

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


 Home

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:						310250 Audit Course 5 Options:								
310245(A) <u>Internet of Things and Embedded Systems</u>						310250 (A) <u>Cyber Security</u>								
310245(B) <u>Human Computer Interface</u>						310250 (B) <u>Professional Ethics and Etiquettes</u>								
310245(C) <u>Distributed Systems</u>						310250 (C) <u>Learn New Skills</u>								
310245(D) <u>Software Project Management</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														

Savitribai Phule Pune University
Third Year of Computer Engineering (2019 Course)
Elective I

310245(A): Internet of Things and Embedded Systems

Teaching Scheme: Credit: 03 Examination Scheme:
 Theory: 03 Mid-Sem (TH) : 30 Marks
 Hours/Week End-Sem (TH): 70 Marks

Prerequisites Courses: Digital Electronics and Logic Design (210245)

Companion Course: Laboratory Practice I (310248)

Course Objectives:

- To understand fundamentals of Internet of Things (IoT) and Embedded Systems
- To learn advances in Embedded Systems and IoT
- To learn methodologies for IoT application development
- To learn the IoT protocols, cloud platforms and security issues in IoT
- To learn real world application scenarios of IoT along with its societal and economic impact using case studies and real time examples

Course Outcomes:

On completion of the course, learners should be able to

- CO1: Understand the fundamentals and need of Embedded Systems for the Internet of Things
- CO2: Apply IoT enabling technologies for developing IoT systems
- CO3: Apply design methodology for designing and implementing IoT applications
- CO4: Analyze IoT protocols for making IoT devices communication
- CO5: Design cloud based IoT systems
- CO6: Design and Develop secured IoT applications

Course Contents

Unit I	Introduction to Embedded Systems	07 Hours
Definition, Characteristics of Embedded System, Real time systems, Real time tasks. Processor basics: General Processors in Computer Vs Embedded Processors, Microcontrollers, Microcontroller Properties, Components of Microcontrollers, System-On-Chip and its examples, Components of Embedded Systems, Introduction to embedded processor.		
#Exemplar/Case Studies	Installation of Real Time Operating System	
*Mapping of Course Outcomes for Unit I	CO1,CO2	
Unit II	Internet of Things : Concepts	07 Hours
Introduction to Internet of Things (IoT): Definition, Characteristics of IoT, Vision, Trends in Adoption of IoT, IoT Devices, IoT Devices Vs Computers, Societal Benefits of IoT, Technical Building Blocks. Physical Design of IoT: Things in IoT, Interoperability of IoT Devices, Sensors and Actuators, Need of Analog / Digital Conversion. Logical Design of IoT: IoT functional blocks, IoT enabling technologies, IoT levels and deployment templates, Applications in IoT.		
#Exemplar/Case Studies	Exemplary device: Raspberry Pi / Arduino: Programming: Arduino IDE/ Python, Interfacing. Other IoT Devices.	
*Mapping of Course Outcomes for Unit II	CO1,CO2	
Unit III	IoT: Design Methodology	07 Hours
IoT Design Methodology: Steps, Basics of IoT Networking, Networking Components, Internet		

Structure, Connectivity Technologies, IoT Communication Models and IoT Communication APIs, Sensor Networks, Four pillars of IoT: M2M, SCADA, WSN, RFID.

#Exemplar/Case Studies Home Automation using IoT communication models and IoT Communication APIs.

*Mapping of Course Outcomes for Unit III CO3, CO4

Unit IV IoT Protocols 07 Hours

Protocol Standardization for IoT, M2M and WSN Protocols, RFID Protocol, Modbus Protocol, Zigbee Architecture. IP based Protocols: MQTT (Secure), 6LoWPAN, LoRa.

#Exemplar/Case Studies LoRa based Smart Irrigation System.

*Mapping of Course Outcomes for Unit IV CO4, CO5

Unit V Cloud Platforms for IoT 07 Hours

Software Defined Networking, Introduction to Cloud Storage Models, Communication API. WAMP: Auto Bahn for IoT, Xively Cloud for IoT. Python Web Application Framework: Django Architecture and application development with Django, Amazon Web Services for IoT. Sky Net IoT Messaging Platform, RESTful Web Service, GRPC, SOAP.

#Exemplar/Case Studies Smart parking, Forest fire detection

*Mapping of Course Outcomes for Unit V CO4, CO5

Unit VI Security in IoT 07 Hours

Introduction, Vulnerabilities of IoT, Security Requirements, Challenges for Secure IoT, Threat Modeling. Key elements of IoT Security: Identity establishment, Access control, Data and message security, Non-repudiation and availability, Security model for IoT, Challenges in designing IoT applications, Lightweight cryptography.

#Exemplar/Case Studies Home Intrusion Detection

*Mapping of Course Outcomes for Unit VI CO2, CO6

Learning Resources

Text Books:

1. Arshdeep Bahga, Vijay Madisetti, "Internet of Things – A hands-on Approach", Universities Press, ISBN: 0: 0996025510, 13: 978-0996025515
2. Olivier Hersent, David Boswarthick, Omar Elloumi, "The Internet of Things: Key Applications and Protocols", 2nd Edition, Wiley Publication, ISBN: 978-1-119-99435-0

Reference Books:

1. Dawoud Shenouda Dawoud, Peter Dawoud, "Microcontroller and Smart Home Networks", ISBN: 9788770221566, e-ISBN: 9788770221559
2. Charles Crowell, "IoT-Internet of Things for Beginners: An Easy-to-Understand Introduction to IoT", ISBN-13 : 979-8613100194
3. David Hanes, Gonzalo Salgueiro, Robert Barton, Jerome Henry, "IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things", Cisco Press, ISBN-13: 978-1-58714-456-1 ISBN-10: 1-58714-456-5
4. David Etter, "IoT Security: Practical guide book", amazon kindle Page numbers, source ISBN: 1540335011.
5. Brian Russell, Drew Van Duren, "Practical Internet of Things Security", Second Edition,

Packt Publishing, ISBN: 9781788625821

6. Dr. Shriram K Vasudevan, Abhishek S Nagarajan, RMD Sundaram, "Internet of Things", Wiley publication, 2nd Edition, ISBN: 9789388991018

e-Books :

- <https://www.iotforall.com/ebooks/an-introduction-to-iot>
- <https://www.qorvo.com/design-hub/ebooks/internet-of-things-for-dummies>

MOOCs Courses link

- <https://nptel.ac.in/courses/106/105/106105166/>
- <https://www.udemy.com/course/a-complete-course-on-an-iot-system-design-and-development/>
- <https://www.coursera.org/learn/iot>
- <https://nptel.ac.in/courses/108/108/108108098/>

@ The CO-PO Mapping Matrix

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	2	-	-	-	-	1	-	1	-
CO2	3	2	1	2	1	-	-	-	-	-	-	-
CO3	2	3	3	3	2	3	-	-	2	-	1	-
CO4	1	2	2	2	3	3	-	-	2	1	2	2
CO5	2	2	2	3	3	3	-	-	2	1	2	2
CO6	2	2	1	2	2	2	-	1	1	-	1	1

SIR VISVESVARAYA INSTITUTE OF TECHNOLOGY, CHINCHOLI

Department of Computer Engineering

Elective I choice 2023-24 (SEM-1)

SR.NO	Timestamp	Name of student	Elective selected
1	7-8-2023 17:27:24	Aniket Arun Gayke	(A) 310245 Internet of Things and Embedded Systems
2	7-8-2023 17:57:48	Jagtap yogeshwaree bharat	(B) 310245 Human Computer Interface
3	7-8-2023 20:13:42	Prathmesh Harish Patil	(A) 310245 Internet of Things and Embedded Systems
4	7-10-2023 9:41:24	Jadhav shaunak	(D) 310245 Software Project Management
5	7-10-2023 9:44:36	kunal chaudhari	(A) 310245 Internet of Things and Embedded Systems
6	7-10-2023 14:47:45	Abhishek ajit Kushwaha	(A) 310245 Internet of Things and Embedded Systems
7	7-10-2023 14:50:40	Surve Shashikant Dilip	(A) 310245 Internet of Things and Embedded Systems
8	7-10-2023 22:27:56	Ugale suraj machhindra	(A) 310245 Internet of Things and Embedded Systems
9	7-10-2023 22:42:11	More Avadhut Prakash	(A) 310245 Internet of Things and Embedded Systems
10	7-10-2023 23:07:25	Aditya Matsagar	(A) 310245 Internet of Things and Embedded Systems
11	7-10-2023 23:51:29	Hon Uddhav Digambar	(A) 310245 Internet of Things and Embedded Systems
12	7-11-2023 0:35:04	Priti sharad ugale	(A) 310245 Internet of Things and Embedded Systems
13	7-11-2023 6:45:31	Sakshi Satish Shewale	(A) 310245 Internet of Things and Embedded Systems
14	7-11-2023 7:18:44	Ranade Gauri Dnyaneshwar	(A) 310245 Internet of Things and Embedded Systems
15	7-11-2023 7:41:58	Mali Mansi Sunil	(A) 310245 Internet of Things and Embedded Systems
16	7-11-2023 10:08:31	Jivitesh Ishwar Kale	(A) 310245 Internet of Things and Embedded Systems
17	7-11-2023 10:36:35	Sejal Yogesh Pawar	(A) 310245 Internet of Things and Embedded Systems
18	7-11-2023 11:45:44	Daware Maheshwari Sampat	(A) 310245 Internet of Things and Embedded Systems
19	7-11-2023 13:48:24	Swanand Gholap	(A) 310245 Internet of Things and Embedded Systems
20	7-11-2023 14:25:45	Tambe Sayali Subhash	(A) 310245 Internet of Things and Embedded Systems
21	7-11-2023 17:55:33	Avhad Nikita Sanjay	(A) 310245 Internet of Things and Embedded Systems
22	7-11-2023 20:59:35	Anushka Sunil Patil	(A) 310245 Internet of Things and Embedded Systems
23	7-12-2023 13:19:59	Rutuja Dnyaneshwar Sanap	(A) 310245 Internet of Things and Embedded Systems
24	7-12-2023 17:29:19	Shubhangi Santosh Pawar	(A) 310245 Internet of Things and Embedded Systems
25	7-12-2023 17:32:37	Nikhil Rajput	(A) 310245 Internet of Things and Embedded Systems
26	7-12-2023 20:15:21	Netra Sunil Walekar	(A) 310245 Internet of Things and Embedded Systems

SIR VISVESVARAYA INSTITUTE OF TECHNOLOGY, CHINCHOLI

Department of Computer Engineering

Elective I choice 2023-24 (SEM-I)

SR.NO	Timestamp	Name of student	Elective selected
1	7-8-2023 17:27:24	Aniket Arun Gayke	(A) 310245 Internet of Things and Embedded Systems
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26	7-12-2023 20:15:21	Netra Sunil Walekar	(A) 310245 Internet of Things and Embedded Systems

27	7-13-2023 9:30:40	Mhaske Vaishnavi Babasaheb	(A) 310245 Internet of Things and Embedded Systems
28	7-13-2023 9:31:16	Erande Shubham Ravsaheb	(A) 310245 Internet of Things and Embedded Systems
29	7-13-2023 9:32:16	Andhale Shruti Janardhan	(A) 310245 Internet of Things and Embedded Systems
30	7-13-2023 9:32:41	Aaditya Patil	(A) 310245 Internet of Things and Embedded Systems
31	7-13-2023 9:34:18	Soham girish mokashi	(B) 310245 Human Computer Interface
32	7-13-2023 9:34:59	Patil Harshal Ramesh	(A) 310245 Internet of Things and Embedded Systems
33	7-13-2023 9:37:04	Wable Rutuja Balasaheb	(A) 310245 Internet of Things and Embedded Systems
34	7-13-2023 9:37:09	Rudrani Suryakant Dharankar	(A) 310245 Internet of Things and Embedded Systems
35	7-13-2023 9:37:17	Valvi Vishal Virendra	(A) 310245 Internet of Things and Embedded Systems
36	7-13-2023 9:39:09	Varpe Pooja Babasaheb	(A) 310245 Internet of Things and Embedded Systems
37	7-13-2023 9:40:19	Aditi dattatray shelke	(A) 310245 Internet of Things and Embedded Systems
38	7-13-2023 9:43:27	Mansi Sampat Andhale	(A) 310245 Internet of Things and Embedded Systems
39	7-13-2023 9:43:28	Sanket Girju Tamnar	(A) 310245 Internet of Things and Embedded Systems
40	7-13-2023 9:45:18	Ranade Rutuja Raosaheb	(A) 310245 Internet of Things and Embedded Systems
41	7-13-2023 9:46:14	Tarde Tejasvi Vijay	(A) 310245 Internet of Things and Embedded Systems
42	7-13-2023 9:55:51	Raut Nikita Madhukar	(A) 310245 Internet of Things and Embedded Systems
43	7-13-2023 10:07:39	Mahatme Sakshi Rajendra	(A) 310245 Internet of Things and Embedded Systems
44	7-13-2023 10:10:47	Prutha ravindra bhavsar	(A) 310245 Internet of Things and Embedded Systems
45	7-13-2023 10:14:51	Khatale Tushar Ashok	(A) 310245 Internet of Things and Embedded Systems
46	7-13-2023 10:35:34	Jadhav Chetan Sandip	(A) 310245 Internet of Things and Embedded Systems
47	7-13-2023 10:39:12	Kshirsagar Vaishnavi Dnyaneshwar	(A) 310245 Internet of Things and Embedded Systems
48	7-13-2023 11:03:49	Tambe Sakshi Rajendra	(A) 310245 Internet of Things and Embedded Systems
49	7-13-2023 11:28:23	Ashish Lagad	(A) 310245 Internet of Things and Embedded Systems
50	7-13-2023 11:53:26	Chaitanya Kiran Jadhav	(A) 310245 Internet of Things and Embedded Systems
51	7-13-2023 11:57:29	Rohit Sanjay Mahajan	(A) 310245 Internet of Things and Embedded Systems
52	7-13-2023 13:51:51	Aman Narayan Pawar	(A) 310245 Internet of Things and Embedded Systems
53	7-13-2023 14:11:21	Avhad Krushna Navnath	(A) 310245 Internet of Things and Embedded Systems
54	7-13-2023 15:03:11	Shaikh Mo Zaid Anis	(A) 310245 Internet of Things and Embedded Systems
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58	7-14-2023 10:57:35	Kadam Prashant Bajirao	(A) 310245 Internet of Things and Embedded Systems
59	7-14-2023 11:51:52	Bhushan Bhanudas Poldar	(A) 310245 Internet of Things and Embedded Systems
60	7-14-2023 17:36:10	Pratik Bhausaheb Dhumal	(A) 310245 Internet of Things and Embedded Systems
61	7-15-2023 13:26:07	Nishigandha Ajay Ingle	(A) 310245 Internet of Things and Embedded Systems
62	7-15-2023 18:13:47	Nikita Kiran Thoke	(A) 310245 Internet of Things and Embedded Systems
63	7-16-2023 7:56:15	Namrata Sanjay Waje	(A) 310245 Internet of Things and Embedded Systems
64	7-16-2023 8:21:11	Patole Pratik Suryabhan	(A) 310245 Internet of Things and Embedded Systems


Mr. Sharad M. Rokade
 HOD, Computer Department
Asstt. Prof. & H.O.D
 Computer Engineering Department
 SVIT, Chincholi,
 Tal. Sinnar, Dist. Nashik (422 101)

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 403150 C: Smart Grid 403150 D: Sensor Technology (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.

Dept. of Electrical Engg.

Sri Visvesvaraya Institute of Technology
Chincholi, Nashik - 422101

BE Electrical (2019 Course)

Sir Visvesvaraya Institute of Technology, Chincholi

ELECTRICAL ENGINEERING DEPARTMENT

SEM-I 2023-24

Class:BE

Sr.NO	Seat No	Name of the candidate	Name EL-I& II
1	B190272506	EKHANDI YASH VILAS	Elective I 403143HIGH VOLTAGE ENGINEERING &Elective II 403144B ELECTRIC AND HYBRID VEHICAL
2	B190272512	KADAM TEJASHREE YOGESH	
3	B190272513	KALOKHE SWAPNIL HARIBHAU	
4	B190272523	PRACHI RAJU NAGARE	
5	B190272525	SANAP PRATHAMESH RAJENDRA	
6	B190272544	UGALE SAHIL BHASKAR	


ACADEMIC COORDINATOR


H.O.D.
Dept. of Electrical Engg.
Sir Visvesvaraya Institute of
Chincholi, Nashik - 422104

Sir Visvesvaraya Institute of Technology, Chincholi

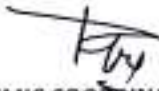
ELECTRICAL ENGINEERING DEPARTMENT

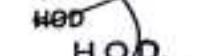
SEM-II

2023-24

Class:BE

Sr.NO	Seat No	Name of the candidate	Name EL-III& IV
1	B190272506	EKHANDI YASH VILAS	Elective III 403150C Smart Grid&Elective IV 403151B Illumination Engineering
2	B190272512	KADAM TEJASHREE YOGESH	
3	B190272513	KALOKHE SWAPNIL HARIBHAU	
4	B190272523	PRACHI RAJU NAGARE	
5	B190272525	SANAP PRATHAMESH RAJENDRA	
6	B190272544	UGALE SAHIL BHASKAR	


ACADEMIC COORDINATOR


H.O.D.
Dept. of Electrical Engg.
Sir Visvesvaraya Institute of Technology
Chincholi, Dist. Solapur - 422101

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

H.O.D.
 Department of Electronics & Telecommunication Engg.
 SVIT, Tal. Sinnar,
 Dist. Nashik

Savitribai Phule Pune University
Fourth Year of E & Tc Engineering (2019 Course)
404191 (E): Mobile Computing (Elective - V)

Teaching Scheme:	Credit	Examination Scheme:
Theory: 03 Hrs. / Week	03	In-Sem (Theory): 30 Marks End Sem (Theory): 70 Marks

Prerequisite Courses, if any:

1. Basics of Communication Technologies.
2. Fundamental of Networking

Companion Course, if any:

Course Objectives:

1. To learn Wireless technologies and planning Ad-hoc Network.
2. To study the basics of wireless, cellular technology and the working of Mobile IP, ad hoc network, features of mobile operating systems.
3. To understand the use of M-Commerce application.

Course Outcomes: On completion of the course, learner will be able to -

- CO1:** Understand concepts of Mobile Communication.
CO2: Analyse next generation Mobile Communication System.
CO3: Understand network layers of Mobile Communication.
CO4: Understand IP and Transport layers of Mobile Communication.
CO5: Study of different mathematical models.
CO6: Understand different mobile applications.

Course Contents

Unit I	Introduction to Mobile Computing	6 Hrs.
Introduction to Mobile Computing: Applications of Mobile Computing- Generations of Mobile Communication Technologies, Multiplexing: Spread spectrum, MAC Protocols: SDMA, TDMA, FDMA, and CDMA.		
Mapping of Course Outcomes for Unit I	CO1: Understand concepts of Mobile Communication.	
Unit II	Mobile Telecommunication System	7 Hrs.
Introduction to Cellular Systems, GSM architecture, Protocols, Connection Establishment, Frequency Allocation, Routing, Mobility Management, Security, GPRS and UMTS: Architecture, Handover, Security.		
Introduction to 5G: Introduction, 5G network architecture, Applications, 5G enable technologies, Recent trends in Telecommunication Industries.		
Mapping of Course Outcomes for Unit II	CO2: Analyse next generation Mobile Communication System.	

Unit III	Network Layer	6 Hrs.
Mobile IP, DHCP, AdHoc, Proactive protocol-DSDV, Reactive Routing Protocols: DSR, AODV, Hybrid routing: ZRP, Multicast Routing: ODMRP, Vehicular Ad Hoc networks (VANET), MANET Vs VANET: Security.		
Mapping of Course Outcomes for Unit III	CO3: Understand network layers of Mobile Communication.	
Unit IV	Mobile IP and Transport Layer	8 Hrs.
Mobile IP: Need of mobile IP, IP packet delivery, Agent Discovery, Registration, Tunnelling and encapsulation, Route optimization, IP Handoff.		
Transport Layer: Overview of Traditional TCP and implications of mobility control. Improvement of TCP: Indirect TCP, Snoop TCP, Mobile TCP, Fast Retransmit/fast recovery, Time-out freezing, Selective retransmission, Transaction-oriented TCP.		
Mapping of Course Outcomes for Unit IV	CO4: Understand IP and TCP layers of Mobile Communication.	
Unit V	Fading Channels	7 Hrs.
Rayleigh Fading and Statistical Characterization, Properties of Rayleigh Distribution, BER in Fading, Narrowband vs Wideband Channels, Characterization of Multipath Fading Channels, Choice of Modulation, Coherent versus Differential Detection, BER in Fading, Ricean Fading.		
Mapping of Course Outcomes for Unit V	CO5: Study of different mathematical models.	
Unit VI	Operating System & Applications of Mobile Computing	8 Hrs.
Operating System: A Few Basic Concepts, Special Constraints and Requirements of Mobile OS, A Survey of Commercial Mobile Operating Systems, Windows Mobile, Palm OS, Symbian OS, iOS, Android, Blackberry OS, A Comparative study of Mobile OS, OS for sensor Network.		
Applications: M-Commerce, Business to Consumer (B2C) Applications, Business to Business (B2B) Applications. Structure of M-Commerce, Pros and Cons of M-Commerce, Mobile Payment System, Mobile Payment Schemes, Desirable properties of a Mobile Payment system, Mobile Payment solutions, Process of Mobile Payment, Security Issues.		
Mapping of Course Outcomes for Unit VI	CO6: Understand different mobile applications.	
Learning Resources		
Text Books:		
1. Clint Smith, Daniel Collins, "Wireless Networks", 3 rd Edition, McGraw Hill Publications,		
2. Share Conder, Lauren Darcey, "Android Wireless Application Development", Volume 1, 3 rd Edition, Pearson.		

Reference Books:

1. Jochen Schiller, "Mobile Communications", 2nd Edition, Pearson.
2. Paul Bedell, "Cellular networks: Design and Operation – A real world Perspective", Outskirts Press.
3. Zigurd Mednieks, Laird Dornin, G, Blake Meike and Masumi Nakamura, "Programming Android", O'Reilly.
4. Alasdair Allan, "iPhone Programming", O'Reilly.
5. Donny Wals, "Mastering iOS 12 Programming".
6. Reza B"Far, "Mobile Computing principles", Cambridge University Press.

MOOC / NPTEL Courses:

1. NPTEL Course "Mobile Computing" by Prof. Sridhar Iyer and Prof. Pushpendra Singh IIT Madras

Link of the Course: <https://nptel.ac.in/courses/106106147>

2. NPTEL Course "Fundamentals of MIMO Wireless Communication" by Prof. Suvra Sekhar Das IIT Kharagpur

Link of the Course: <https://nptel.ac.in/courses/117105132>

3. NPTEL Course "Principles of Modern CDMA/MIMO/OFDM Wireless Communications" by Prof. Aditya. K. Jagannatham IIT Kanpur

Link of the Course: <https://nptel.ac.in/courses/117104115>

H.O.D.
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Dist. Nashik


Electronics and Telecommunication Engineering


Notice

Date: 1.12.2023

All BE E&TC students are hereby informed that following Elective Subjects are offered by PPU and all are requested to give their choice for elective subject in given format

Academic Year	Semester	Name of the Class	Name of Elective Subject
2023 24	Sem 2	B.E. E&TC(2019 Course)	Elective - 5 1. Biomedical Signal Processing 2. Industrial Drives & Automation 3. Android Development 4. Embedded System Design 5. Mobile Computing
			Elective - 6 1. System on Chip 2. Nano Electronics 3. Remote Sensing 4. Digital Marketing 5. Open Elective


Class Teacher
Mr. Liladhar Bhamare


HOD ETC
Dr Rana Mahajan
H.O.D.
Department of Electronics & Telecommunication Engg
S.Y.B.T. Pimpri, Dist. Nashik
H.O.D.
Department of Electronics & Telecommunication Engg
S.Y.B.T. Pimpri, Dist. Nashik

Electronics and Telecommunication Engg
Elective V subject choice B.E. E&TC 2023 24 Sem 2

Roll No	Name	Subject elected	Signature
1	Dawar Rubiya	mobile computing	
2	Pranav Karwar	Mobile Computing	
3	Shabab Ashwini	mobile computing	
4	Ganesh Nandini	mobile computing	
5	Rahul Sadgiri	Mobile computing	
6	Shital Ashav	Mobile Computing	
7	Aditya Shinde	Mobile Computing	
8	Shabab Ashwini	mobile computing	
9	Keyur Patil	MC	
10	Sachin Vanshi	MC	
11	Ankit Mawga	mobile computing	
12	Shubhangi Guesal	Mobile computing	
13	Akash Maity	Mobile Computing	
14	Gite Rubiya	mobile computing	
15	Shubham mandlik	Mobile computing	
16	Chaitali Kate	mobile computing	
17	Rohit Rubiya	mobile computing	
18	Deon Dilatama	mobile computing	
19	Shinde Shmuthi	mobile computing	

Class Teacher

Mr. Liladhar Bhamare

HOD ETC

Dr Rana Mahajan

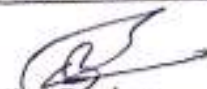
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Dist. Nashik

Electronics and Telecommunication Engg

Elective VI subject choice B.E. E&TC 2023 24

Sem 2

Roll No	Name	Subject elected	Signature
1	Pawar Rutuja	DM digital mkt	Pawar
2	Pramod Karwar	Digital Marketing	Pramod
3	Dhatrak Ashwini	DM	Ashwini
4	Navit Nandini	DM	Navit
5	Rahul Sadgar	Digital marketing	Rahul
6	Shital Aghav	DM	Shital
7	Aditya Shinde	Digital Marketing	Aditya
8	Ashwini Phubad	DM	Ashwini
9	Keyur Poti	DM	Keyur
10	Sate Varkhate	DM	Sate
11	Ankit maurya	Digital marketing	Ankit
12	Shubhangi Guesal	Digital marketing	Shubhangi
13	Akash Maity	Digital Marketing	Akash
14	Gite Rutuja	Digital Marketing	Gite
15	Shubham mandlik	Digital marketing	Shubham
16	Chaitali Kate	DM	Chaitali
17	Kokate Rutuja	DM	Kokate
18	Degre Tilottama	DM	Degre
19	Shinde smriti	DM	Shinde


Class Teacher

Mr. Liladhar Bhamare


HOD ETC

Dr. Rana Mahajan

HOD
Department of Electronics & Telecommunication Engg
SVET, Tal. Nashik,
Dist. Nashik

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:

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)

Audit Course 5:

314450A-Banking and Insurance

314450B-Startup Ecosystems

314450C- Foreign Language-(Japanese Language- III)



Pravara Rural Education Society's
SIR VISVEVSRAYA INSTITUTE OF TECHNOLOGY, Nashik
DEPARTMENT OF INFORMATION TECHNOLOGY
TEIT Elective Choice (SEM-I 2023-24)

Sr.No	Roll No	Name of Student	Elective II	Sign
1	1	ANDHALE MAYUR NATHU	Internet of Things	Andhale
2	2	BADGUJAR NIRAJ VIJAY	Internet of Things	Niraj
3	3	BHABAD NISHANT ANIL	Internet of Things	Nishant
4	4	BHAGAT PIYUSH SANJAY	Internet of Things	Piyush
5	5	BODKE NALINEE SOMANATH	Internet of Things	Nalinee
6	6	BODKE SHRADHA DIRAK	Internet of Things	Shradha
7	7	DAWARE RAHUL KIRAN	Internet of Things	Rahul
8	8	DONGARE SNEHAL ANIL	Internet of Things	Snehal
9	9	DAWKHAR ANUJ RAVINDRA	Internet of Things	Anuj
10	10	DESHPANDE HARSH PRAVIN	Internet of Things	Harsh
11	11	DUMBARE VAISHNAVI BABASAHEB	Internet of Things	Vaishnavi
12	12	GADAKH NIKHIL BHAUSAHEB	Internet of Things	Nikhil
13	13	GAWALI TUSHAR DNYANESHWAR	Internet of Things	Tushar
14	14	GHUGE TEJAL SURESH	Internet of Things	Tejal
15	15	GHUGE VAISHNAVI LAHANU	Internet of Things	Vaishnavi
16	16	GODSE RITU MANGESH	Internet of Things	Ritu
17	17	GADAKH MAHESHWARI MADHUKAR	Internet of Things	Maheshwari
18	18	JADHAV RUTUJA KISHOR	Internet of Things	Rutuja
19	19	JAWALE ATHARV MANOHAR	Internet of Things	Atharv
20	20	KANGANE ANKITA SUBHASH	Internet of Things	Ankita
21	22	KAVTHE TEJAL SUNIL	Internet of Things	Tejal
22	23	MORE RUTUJA ANIL	Internet of Things	Rutuja
23	24	NANDE KUNAL DEVIDAS	Internet of Things	Kunal
24	25	PANSARE VINAY BABASAHEB	Internet of Things	Vinay
25	26	SONAWANE JAYESH ISHWAR	Internet of Things	Jayesh
26	27	SONAWANE PALLAVI SHARAD	Internet of Things	Pallavi
27	28	SADGIR SARITA RAMBHAU	Internet of Things	Sarita
28	29	SANAP GAYATRI AJAY	Internet of Things	Gayatri
29	30	SANAP ROHIT CHANDRAKANT	Internet of Things	Rohit
30	31	SAYYED MOHAMMAD ABUTORAB JAFRI	Internet of Things	Mohammad
31	32	SHELKE ADITI ARUN	Internet of Things	Aditi
32	33	SHINDE BHAKTI DATTATRAY	Internet of Things	Bhakti
33	34	SHIRSAT VIKI PUNJARAM	Internet of Things	Viki
34	35	SHIVOM RAJENDRA PANDHARE	Internet of Things	Rajendra
35	36	SONAWANE VISHAKHA ANAND	Internet of Things	Vishakha
36	37	TIRPUDE ROHAN BUDDHESHWAR	Internet of Things	Rohan
37	38	THOMBARE SHUBHANGI RADHAKISAN	Internet of Things	Shubhangi
38	39	WAGH HARSHAL PRASHANT	Internet of Things	Harshal
39	40	WAKODE PRANIT SANJAY	Internet of Things	Pranit
40	41	WARUNGASE VARSHA NANDU	Internet of Things	Varsha
41	42	GARJE ASHWINI PRALHAD	Internet of Things	Ashwini
42	43	MOHITE SAKSHI BALASAHEB	Internet of Things	Sakshi
43	45	LIPTE GAURI VIJAY	Internet of Things	Gauri
44	46	AGHAV RUTUJA SHARAD	Internet of Things	Rutuja
45	47	PAWAR SIDDHESH NAVNATH	Internet of Things	Siddhesh
46	48	SONAWANE YOGITA NAMDEO	Internet of Things	Yogita
47	49	WAMANE DEVENDRA SURYABHAN	Internet of Things	Devendra
48	P51	GHUMARE AMIT VILAS	Internet of Things	Amit

49	52	GUNJAL RUTIK DNYANDEO	Internet of Things	<i>Pratik</i>
50	54	PATIL RUGVED PRADIP	Internet of Things	<i>Pratik</i>
51	55	KOLHE PRATIK RAJENDRA	Internet of Things	<i>Pratik</i>
52	56	DEORE VIRAJ CHANDRAKANT	Internet of Things	<i>Pratik</i>
53	P57	LAHANE NIRMALA P.	Internet of Things	<i>Pratik</i>
54	58	KURHADE OM SHANTARAM	Internet of Things	<i>Pratik</i>
55	P59	MAPARI DARSHAN ARUN	Internet of Things	<i>Pratik</i>
56	61	SANGALE PAYAL SAMPAT	Internet of Things	<i>Pratik</i>
57	62	DESHMUKH AKASH SAMBHAJI	Internet of Things	<i>Pratik</i>
58	63	WALVE VIJAYA RAJARAM	Internet of Things	<i>Pratik</i>
59	P64	DHANRAJ ARATI SUNIL	Internet of Things	<i>Pratik</i>
60	P65	CHINE AARTI MOHAN	Internet of Things	<i>Pratik</i>
61	66	BHAGAT SAKSHI VIJAY	Internet of Things	<i>Pratik</i>
62	67	RUMANE PRITI GANGARAM	Internet of Things	<i>Pratik</i>
63	68	JADHAV POOJA GORAKH	Internet of Things	<i>Pratik</i>

(Ms. Suvama Chogare)
TEIT Class Teacher

(Mr. Rushikesh S. Bhalerao)
HOD, Department
Department of Information Technology
Sir Vivekananda Institute of Technology
Chincholi, Nashik - 422 002

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
<u>314451</u>	Computer Networks & Security	03	-	-	30	70	-	-	-	100	03			03
<u>314452</u>	Data Science and Big Data Analytics	03	-	-	30	70	-	-	-	100	03			03
<u>314453</u>	Web Application Development	03	-	-	30	70	-	-	-	100	03			03
<u>314454</u>	Elective-II	03	-	-	30	70	-	-	-	100	03			03
<u>314455</u>	Internship	-	04	-	-	-	100	-	-	100		04		04
<u>314456</u>	Computer Networks & Security-Lab	-	04	-	-	-	25	-	50	75		02		02
<u>314457</u>	DS & BDA-Lab	-	02	-	-	-	25	25	-	50		01		01
<u>314458</u>	Laboratory Practice-II	-	04	-	-	-	50	25	-	75		02		02
<u>314459</u>	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:

314454A- Artificial Intelligence

314454B- Cyber Security

314454C -Cloud Computing

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)

Audit Course 6:

314459A - Green and Unconventional Energy

314459B - Leadership and Personality Development

314459C- Foreign Language-(Japanese Language- IV)



Pravara Rural Education Society's
SIR VISVEVSRAYA INSTITUTE OF TECHNOLOGY, Nashik
DEPARTMENT OF INFORMATION TECHNOLOGY
TEIT Elective Choice (SEM-II 2023-24)

Roll No	Name of Student	Elective I	Sign
1	AGHAY RUTUJA SHARAD	Software Modeling & Design	[Signature]
2	ANDHATE MAYUR NATHU	Software Modeling & Design	[Signature]
3	BADGUJAR NIRAJ VIJAY	Software Modeling & Design	[Signature]
4	BHATNAGAR NISHANT ANIL	Software Modeling & Design	[Signature]
5	BHATNAGAR PIYUSH SANJAY	Software Modeling & Design	[Signature]
6	BHATNAGAR SAKSHI VIJAY	Software Modeling & Design	[Signature]
7	BHOSKE NALINI SOMANATH	Software Modeling & Design	[Signature]
8	BHOSKE NIRADHIA DIPAK	Software Modeling & Design	[Signature]
9	DAWARI RAHUL KIRAN	Software Modeling & Design	[Signature]
10	DAWKHAR ANUR RAVINDRA	Software Modeling & Design	[Signature]
11	DEORE VIRAJ CHANDRAKANT	Software Modeling & Design	[Signature]
12	DESHMUKH AKASH SAMBHAJI	Software Modeling & Design	[Signature]
13	DESHMUKH HARSH PRAVIN	Software Modeling & Design	[Signature]
14	DONGARE SNIHAL ANIL	Software Modeling & Design	[Signature]
15	DUMHARE VAISHNAVI BABASAHEB	Software Modeling & Design	[Signature]
16	GADAKHIMATH SHIVARI MADHUKAR	Software Modeling & Design	[Signature]
17	GADAKHIMATH BHASABHAI	Software Modeling & Design	[Signature]
18	GARJE ANSHWINI PRAHAD	Software Modeling & Design	[Signature]
19	GAWALI TUSHAR DNYANESHWAR	Software Modeling & Design	[Signature]
20	GHUGE TEJAS SURESH	Software Modeling & Design	[Signature]
21	GHUGE VAISHNAVILAHANU	Software Modeling & Design	[Signature]
22	GODSE RITU MANGESH	Software Modeling & Design	[Signature]
23	GUNJAL RUTIK DNYANDEV	Software Modeling & Design	[Signature]
24	JADHAV POOJA GURAKH	Software Modeling & Design	[Signature]
25	JADHAV RUTUJA KINOR	Software Modeling & Design	[Signature]
26	JAWALE ATHARV MANOHAR	Software Modeling & Design	[Signature]
27	KANGANE ANKITA SUBHASH	Software Modeling & Design	[Signature]
28	KAVTHE HIRAJ SUNIL	Software Modeling & Design	[Signature]
29	KOTHE PRATIK RAJENDRA	Software Modeling & Design	[Signature]
30	LIPTE GAURI VIJAY	Software Modeling & Design	[Signature]
31	MADHARI DARSHAN ARUN	Software Modeling & Design	[Signature]
32	MISHRA SAKSHI BABASAHEB	Software Modeling & Design	[Signature]
33	MORI RUTUJA ANIL	Software Modeling & Design	[Signature]
34	NANDE KUNAL DEVIDAS	Software Modeling & Design	[Signature]
35	PANDE VINAY BABASAHEB	Software Modeling & Design	[Signature]
36	PATIL JIVAN SURESH	Software Modeling & Design	[Signature]
37	PATIL RUGVLD PRADIP	Software Modeling & Design	[Signature]
38	PAWAR SIDDHESH NAVNATH	Software Modeling & Design	[Signature]
39	PRUTHI GANGARAM RUMANE	Software Modeling & Design	[Signature]
40	SADGIR SARITA RAKHIBHAJI	Software Modeling & Design	[Signature]
41	SANAP GAYATHRI AJAY	Software Modeling & Design	[Signature]
42	SANAP ROHIT CHANDRAKANT	Software Modeling & Design	[Signature]
43	SAYYED MOHAMMAD ABUTORAB JAFRI	Software Modeling & Design	[Signature]
44	SHELKE ADITHYAN ARUN	Software Modeling & Design	[Signature]
45	SHINDE BHAKTI DATTATRAY	Software Modeling & Design	[Signature]
46	SHIRSAT VIKI PUNJARAM	Software Modeling & Design	[Signature]
47	SHIVOM RAJENDRA PANDHARI	Software Modeling & Design	[Signature]

48	SONAWANE JAYESHISHWAR	Software Modeling & Design	Pranav
49	SONAWANE PALAVISHARAD	Software Modeling & Design	Pranav
50	SONAWANE VISHAKHA ANAND	Software Modeling & Design	Sonadane
51	SONAWANE YOGITA NAMDEO	Software Modeling & Design	Pranav
52	THOMBARE SHUBHANGI RADHAKISAN	Software Modeling & Design	Shubhangi
53	TIRPDE ROHAN BUDHISHWAR	Software Modeling & Design	Pranav
54	WAGH HARSHAL PRASHANT	Software Modeling & Design	Pranav
55	WAKODE PRANT SANJAY	Software Modeling & Design	Pranav
56	WALVE VADAYA RAJARAM	Software Modeling & Design	Pranav
57	WAMANE DEVI NDRA SURYABHAN	Software Modeling & Design	Pranav
58	WARUNGASE VARSHA NANDU	Software Modeling & Design	Pranav
59	KASAR LAXMI PUNAMCHAND	Software Modeling & Design	Pranav
59	LALHANE NIRMALA PRAKASH	Software Modeling & Design	Pranav
60	CHINTA RAKTI MOHAN	Software Modeling & Design	Pranav
61	DHANRAJ AARTI SUNIL	Software Modeling & Design	Pranav
62	GHUMARE AMIT VILAS	Software Modeling & Design	Pranav
63	SHINDI DURGESH DEEPAK	Software Modeling & Design	Pranav

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TEIT Class Teacher

(Dr. Pralmbha V. Kashid)
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Ghatkopar, Mumbai - 400 075

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	
402054	Audit Course VII ³	-	-	-	-	-	-	-	-	-	-	-	-	NC	
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	
402055	Audit Course VIII ³	-	-	-	-	-	-	-	-	-	-	-	-	NC	
Total		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										
Audit Courses															
402054A	Yoga Practices	402054B			Stress Management										
402055A	Managing Innovation	402055B			Operations Management										

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.

H.C.
H.O.D
 DEPARTMENT OF MECHANICAL ENGG
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Sir Visvesvaraya Institute of Technology, Nashik
Department of Mechanical Engineering
Elective Choice from Students 2023-24 Sem. I

Class - BE Mechanical

All the students of BE Mechanical Engineering are hereby informed that kindly give Elective choice for Academic Year 2023-24 Sem. I by tick mark (✓) in respective box.

Elec: 402044A Automobile Design

402044D Industrial Engineering

402044B Design of Heat Transfer Equipments

402044E Internet of Things

402044C Modern Machining Processes

402044F Computational Fluid Dynamics

Roll No.	Name of the Student	Elective III						Sign.
		Automobile Design	Design of Heat Transfer Equipments	Modern Machining Processes	Industrial Engineering	Internet of Things	Computational Fluid Dynamics	
1	Datir Akshay Suresh			✓				<i>A.S. Datir</i>
2	Avhad Nikita Bhaskar			✓				<i>Avhad</i>
3	Sahane Vishal Bharat							Fail
4	Galkwad Aditya Ramesh			✓				<i>Aditya</i>
5	Ganore Prathamesh Manoj			✓				<i>Prathamesh</i>
6	Chavan Darshan Subhash			✓				<i>Darshan</i>
7	Takate Samadhan Eknath			✓				<i>Samadhan</i>
8	Binnar Nilesh Dinkar			✓				<i>Nilesh</i>
9	Avhad Pratik Ashok			✓				<i>Pratik</i>
10	Varma Pushpak Mahesh			✓				<i>Pushpak</i>
11	Soudankar Prathamesh N							Fail

		AD	DOHTE	MMP	IE	IOT	CPD	
12	Gawand Pratik Valmik			✓				<i>[Signature]</i>
13	Suryawanshi Kunal Rajesh							Fail
14	Surve Sudhir Vinod							Fail
15	Dahale Shubham Arun			✓				<i>[Signature]</i>
16	Kale Prajwal Dnyaneshwar			✓				<i>[Signature]</i>
17	Sadgir Kiran Baban			✓				<i>[Signature]</i>
18	Hagawane Saurabh Suresh			✓				<i>[Signature]</i>
19	Sadgir Prashant Pandit							Fail
20	Balak Siddharth Shivnath							Fail
21	Andhale Vishal Santosh							Fail

[Signature]
Elective Subject Teacher
(Ms. Kadlag V.L.)

[Signature]
H.O.D.
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 SIR VISVESVARAYA INSTITUTE OF
 TECHNOLOGY, CHINCHOLI,
 NASIK - 422101

Programme Code	Programme name	Year of Introduction	Status of Implementation of CBCS / elective course system (Yes/No)	Year of Implementation of CBCS / elective course system	Link to the relevant document
512550710	MBA	2019	YES	2019	

Academic Year	Semester	Name of Class with pattern	Name of elective choice available	Name of elective subject selected by students	No. of students
MBA					
2023-24	I	MBA-I (SEM-I) 2019 Pat	Elective-MBA-I (SEM-I) 1. Management Fundamental-107 2. Indian Economy-108 3. Entrepreneurship development-109 4. Essential of psychology for managers-110 5. Legal Aspects of business-111 6. Demand Analysis and forecasting-112	• Management Fundamental-107 • Entrepreneurship development-109 • Legal Aspects of business-111	60
2023-24	I	MBA-I (SEM-I) 2019 Pat	Elective-MBA-I (SEM-I)-INTERNAL 1. Verabl communication lab-113 2. Enterprise Analysis & desk Research-114 3. Selling & Negotiation skill lab-115 4. MS Excel-116 5. Business System & Procedures-117 6. Managing innovation-118 7. Foreign Language-I --119	• Verabl communication lab-113 • Enterprise Analysis & desk Research-114 • Selling & Negotiation skill lab-115	60
2023-24	II	MBA-I (SEM-II) 2019 Pat	1. Contemporary Frameworks in Management 2. Geopolitics & World Economic Systems		

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			<ol style="list-style-type: none"> Start Up and New Venture Management Qualitative Research Methods Business, Government & Society Business Process Re-engineering 		
	II	MBA-I (SEM-II) 2019 Pat	<ol style="list-style-type: none"> Written Analysis and Communication Lab Industry Analysis & Desk Research Entrepreneurship Lab SPSS Foreign Language – II 		
		MKT	<ol style="list-style-type: none"> Integrated Marketing Communications 217MKT Product & Brand Management 218MKT Personal Selling Lab 219MKT Digital Marketing – I 220MKT Marketing of Financial Services – I 221MKT Marketing of Luxury Products 222MKT 		
		FIN	<ol style="list-style-type: none"> Securities Analysis & Portfolio Management 217 FIN Futures and Options 218 FIN Direct Taxation 219 FIN Financial Reporting 220FIN Retail Credit Management- Lending & Recovery 221FIN Banking Laws & Regulations 222 FIN Fundamentals of Life Insurance – Products and Underwriting 223 FIN General Insurance - Health and Vehicle 224 FIN 		
		HRM	<ol style="list-style-type: none"> Labour Welfare 217 HRM Lab in Recruitment and Selection 218 HRM Learning and Development 219 HRM Public Relations & Corporate Communications 220HRM HR Analytics 221 HRM Conflict and Negotiation Management 222 HRM 		
		OSCM	<ol style="list-style-type: none"> Planning & Control of Operations 217 OSCM Productivity Management 218 		



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DR. BALASAHEB VISHNE PATIL
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PRAVARA RURAL EDUCATION SOCIETY'S
SIR VISVESVARAYA INSTITUTE OF TECHNOLOGY
PRAVARA TECHNICAL EDUCATION CAMPUS NASHIK
NASHIK

ROLL NO	NAME OF STUDENT	GENERIC ELECTIVES UNIVERSITY LEVEL (GE – UL) COURSES – 2 Credits Each							SIGN
		Management Fundamentals 107	Indian Economy 108	Entrepreneurship Development 109	Essentials of Psychology for Managers 110	Legal Aspects of Business 111	Demand Analysis & Forecasting 112	SEM MBA-I SEM-I	
1	ASWARE AKSHAY RAJENDRA	✓	—	✓	—	✓	—		Aswar
2	AVHAD AARTI SOMNATH	✓	—	✓		✓			Avhad AS
3	AVHAD BHAGWAN CHANDRABHAN	✓		✓		✓			Avhad Bze
4	AVHAD KIRAN DIPAK	✓		✓		✓			Avhad Ko
5	BHAGAT VAISHNAVI KIRAN	✓	✓	✓		✓			Bhagat Vka
6	BHALERAO SMITA BALASAHEB	✓		✓		✓			Bhalerao Smita
7	BODAKE SAKSHI SIDDHARTH	✓		✓		✓			Bodake Sakshi
8	BODAKE VIKAS GANPAT	✓		✓		✓			Bodake Vikas
9	BODKE KAVERI DNYANESHWAR	✓		✓		✓			Bodke Kaveri
10	DANGE AMOL NABAJI	✓		✓		✓			Dange Amol
11	DHONGADE ADITYA VINOD	✓		✓		✓			Dhonge Aditya
12	DIXIT ADITYA PURUSHOTTAM	✓		✓		✓			Dixit Aditya


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PRAVARA TECHNICAL EDUCATION CAMPUS NASHIK
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13	GAIDHANI OM DILIP	✓		✓		✓			Gaidhani
14	GAIKWAD ISHWARI NITIN	✓		✓		✓			Gaikwad
15	GAYAKWAD DNYANESHWAR DILIP	✓		✓		✓			Gaikwad
16	GHODERAU PRATIKSHA CHANDRAKANT	✓	✓	✓		✓	✓		Ghoderao
17	GITE SAMADHAN ARJUN	✓		✓		✓			Gite
18	HARDIK SHARAD ADHANGALE	✓		✓		✓			Adhyat.
19	JADHAV SANTOSH RAJESH	✓		✓		✓			Jadav
20	JOSHI KAUSTUBH KISHOR	✓		✓		✓			Joshi
21	KANDARE KHUSHAL RAVINDRA	✓		✓		✓			Kandare
22	KARPE KIRTI KAILAS	✓		✓	✓				Karpe Kir
23	KATKADE PRATIK UTTAM	✓		✓		✓			Katka
24	KEKAN TEJAL BALU	✓		✓					
25	KEKANE KRUSHNA ASHOK	✓		✓		✓			Kekane
26	MALI AMOL GANPAT	✓		✓		✓			Mali Amol
27	MANOJ ASHOK GHUMARE	✓		✓		✓			Manoj
28	MUTHAL KISHOR SOMNATH	✓		✓		✓			Muthal

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29	OMKAR NAMDEV ADHAV	✓	✓	✓					Adhav
30	PALVE PRAJAKTA DATTU	✓		✓		✓			Palve
31	PAWAR PRATHMESH AMBADAS	✓		✓		✓			Pawar PA
32	RAKH EKTA KAILAS	✓		✓		✓			Ram
33	SAHANE RUSHIKESH BHAUSAHEB	✓		✓		✓			Sahane
34	SAMRUT KRUSHNA SHIVAJI	✓		✓		✓			Samruti
35	SANAP DNYANESHWARI VISHNU	✓		✓		✓			Sanap
36	SANKET NILESH SALI	✓		✓		✓			Sanket
37	SATBHAI YASH ASHOK	✓		✓		✓			Satbhai
38	SHAIKH MADIHA YASIN	✓		✓		✓			Shaikh
39	SHALMAL SANDEEP LANDE	✓		✓		✓			Shalman
40	SHEJWAL SHUBHAM SHIVAJI	✓		✓		✓			Shejwal
41	SHINDE AKANKSHA SUNIL	✓		✓		✓			Shinde
42	SHINDE SHIVAM MADHUKAR	✓		✓		✓			Shinde

Head of Department
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ETI VETE DR. BALASAHEB VIKHE PATIL
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SIR VISVESVARAYA INSTITUTE OF TECHNOLOGY
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43	SHINDE ASHUTOSH RAMKRUSHNA	✓		✓		✓			Shinde
44	SHIRSATH KAVERI DEEPAK	✓		✓		✓			Shirsath
45	SONAWANE PRATHAMESH SUDHAKAR	✓		✓		✓			Sonawane
46	SONAWANE TUSHAR SHIVAJI	✓		✓	✓				Sonawane
47	TEJAS NAMDEV SANGALE	✓		✓		✓			Tejas Sangale
49	UGALE ABHISHEK SAMPAT	✓		✓		✓			Ugale Abhishek
50	UGALE ROHINI BHAUSAHEB	✓		✓	✓				Ugale Rohini
51	WAGH KRUSHNA BALU	✓		✓	✓				Wagh Krishna
52									
53									