4
302050	Computer Aided Engineering	3	2	-	30	70	-	50	-	150	3	1	-	4
302051	Design of Transmission Systems	3	2	-	30	70	-	-	25	125	3	1	-	4
302052	Elective II	3	-	-	30	70	-	-	-	100	3	-	-	3
302053	Measurement Laboratory	-	2	-	-	-	50	-	-	50	-	1	-	1
302054	Fluid Power & Control Laboratory	-	2	-	-	-	50	-	-	50	-	1	-	1
302055	Internship/Mini project *	-	4	-	-	-	100	-	-	100	-	4	-	4
302056	Audit course - VI ^s	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		12	14	-	120	280	200	50	50	700	12	9	-	21
Elective-I						Elective-II								
302045-A	Advanced Forming & Joining Processes	302052-A			Composite Materials									
302045-B	Machining Science & Technology	302052-B			Surface Engineering									

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

Note: Interested students of TE (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 FOUR batches per division only.
- Minimum number of Experiments/Assignments in PR/Tutorial shall be carried out **as mentioned in the syllabi** of respective courses.
- Assessment of tutorial work has to be carried out similar to term-work. The Grade cum marks for Tutorial and Term-work shall be awarded on the basis of **continuous evaluation**.
- ^sAudit 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.

Savitribai Phule Pune University, Pune
T.E. (Electronics & Telecommunication Engineering) 2019 Course
 (With effect from Academic Year 2021-22)

Semester-V

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit			
		Theory	Practical	Tutorial	In-Sem	End-Sem	TW	PR	OR	Total	TH	PR	TUT	Total
304181	Digital Communication	03	-	-	30	70	-	-	-	100	03	-	-	03
304182	Electromagnetic Field Theory	03	-	01	30	70	25	-	-	125	03	-	01	04
304183	Database Management	03	-	-	30	70	-	-	-	100	03	-	-	03
304184	Microcontrollers	03	-	-	30	70	-	-	-	100	03	-	-	03
304185	Elective - I	03	-	-	30	70	-	-	-	100	03	-	-	03
304186	Digital Communication Lab	-	02	-	-	-	-	50	-	50	-	01	-	01
304187	Database Management Lab	-	02	-	-	-	-	-	25	25	-	01	-	01
304188	Microcontroller Lab	-	02	-	-	-	-	50	-	50	-	01	-	01
304189	Elective I Lab	-	02	-	-	-	-	25	-	25	-	01	-	01
304190	Skill Development	-	02	-	-	-	25	-	-	25	-	01	-	01
304191A	Mandatory Audit Course 5 &	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		15	10	01	150	350	50	125	25	700	-	-	-	-
Total Credit											15	05	01	21

Elective -I

- 1) Digital Signal Processing
- 2) Electronic Measurements
- 3) Fundamentals of JAVA Programming
- 4) Computer Networks

Savitribai Phule Pune University, Pune
T.E. (Electronics & Telecommunication Engineering) 2019 Course
 (With effect from Academic Year 2021-22)

Semester-VI

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit			
		Theory	Practical	Tutorial	In-Sem	End-Sem	TW	PR	OR	Total	TH	PR	TUT	Total
304192	Cellular Networks	03	-	-	30	70	-	-	-	100	03	-	-	03
304193	Project Management	03	-	-	30	70	-	-	-	100	03	-	-	03
304194	Power Devices & Circuits	03	-	-	30	70	-	-	-	100	03	-	-	03
304195	Elective-II	03	-	-	30	70	-	-	-	100	03	-	-	03
304196	Cellular Networks Lab	-	02	-	-	-	-	-	50	50	-	01	-	01
304197	Power Devices & Circuits Lab	-	02	-	-	-	-	50	-	50	-	01	-	01
304198	Elective-II Lab	-	02	-	-	-	-	25	-	25	-	01	-	01
304199	Internship**	-	-	-	-	-	100	-	-	100	-	-	04	04
304200	Mini Project	-	04	-	-	-	25	-	50	75	-	02	-	02
304191 B	Mandatory Audit Course 6 &	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		12	10	00	120	280	125	75	100	700				
Total Credit											12	05	04	21

Abbreviations:

In-Sem: In semester

End-Sem: End semester

TH: Theory

TW : Term Work

PR: Practical

OR: Oral

TUT: Tutorial

Note: Students of T.E. (Electronics & Telecommunications) have to opt any one of the audit course from the list of audit courses prescribed by BoS (Electronics & Telecommunications Engineering)

Elective -II

- 1) Digital Image Processing
- 2) Sensors in Automation
- 3) Advanced JAVA Programming
- 4) Embedded Processors
- 5) Network Security

Savitribai Phule Pune University, Pune
TE (Civil Engineering) 2019 Pattern
(With effect from Academic Year 2021-22)

SEMESTER: V

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit					
		Theory	Practical	Tutorial	IN-Sem	End-Sem	TW	PR	OR	Total	TH	TW	PR	OR	TUT	Total
301001	Hydrology and Water Resources Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301002	Water Supply Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301003	Design of Steel Structures	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301004	Engineering Economics and Financial Management	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301005	Elective I	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301006	Seminar	--	--	01	--	--	50	--	--	50	--	--	--	--	01	01
301007	Hydrology and Water Resources Engineering Lab	--	02	--	--	--	25	--	--	25	--	01	--	--	--	01
301008	Water Supply Engineering Lab	--	02	--	--	--	--	50	--	50	--	--	01	--	--	01
301009	Design of Steel Structures Lab	--	04	--	--	--	--	--	50	50	--	--	--	02	--	02
301010	Elective I Lab	--	02	--	--	--	25	--	--	25	--	01	--	--	--	01
301011	Audit Course I: Professional Ethics and Etiquettes/ Sustainable Energy Systems	--	--	01	--	GR	--	--	--	GR	--	--	--	--	--	--
Total		15	10	02	150	350	100	50	50	700	15	02	01	02	01	21

Abbreviations: TH : Theory, TW: Term Work, PR : Practical, OR: Oral, TUT : Tutorial, GR: Grade

Elective I: 301005

S N	Course Code	Course Name
01	301005 a	Advanced Fluid Mechanics and Hydraulic Machines
02	301005 b	Research Methodology and IPR
03	301005 c	Construction Management
04	301005 d	Advanced Concrete Technology
05	301005 e	Matrix Methods of Structural Analysis
06	301005 f	Advanced Mechanics of Structures

SEMESTER-VI																
Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks					Credit						
		Theory	Practical	Tutorial	IN-Sem	End-Sem	TW	PR	OR	Total	TH	TW	PR	OR	TUT	Total
301012	Waste Water Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	03	
301013	Design of RC Structures	03	--	--	30	70	--	--	--	100	03	--	--	--	03	
301014	Remote Sensing and GIS	03	--	--	30	70	--	--	--	100	03	--	--	--	03	
301015	Elective II	03	--	--	30	70	--	--	--	100	03	--	--	--	03	
301016	Internship	--	--	--	--	--	100	--	--	100	--	04	--	--	04	
301017	Waste Water Engineering Lab	--	02	--	--	--	--	--	50	50	--	--	--	01	01	
301018	Design of RC Structures Lab	--	04	--	--	--	--	--	50	50	--	--	--	02	02	
301019	Remote Sensing and GIS Lab	--	02	--	--	--	50	--	--	50	--	01	--	--	01	
301020	Elective II Lab	--	02	--	--	--	50	--	--	50	--	01	--	--	01	
301021	Audit Course II: Leadership and Personality Development/ Industrial Safety	--	--	01	--	GR	--	--	--	GR	--	--	--	--	--	
Total		12	10	01	120	280	200	--	100	700	12	06	--	03	--	21

Abbreviations: TH : Theory, TW: Term Work, PR : Practical, OR: Oral and TUT : Tutorial, GR: Grade

Elective II: 301015

S N	Course Code	Course Name
01	301015 a	Advanced Engineering Geology with Rock Mechanics
02	301015 b	Soft Computing Techniques
03	301015 c	Advanced Surveying
04	301015 d	Advanced Geotechnical Engineering
05	301015 e	Architecture and Town Planning
06	301015 f	Solid Waste Management