

Savitribai Phule Pune University, Pune



Syllabus for BE Civil Engineering (2019 Pattern)

Implemented from Academic year 2022-23

Board of Studies in Civil Engineering

Faculty of Science and Technology

Savitribai Phule Pune University, Pune
BE (Civil Engineering) 2019 Pattern
(With effect from Academic Year 2022-23)

SEMESTER: VII

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
401001	Foundation Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401002	Transportation Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401003	Elective III	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401004	Elective IV	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401005	Project Stage I	--	04	--	--	--	50	--	50	100	--	01	--	02	--	03
401006	Transportation Engineering Lab	--	02	--	--	--	--	--	50	50	--	--	--	01	--	01
401007	Elective III Lab	--	02	--	--	--	--	--	50	50	--	--	--	01	--	01
401008	Elective IV Lab	--	02	--	--	--	50	--	--	50	--	01	--	--	--	01
401009	Computer Programming in Civil Engineering	01	02	--	--	--	50	--	--	50	--	02	--	--	--	02
401010	Audit Course I Stress Management by Yoga / Communication Etiquette in Workplaces	--	--	01	--	GR	--	--	--	GR	--	--	--	--	--	--
Total		13	12	01	120	280	150	--	150	700	12	04	--	04	--	20

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

Elective III and IV

S N	Course Code	Elective III: Course Name	Course Code	Elective IV: Course Name
01	401003 a	Coastal Engineering	401004 a	Air Pollution and Control
02	401003 b	Advanced Design of Concrete Structures	401004 b	Advanced Design of Steel Structures
03	401003 c	Integrated Water Resources Planning & Management	401004 c	Statistical Analysis and Computational Method
04	401003 d	Finite Element Method	401004 d	Airport and Bridge Engineering
05	401003 e	Data Analytics	401004 e	Design of Prestressed Concrete Structures
06	401003 f	Operation Research	401004 f	Formwork and Plumbing Engineering

SEMESTER-VIII																
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
401011	Dams and Hydraulics Structures	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401012	Quantity Surveying, Contracts and Tenders	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401013	Elective V	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401014	Elective VI	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
401015	Project Stage II	--	10	--	--	--	100	--	50	150	--	03	--	02	--	05
401016	Dams and Hydraulics Structures Lab	--	02	--	--	--	--	--	50	50	--	--	--	01	--	01
401017	Quantity Surveying, Contracts and Tenders Lab	--	02	--	--	--	--	--	50	50	--	--	--	01	--	01
401018	Elective V Lab	--	02	--	--	--	50	--	--	50	--	01	--	--	--	01
401019	Audit Course II Social Responsibility / Human Rights	--	--	01	--	GR	--	--	--	GR	--	--	--	--	--	--
Total		12	16	01	120	280	150	--	150	700	12	04	--	04	--	20
Abbreviations: TH : Theory, TW: Term Work, PR : Practical, OR: Oral and TUT : Tutorial, GR: Grade																

Elective V and VI

S N	Course Code	Elective V: Course Name	Course Code	Elective VI: Course Name
01	401013 a	Earthquake Engineering	401014 a	TQM and MIS
02	401013 b	Structural Design of Bridges	401014 b	Advanced Transportation Engineering
03	401013 c	Irrigation and Drainage	401014 c	Geo Synthetic Engineering
04	401013 d	Design of Precast and Composite Structures	401014 d	Structural Design of Foundations
05	401013 e	Hydropower Engineering	401014 e	Green Structures and Smart Cities
06	401013 f	Structural Audit and Retrofitting of Structures	401014 f	Rural Water Supply and Sanitation

Savitribai Phule Pune University, Pune



Syllabus for TE Civil Engineering (2019 Pattern)

Implemented from Academic year 2021-22

Board of Studies in Civil Engineering

Faculty of Science and Technology

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

SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE



Faculty of Science and Technology

Board of Studies

Electrical Engineering

Syllabus

**Final Year Electrical Engineering
(2019 Course)
(w.e.f. 2022-2023)**

BE Electrical (2019 Course)

SEM-I

Course Code	Course Name	Teaching Scheme				Examination Scheme						Credit				
		Th	Pr	Tu	PW	ISE	ESE	TW	PR	OR	Total	Th	Pr	Tu	PW	Total
403141	Power System Operation & Control	3	2	–	–	30	70	25	–	25	150	3	1	–	–	4
403142	Advanced Control System	3	2	–	–	30	70	–	–	50	150	3	1	–	–	4
403143	Elective-I	3	2	–	–	30	70	–	–	25	125	3	1	–	–	4
403144	Elective-II	3	–	2*	–	30	70	25	–	–	125	3	–	1	–	4
403145	Project Stage-I	–	–	–	4	–	–	50	–	50	100	–	–	–	2	2
403146	MOOCs	–	–	–	–	–	–	50	–	–	50	–	–	–	2	2
403147	Audit Course-VII	2#	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total		12	6	2	4	120	280	150	–	150	700	12	3	1	4	20
403143: Elective-I				403144: Elective-II				403147: Audit Course-VII								
403143A: PLC and SCADA 403143B: Power Quality Management 403143C: High Voltage Engineering 403143D: Robotics and Automation				403144A : Alternate Energy System 403144B : Electrical & Hybrid Vehicle 403144C : Special-purpose Machines 403144D: HVDC & FACTS				403147 A: German Language I 403147B: Engineering Economics I 403147C: Sustainability(IGBC)								

SEM-II

Course Code	Course Name	Teaching Scheme				Examination Scheme						Credit				
		Th	Pr	Tu	PW	ISE	ESE	TW	PR	OR	Total	Th	Pr	Tu	PW	Total
403148	Switchgear and Protection	3	2	–	–	30	70	25	–	50	175	3	1	–	–	4
403149	Advanced Electrical Drives & Control	3	2	–	–	30	70	25	50	–	175	3	1	–	–	4
403150	Elective-III	3	–	–	–	30	70	–	–	–	100	3	–	–	–	3
403151	Elective-IV	3	–	–	–	30	70	–	–	–	100	3	–	–	–	3
403152	Project stage II	–	–	–	12	–	–	100	–	50	150	–	–	–	6	6
403153	Audit course VIII	2#	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total		12	4	–	12	120	280	150	50	100	700	12	2	–	6	20
403150: Elective-III				403151: Elective-IV				403153: Audit Course-VIII								
403150 A : Digital Control System 403150 B : Restructuring and Deregulation 403 150 C: Smart Grid 403150 D: SensorTechnology (Open Elective)				403151A: EHV AC Transmission 403151B : Illumination Engineering 403151C: Electromagnetic Fields 403151D: AI and ML (Open Elective)				403153A: German Language II 403153B: Engineering Economics II 403153C: Green Building								

* For the tutorial, one credit is given. # Audit Course: Conduct over and above these lectures.

Savitribai Phule Pune University, Pune



Faculty of Science and Technology

Board of Studies
Electrical Engineering

Syllabus
Third Year Electrical Engineering
(2019 course)
(w.e.f. 2021-22)

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

303144: 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

303 151C: Cybernetic Engineering

303151D: Energy Management

#Practical consists of Part A & part B. PART A; Regular experiments & part B; to bridge the gap between theory &

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



Curriculum for
Final Year of Information Technology
(2019 Course)
(With effect from AY 2022-23)

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Savitribai Phule Pune University Final Year of Information Technology (2019 Course) (With effect from Academic Year 2022-23)														
Semester VII														
Course Code	Course Name	Teaching Scheme(Hours/week)			Examination Scheme and Marks						Credit Scheme			
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Termwork	Practical	Oral	Total	Lecture	Practical	Tutorial	Total
414441	Information and Storage Retrieval	03	-	-	30	70	-	-	-	100	3	-	-	3
414442	Software Project Management	03	-	-	30	70	-	-	-	100	3	-	-	3
414443	Deep Learning	03	-	-	30	70	-	-	-	100	3	-	-	3
414444	Elective III	03	-	-	30	70	-	-	-	100	3	-	-	3
414445	Elective IV	03	-	-	30	70	-	-	-	100	3	-	-	3
414446	Lab Practice III	-	04	-	-	-	25	-	25	50	-	2	-	2
414447	Lab Practice IV	-	02	-	-	-	25	25	-	50	-	1	-	1
414448	Project Stage-I	-	-	02	-	-	50	-	-	50	-	-	2	2
414449	Audit Course7													
Total Credit											15	03	02	20
Total		15	06	02	150	350	100	25	25	650	15	03	02	20
Elective III: • Mobile Computing • High Performance Computing • Multimedia Technology • Smart Computing					Elective IV: • Bioinformatics • Introduction to DevOps • Computer Vision • Wireless Communications									
Lab Practice-III: It is based on subjects: • Information and Storage Retrieval					Lab Practice-IV: It is based on subjects: • Deep Learning									
Audit Courses 7: • 414449A: Copyrights and Patents • 414449B: Stress Management by Yoga • 414449C: English for Research Paper Writing														

Savitribai Phule Pune University Final Year of Information Technology (2019Course) (With effect from Academic Year2022-23)														
Semester VIII														
Course Code	Course Name	Teaching Scheme (Hours/week)			Examination Scheme and Marks						Credit Scheme			
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Teamwork	Practical	Oral	Total	Lecture	Practical	Tutorial	Total
414450	Distributed Systems	03	-	-	30	70	-	-	-	100	03			03
414451	Elective V	03	-	-	30	70	-	-	-	100	03			03
414452	Elective VI	03	-	-	30	70	-	-	-	100	03			03
414453	Startup and Entrepreneurship	-	-	03	-	-	50	-	-	50	-	-	03	03
414454	Lab Practice V	-	04	-	-	-	50	25	-	75		02		02
414455	Lab Practice VI	-	02	-	-	-	25	-	50	75		01		01
414456	Project Stage II	-	10	-	-	-	100	-	50	150		05		05
414457	AuditCourse8													
Total Credit											09	08	03	20
Total		09	16	03	90	210	225	50	75	650	09	08	03	20
Elective V: - Software Defined Networks - Social Computing - Natural Language Processing - Soft Computing - Game Engineering					Elective VI: - Ethical Hacking and Security - Augmented and Virtual Reality - Business Analytics and Intelligence - Blockchain Technology									
Lab Practice V: It is based on subjects: Distributed Systems					Lab Practice VI: It is based on subjects: Elective VI									
Audit Courses 8: 414457A: Functional Programming in Haskell 414457B: Cyber Laws and Use of Social Media 414457C: Constitution of India														

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



Curriculum For
Third Year of Information Technology
(2019 Course)
(With effect from AY 2021-22)

Savitribai Phule Pune University Third Year of Information Technology (2019 course) (With effect from Academic Year 2021-22)														
Semester-V														
Course Code	Course Name	Teaching Scheme (Hours/ week)			Examination Scheme and Marks						Credit Scheme			
		Theory	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total
314441	Theory of Computation	03	-	-	30	70	-	-	-	100	3	-	-	3
314442	Operating Systems	03	-	-	30	70	-	-	-	100	3	-	-	3
314443	Machine Learning	03	-	-	30	70	-	-	-	100	3	-	-	3
314444	Human Computer Interaction	03	-	-	30	70	-	-	-	100	3	-	-	3
314445	Elective-I	03	-	-	30	70	-	-	-	100	3	-	-	3
314446	Operating Systems Lab	-	04	-	-	-	25	25	-	50	-	2	-	2
314447	Human Computer Interaction- Lab	-	02	-	-	-		-	50	50	-	1		1
314448	Laboratory Practice-I	-	04	-	-	-	25	25		50	-	2	-	2
314449	Seminar	-	01	-	-	-	50	-	-	50	-	1	-	1
314450	Audit Course 5	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Credit											15	06	-	21
Total		15	11	-	150	350	100	50	50	700	15	06	-	21
Abbreviations: TH: Theory, TW: Term Work, PR: Practical , OR: Oral ,TUT: Tutorial														
Elective-I: 314445A - Design and Analysis of Algorithm 314445B - Advanced Database and Management System 314445C - Design Thinking 314445D - Internet of Things Laboratory Practice-I:							Audit Course 5: 314450A -Banking and Insurance 314450B -Startup Ecosystems 314450C - Foreign Language–(Japanese Language- III)							
Assignment from Machine Learning and Elective I														
Note: Students of T.E. (Information Technology) can opt any one of the audit course from the list of audit courses prescribed by BoS (Information Technology)														

Savitribai Phule Pune University														
Third Year of Information Technology (2019 Course)														
(With effect from Academic Year 2021-22)														
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
314451	Computer Networks& Security	03	-	-	30	70	-	-	-	100	03			03
314452	Data Science and Big Data Analytics	03	-	-	30	70	-	-	-	100	03			03
314453	Web Application Development	03	-	-	30	70	-	-	-	100	03			03
314454	Elective-II	03	-	-	30	70	-	-	-	100	03			03
314455	Internship	-	04	-	-	-	100	-	-	100		04		04
314456	Computer Networks& Security-Lab	-	04	-	-	-	25	-	50	75		02		02
314457	DS & BDA-Lab	-	02	-	-	-	25	25	-	50		01		01
314458	Laboratory Practice-II	-	04	-	-	-	50	25	-	75		02		02
314459	Audit Course 6	-	-	-	-	-	-	-	-	-	-	-	-	-
Total											12	09	-	21
Total		12	14	-	120	280	200	50	50	700	12	09	-	21
Abbreviations: TH: Theory, TW: Term Work, PR: Practical , OR: Oral, TUT: Tutorial														
Elective-II:					Audit Course 6:									
314454A - Artificial Intelligence					314459A - Green and Unconventional Energy									
314454B - Cyber Security					314459B - Leadership and Personality Development									
314454C -Cloud Computing					314459C - Foreign Language-(Japanese Language- IV)									
314454D - Software Modeling and Design														
Laboratory Practice-II :														
Assignments from Web Application Development and Elective-II.														
Note: Students of T.E. (Information Technology) can opt any one of the audit course from the list of audit courses prescribed by BoS (Information Technology)														

Savitribai Phule Pune University

Faculty of Science and Technology



Syllabus for

B.E (Electronics & Telecommunication Engineering)

(Course 2019)

(w.e.f. June 2022)

Savitribai Phule Pune University, Pune
B.E. (Electronics & Telecommunication) 2019 Course
 (With effect from Academic Year 2022-23)

Semester-VII

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
404181	Radiation & Microwave Theory	03	-	-	30	70	-	-	-	100	03	-	-	03
404182	VLSI Design and Technology	03	-	-	30	70	-	-	-	100	03	-	-	03
404183	Cloud Computing	03	-	-	30	70	-	-	-	100	03	-	-	03
404184	Elective - 3	03	-	-	30	70	-	-	-	100	03	-	-	03
404185	Elective - 4	03	-	-	30	70	-	-	-	100	03	-	-	03
404186	Lab Practice - 1 (RMT & Cloud Computing)	-	04	-	-	-	25	-	50	75	-	02	-	02
404187	Lab Practice - 2 (VLSI Design & Elective -3)	-	04	-	-	-	25	50	-	75	-	02	-	02
404188	Project Stage - I	-	02	-	-	-	50	-	-	50	-	01	-	01
404189	Mandatory Audit Course 7	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		15	10	-	150	350	100	50	50	700	-	-	-	-
Total Credits											15	05	-	20

Elective - 3	Elective - 4
1. Speech Processing	1. Data Mining
2. PLC SCADA & Automation	2. Electronic Product Development
3. JAVA Script	3. Deep Learning
4. Embedded & RTOS	4. Low Power CMOS
5. Modernized IoT	5. Smart Antennas

Mandatory Audit Course - 7
1. Management Information System
2. Patent Search & Analysis
3. Knowledge Management
4. Energy Economics & Policy
5. Educational Leadership
6. Human Resource Development

Savitribai Phule Pune University, Pune
B.E. (Electronics & Telecommunication) 2019 Course
 (With effect from Academic Year 2022-23)

Semester-VIII

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
404190	Fiber Optic Communication	03	-	-	30	70	-	-	-	100	03	-	-	03
404191	Elective - 5	03	-	-	30	70	-	-	-	100	03	-	-	03
404192	Elective - 6	03	-	-	30	70	-	-	-	100	03	-	-	03
404193	Innovation & Entrepreneurship	-	-	02	-	-	50	-	-	50	-	-	02	02
404194	Digital Business Management	-	-	02	-	-	50	-	-	50	-	-	02	02
404195	Fiber Optic Lab	-	02	-	-	-	25	-	50	75	-	01	-	01
404196	Lab Practice - 3 (Elective - 5)	-	02	-	-	-	25	50	-	75	-	01	-	01
404197	Project Stage - II	-	10	-	-	-	100	-	50	150	-	05	-	05
Total		09	14	04	90	210	250	50	100	700	-	-	-	-
Total Credits											09	07	04	20

Elective - 5	Elective - 6
1. Biomedical Signal Processing	1. System on Chip
2. Industrial Drives & Automation	2. Nano Electronics
3. Android Development	3. Remote Sensing
4. Embedded System Design	4. Digital Marketing
5. Mobile Computing	5. Open Elective

Savitribai Phule Pune University

Faculty of Science and Technology



Syllabus for

T.E (Electronics & Telecommunication Engineering)

(Course 2019)

(w.e.f. June 2021)

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

**Curriculum
for
Final Year
of
Computer Science and Design
(2021 Course)
(With effect from 2024-25)**



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

Savitribai Phule Pune University
Fourth Year of Computer Science and Design(2021 Course)
(With effect from Academic Year 2024-25)

Semester VII	
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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\PR	Total	Lecture	Practical	Tutorial	Total
418241	Computer Vision	03	-	-	30	70	-	-	-	100	3	-	-	3
418242	Deep learning	03	-	-	30	70	-	-	-	100	3	-	-	3
418243	Game Design and Development	03	-	-	30	70	-	-	-	100	3	-	-	3
418244	Elective III	03	-	-	30	70	-	-	-	100	3	-	-	3
418245	Elective IV	03	-	-	30	70	-	-	-	100	3	-	-	3
418246	Laboratory Practice III	-	04	-	-	-	50	50	-	100	-	2	-	2
418247	Laboratory Practice IV	-	02	-	-	-	25	-	25	50	-	1	-	1
418248	Project Stage I	-	02	-	-	-	50	-	-	50	-	2	-	2
Total Credit											15	05	-	20
Total		15	08	-	150	350	125	50	25	700	15	05	-	20
418249	Audit Course 7										Grade			
Elective III					Elective IV									
(A) Object Oriented Modelling and Design (B) Software Testing and Quality Assurance (C) Blockchain Technology (D) Information Retrieval					(A) Natural Language Processing (B) Software Development for Portable devices (C) Compiler Design (D) Advanced UI/UX Design									
Laboratory Practice III: Laboratory assignments Courses- 418241, 418242,418243					Laboratory Practice IV: Laboratory assignments Courses- 418244, 418245									
Audit Course 7(AC7) Options: AC7- I MOOC- Learn New Skills AC7- II Entrepreneurship Development AC7- III Botnet of Things AC7- IV 3D Printing AC7- V Industrial Safety and Environment Consciousness														

Savitribai Phule Pune University
Fourth Year of Computer Science and Design (2021Course)
(With effect from Academic Year 2024-25)

Semester VIII	
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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\PR	Total	Lecture	Practical	Tutorial	Total
418250	Information & Cyber Security	03	-	-	30	70	-	-	-	100	3	-	-	3
418251	Generative AI	03	-	-	30	70	-	-	-	100	3	-	-	3
418252	Elective V	03	-	-	30	70	-	-	-	100	3	-	-	3
418253	Elective VI	03	-	-	30	70	-	-	-	100	3	-	-	3
418254	Laboratory Practice V	-	02	-	-	-	50	50	-	100		01	-	1
418255	Laboratory Practice VI	-	02	-	-	-	25	-	25	50	-	01	-	1
418256	Project Stage II	-	06	-	-	-	100	-	50	150	-	06	-	6
Total Credit											12	08	-	20
Total		12	10	-	120	280	175	50	75	700	12	08	-	20
418257	Audit Course 8										Grade			
Elective V						Elective VI								
(A) Computational Intelligence (B) Software Defined Networks (C) High Performance Computing (D) DevOps						(A) Data Visualization (B) Optimization Algorithm (C) GPU Programming and Architecture Design (D) Mobile Computing								
Laboratory Practice V: Laboratory assignments Courses- 418250,418251						Laboratory Practice VI Laboratory assignments Courses- 418252,418253								
Audit Course 8(AC8) Options: AC8- I Conversational Interfaces AC8- II social media and Analytics AC8- III MOOC- Learn New Skills AC8- IV Emotional Intelligence														

**Curriculum
for
Third Year
Computer Science and Design
(2021 Course)**

(With effect from 2023-24)



<http://unipune.ac.in>

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

Savitribai Phule Pune University														
Third Year of Computer Science and Design (2021 Course)														
(With effect from Academic Year 2023-24)														
Semester-V														
Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit Scheme			
		Lecture	Practical	Tutorial	In-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total
318241	Software Engineering and Project Management	03	-	-	30	70	-	-	-	100	03	-	-	03
318242	Theory of Computation	03	-	-	30	70	-	-	-	100	03	-	-	03
318243	Database System Design	03	-	-	30	70	-	-	-	100	03	-	-	03
318244	Design and analysis of Algorithm	03	-	-	30	70	-	-	-	100	03	-	-	03
318245	Elective – I	03	-	-	30	70	-	-	-	100	03	-	-	03
318246	Database System Design Laboratory	-	04	-	-	-	25	25	-	50	-	02	-	02
318247	Design And Analysis of algorithm Laboratory	-	02	-	-	-	25	25	-	50	-	01	-	01
318248	Laboratory Practice I	-	02	-	-	-	25	-	25	50	-	01	-	01
318249	Seminar and Technical Communication	-		01	-	-	25	-	-	25	-	-	01	01
318250	Environmental Studies	-	-	01	-	-	25	-	-	25	-	-	01	01
Total		15	08	02	150	350	125	50	25	700	15	04	02	21
310250	Audit Course 5										Grade			
		Total									15	04	02	21
** Elective-I Options		Audit Course 5 Options												
318245A: Internet of Things		310250A: Cyber Security												
318245B: Pattern Recognition		310250B: Professional Ethics and Etiquettes												
318245C: Distributed Systems		310250C: MOOC- Learn New Skills												
318245D: Data Mining and warehousing		310250D: Engineering Economics												
		310250E: Foreign Language												
Laboratory Practice I														
Assignments are based on Elective I Theory Course														

Savitribai Phule Pune University															
Third Year of Computer Science and Design (2021 Course)															
(With effect from Academic Year 2023-24)															
Semester-VI															
Course Code	Course Name	Teaching Scheme #(Hours/Week)			Examination Scheme and Marks						Credit Scheme				
		#Lecture	Practical	Tutorial	In-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total	
318251	Artificial Intelligence	04	-	-	30	70	-	-	-	100	03	-	-	03	
318252	Web Technology & Application Design	04	-	-	30	70	-	-	-	100	03	-	-	03	
318253	UI/UX Design	04	-	-	30	70	-	-	-	100	03	-	-	03	
318254	Elective – II	04	-	-	30	70	-	-	-	100	03	-	-	03	
310255	Internship**	-	**	-	-	-	100	-	-	100	-	04	-	04	
318255	Web Technology & Application Design Laboratory	-	04	-	-	-	50	-	25	75	-	02	-	02	
318256	UI/UX design Laboratory	-	02	-	-	-	25	-	25	50	-	01	-	01	
318257	Laboratory Practice II	-	04	-	-	-	50	25		75	-	02	-	02	
Total		16	10	-	120	280	225	25	50	700	12	09	-	21	
310259	Audit Course 6										Grade				
		Total									12	09	-	21	
318256 Elective II Options: 318254(A) Multimedia Techniques 318254(B) Augmented and Virtual Reality 318254(C) Cloud Computing 318254(D) Business Intelligence and Data Analytics		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 are based on Artificial Intelligence and Elective II Theory course															
Internship** Internship guidelines are provided in course curriculum sheet.															

Faculty of Engineering
Savitribai Phule Pune University, Pune
Maharashtra, India



Curriculum
for
Fourth Year of Computer Engineering
(2019 Course)
(With effect from 2022-23)

BE Computer Engineering 2019 Course tentative Curriculum structure:

Savitribai Phule Pune University Final Year of Computer Engineering (2019 Course) (With effect from Academic Year 2022-23)														
Semester VII														
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\Pre	Total	Lecture	Practical	Tutorial	Total
410241	Design and Analysis of Algorithms	03	-	-	30	70	-	-	-	100	3	-	-	3
410242	Machine Learning	03	-	-	30	70	-	-	-	100	3	-	-	3
410243	Blockchain Technology	03	-	-	30	70	-	-	-	100	3	-	-	3
410244	Elective III	03	-	-	30	70	-	-	-	100	3	-	-	3
410245	Elective IV	03	-	-	30	70	-	-	-	100	3	-	-	3
410246	Laboratory Practice III	-	04	-	-	-	50	50	-	100	-	2	-	2
410247	Laboratory Practice IV	-	02	-	-	-	50	-	-	50	-	1	-	1
410248	Project Stage I	-	02	-	-	-	50	-	-	50	-	2	-	2
Total Credit											15	05	-	20
Total		15	08	-	150	350	150	50	-	700	15	05	-	20
410249	Audit Course 7										Grade			
Elective III					Elective IV									
410244(A) Pervasive Computing 410244(B) Multimedia Techniques 410244(C) Cyber Security and Digital Forensics 410244(D) Object Oriented Modeling and Design 410244(E) Digital Signal Processing					410245(A) Information Retrieval 410245(B) GPU Programming and Architecture 410245(C) Mobile Computing 410245(D)Software Testing and Quality Assurance 410245(E) Compilers									
Laboratory Practice III: Laboratory assignments Courses- 410241, 410242, 410243					Laboratory Practice IV: Laboratory assignments Courses- 410244, 410245									
Audit Course 7(AC7) Options: AC7- I MOOC- Learn New Skills AC7- II Entrepreneurship Development AC7- III Botnet of Things AC7- IV 3D Printing AC7- V Industrial Safety and Environment Consciousness														

Savitribai Phule Pune University
Final Year of Computer Engineering (2019 Course)
(With effect from Academic Year 2022-23)

Semester VIII

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/Pre	Total	Lecture	Practical	Tutorial	Total
410250	High Performance Computing	03	-	-	30	70	-	-	-	100	03			03
410251	Deep Learning	03	-	-	30	70	-	-	-	100	03			03
410252	Elective V	03	-	-	30	70	-	-	-	100	03			03
410253	Elective VI	03	-	-	30	70	-	-	-	100	03			03
410254	Laboratory Practice V	-	02	-	-	-	50	50	-	100		01		01
410255	Laboratory Practice VI	-	02	-	-	-	50	-	-	50		01		01
410256	Project Stage II	-	06	-	-	-	100	-	50	150		06		06
Total Credit											12	08	-	20
Total		12	10	-	120	280	200	50	50	700	12	08	-	20
410257	Audit Course 8										Grade			
Elective V						Elective VI								
410252(A) Natural Language Processing						410253(A) Pattern Recognition								
410252(B) Image Processing						410253(B) Soft Computing								
410252(C) Software Defined Networks						410253(C) Business Intelligence								
410252(D) Advanced Digital Signal Processing						410253(D) Quantum Computing								
410252(E) Open Elective						410253(E) Open Elective								
Lab Practice V: Laboratory assignments Courses- 410250, 410251						Lab Practice VI: Laboratory assignments Courses- 410252, 410253								
Audit Course 8(AC8) Options: AC8- I Usability Engineering AC8- II Conversational Interfaces AC8- II Social Media and Analytics AC8- IV MOOC- Learn New Skills AC8- V Emotional Intelligence														

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



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**Curriculum
for
Third Year of Computer Engineering
(2019 Course)
(With effect from 2021-22)**

Savitribai Phule Pune University															
Third Year of Computer 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 Scheme				
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total	
310241	Database Management Systems	03	-	-	30	70	-	-	-	100	03	-	-	03	
310242	Theory of Computation	03	-	-	30	70	-	-	-	100	03	-	-	03	
310243	Systems Programming and Operating System	03	-	-	30	70	-	-	-	100	03	-	-	03	
310244	Computer Networks and Security	03	-	-	30	70	-	-	-	100	03	-	-	03	
310245	Elective I	03	-	-	30	70	-	-	-	100	03	-	-	03	
310246	Database Management Systems Laboratory	-	04	-	-	-	25	25	-	50	-	02	-	02	
310247	Computer Networks and Security Laboratory	-	02	-	-	-	25	-	25	50	-	01	-	01	
310248	Laboratory Practice I	-	04	-	-	-	25	25	-	50	-	02	-	02	
310249	Seminar and Technical Communication	-	01	-	-	-	50	-	-	50	-	01	-	01	
Total		15	11	-	150	350	125	50	25	700	15	06	-	21	
310250	Audit Course 5											Grade			
Total Credit											15	06	-	21	
Elective I						Audit Course 5									
Internet of Things and Embedded Systems Human Computer Interface Distributed Systems Software Project Management						- Cyber Security - Professional Ethics and Etiquettes - MOOC- Learn New Skills - Engineering Economics - Foreign Language									
Laboratory Practice I															
Assignments from Systems Programming and Operating System and Elective I															

Savitribai Phule Pune University
Third Year of Computer 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 Scheme			
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral	Total	Lecture	Practical	Tutorial	Total
310251	Data Science and Big Data Analytics	03	-	-	30	70	-	-	-	100	03	-	-	03
310252	Web Technology	03	-	-	30	70	-	-	-	100	03	-	-	03
310253	Artificial Intelligence	03	-	-	30	70	-	-	-	100	03	-	-	03
310254	Elective II	03	-	-	30	70	-	-	-	100	03	-	-	03
310255	Internship**	-	**	-	-	-	100**	-	-	100	-	04**	-	04
310256	Data Science and Big Data Analytics Laboratory	-	04	-	-	-	50	25	-	75	-	02	-	02
310257	Web Technology Laboratory	-	02	-	-	-	25	-	25	50	-	01	-	01
310258	Laboratory Practice II	-	04	-	-	-	50	25	-	75	-	02	-	02
Total											12	09	-	21
Total		12	10	-	120	280	225	50	25	700	12	05	-	21
310259	Audit Course 6												Grade	
Elective II Information Security Augmented and Virtual Reality Cloud Computing Software Modeling and Architectures					Audit Course 6 - Digital and Social Media Marketing - Sustainable Energy Systems - Leadership and Personality Development - Foreign Language - MOOC- Learn New Skills									
Laboratory Practice II: Assignments from Artificial Intelligence and Elective II .														
** Internship: Internship guidelines are provided in course curriculum sheet.														

Savitribai Phule Pune University

Faculty of Science & Technology



Curriculum/Syllabus

For

Third Year

**Bachelor of Engineering
(Choice Based Credit System)**

**Mechanical Engineering
(2019 Course)**

**Board of Studies – Mechanical and Automobile Engineering
(With Effect from Academic Year 2021-22)**

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 ^{\$}	-	-	-	-	-	-	-	-	-	-	-	-	-
	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 ^{\$}	-	-	-	-	-	-	-	-	-	-	-	-	-
	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. ^{\$}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.														

Savitribai Phule Pune University

Faculty of Science & Technology



Curriculum/Syllabus

For

Fourth Year

Bachelor of Engineering

(Choice Based Credit System)

Mechanical Engineering

(2019 Course)

Board of Studies – Mechanical and Automobile Engineering

(With Effect from Academic Year 2022-23)

Savitribai Phule Pune University
Board of Studies - Mechanical and Automobile Engineering
Undergraduate Program – Final Year 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-VII														
402041	Heating Ventilation Air-Conditioning and Refrigeration	3	2	-	30	70	-	-	25	125	3	1		4
402042	Dynamics of Machinery	3	2	-	30	70	-	-	25	125	3	1		4
402043	Turbomachinery	2	2	-	-	50	25	-	25	100	2	1	-	3
402044	Elective – III	3	-	-	30	70	-	-	-	100	3	-	-	3
402045	Elective - IV	3	-	-	30	70	-	-	-	100	3	-	-	3
402046	Data Analytics Laboratory	-	2	-	-	-	50	-	-	50	-	1	-	1
402047	Project (Stage - I)	-	4	-	-	-	50	-	50	100	-	2	-	2
	Total	14	12		120	330	125	-	125	700	14	6	-	20
Semester-VIII														
402048	Computer Integrated Manufacturing	3	2	-	30	70	25	-	25	150	3	1	-	4
402049	Energy Engineering	3	2	-	30	70	25	-	25	150	3	1	-	4
402050	Elective - V	3	-	-	30	70	-	-	-	100	3	-	-	3
402051	Elective - VI	3	-	-	30	70	-	-	-	100	3	-	-	3
402052	Mechanical Systems Analysis Laboratory	-	2	-	-	-	25	-	25	50	-	1	-	1
402053	Project (Stage - II)	-	10	-	-	-	100	-	50	150	-	5	-	5
		12	16	-	120	280	175	-	125	700	12	8	-	20
Elective-III					Elective-V									
402044A	Automobile Design	402050A			Quality and Reliability Engineering									
402044B	Design of Heat Transfer Equipments	402050B			Energy Audit and Management									
402044C	Modern Machining Processes	402050C			Manufacturing Systems and Simulation									
402044D	Industrial Engineering	402050D			Engineering Economics and Financial Management									
402044E	Internet of Things	402050E			Organizational Informatics									
402044F	Computational Fluid Dynamics	402050F			Computational Multi Body Dynamics									
Elective-IV					Elective-VI									
402045A	Product Design and Development	402051A			Process Equipment Design									
402045B	Experimental Methods in Thermal Engineering	402051B			Renewable Energy Technologies									
402045C	Additive Manufacturing	402051C			Automation and Robotics									
402045D	Operations Research	402051D			Industrial Psychology and Organizational Behavior									
402045E	Augmented Reality and Virtual Reality	402051E			Electrical and Hybrid Vehicle									

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

- Student can select any elective subjects from the list given as per his/her choice. However, it is advised to select the subjects from within a group identified for specialization.

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**.