

# **SAVITRIBAI PHULE PUNE UNIVERSITY**

**(Formerly University of Pune)**



**EXAMINATION CIRCULAR NO. 192 OF. 2023**

**THIRD YEAR ENGINEERING (2019 PATTERN)**

**End Sem Examination of April/May - 2023**

**(Under Faculty of SCIENCE AND TECHNOLOGY: B)ENGINEERING)**

## **INSTRUCTIONS FOR CANDIDATES**

- Candidates are required to be present at the examination centre, THIRTY MINUTES before the stipulated time.
- Candidates are forbidden from taking any material into the examination hall that can be treated as a malpractice.
- Candidates are requested to see the Notice Board at their center of examination regularly for changes if any that may be notified later in the program.
- No request shall be granted for change in time or date for the University Examination on any ground.
- Candidates are requested to note the Day, Date and Time of Paper.
- Candidates are permitted to use stencils at the time of examination.
- The exchanges of side-rules, drawing instruments of other materials used in the examination hall is not permitted at the time of examination. Candidates must bring their own instruments and will not be allowed to borrow from each other under any circumstances.
- Use of non-programmable battery operated electronic pocket size Calculator is allowed. The exchange of Calculators is not allowed. Electronics Devices including mobile are not allowed at the time of examination.
- The written examination will be conducted in the following order.

## AUTOMOBILE

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Automotive Refrigeration and Air Conditioning (316485)
Friday 23-06-2023	Automotive Chassis and Transmission (316486)
Monday 26-06-2023	Design of Engine Components (316487)
Friday 30/06/2023	<b>ELECTIVE-II</b> Automotive Aerodynamics and Body Engineering (316488-A)
	<b>ELECTIVE-II</b> Automotive Materials (316488-B)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Numerical & Optimization Methods (316481)
Thursday 08-06-2023	Heat Transfer (316482)
Saturday 10-06-2023	Design of Machine Components (316483)
Tuesday 13-06-2023	Automobile Electrical and Electronics (316484)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Advanced Forming & Joining Processes (302045-A)*
	<b>ELECTIVE-I</b> Machining Science and Technology (302045-B)*

Note :- \* Common with Mechanical

## CHEMICAL

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Chemical Reaction Engineering I (309348)
Friday 23-06-2023	Mass Transfer II (309349)
Monday 26-06-2023	Transport Phenomena (309350)
Friday 30/06/2023	<b>ELECTIVE-II</b> Energy Conservation in Chemical Process Industries (309351 A)
	<b>ELECTIVE-II</b> Process Instrumentation and Control (309351 B)
	<b>ELECTIVE-II</b> Corrosion Engineering (309351 C)
	<b>ELECTIVE-II</b> Artificial intelligence and Data Science (309351 D)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Mass Transfer-I (309341)
Thursday 08-06-2023	Chemical Technology -II (309342)
Saturday 10-06-2023	Chemical Engineering Mathematics (309343)
Tuesday 13-06-2023	Chemical Engineering Thermodynamics (309344)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Chemical Industry Management (409345A)
	<b>ELECTIVE-I</b> Food Technology (309345 B)
	<b>ELECTIVE-I</b> Polymer Engineering (309345 C)
	<b>ELECTIVE-I</b> Downstream Processing (309345 D)

**CIVIL****SEM-II**

<b>Day &amp; Date</b>	<b>2019 Course Time : 11:00 AM To 01:30 PM</b>
Wednesday 21-06-2023	Waste Water Engineering ( 301012)
Friday 23-06-2023	Design of RC Structures (301013)
Monday 26-06-2023	Remote Sensing and GIS (301014)
Friday 30/06/2023	<b>ELECTIVE-II</b> Advanced Engineering Geology with Rock Mechanics (301015 a)
	<b>ELECTIVE-II</b> Soft Computing Techniques (301015 b)
	<b>ELECTIVE-II</b> Advanced Surveying. (301015 c)
	<b>ELECTIVE-II</b> Advanced Geotechnical Engineering (301015 d)
	<b>ELECTIVE-II</b> Architecture and Town Planning (301015 e)
	<b>ELECTIVE-II</b> Solid Waste Management (301015 f)

**SEM-I**

<b>Day &amp; Date</b>	<b>2019 Course Time : 11:00 AM To 01:30 PM</b>
Tuesday 06-06-2023	Hydrology and Water Resources Engineering (301001)
Thursday 08-06-2023	Water Supply Engineering (301002)
Saturday 10-06-2023	Design of Steel Structures (301003)
Tuesday 13-06-2023	Engineering Economics and Financial Management (301004)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Advanced Fluid Mechanics and Hydraulic Machines (301005 a)
	<b>ELECTIVE-I</b> Research Methodology and IPR (301005 b)
	<b>ELECTIVE-I</b> Construction Management. (301005 c)
	<b>ELECTIVE-I</b> Advanced Concrete Technology (301005 d)
	<b>ELECTIVE-I</b> Matrix Methods of Structural Analysis (301005 e)
	<b>ELECTIVE-I</b> Advanced Mechanics of Structures (301005 f)

## COMPUTER

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Data Science and Big Data Analytics (310251)
Friday 23-06-2023	Web Technology (310252)
Monday 26-06-2023	Artificial Intelligence (310253)
Friday 30/06/2023	<b>ELECTIVE-II</b> Information Security (310254 A)
	<b>ELECTIVE-II</b> Augmented and Virtual Reality (310254 B)
	<b>ELECTIVE-II</b> Cloud Computing (310254 C) *
	<b>ELECTIVE-II</b> Software Modeling and Architectures (310254 D) *

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Database Management Systems (310241) *
Thursday 08-06-2023	Theory of Computation (310242)
Saturday 10-06-2023	Systems Programming and Operating System (310243)
Tuesday 13-06-2023	Computer Networks and Security (310244)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Internet of Things and Embedded Systems (310245 A)
	<b>ELECTIVE-I</b> Human Computer Interface (310245 B)
	<b>ELECTIVE-I</b> Distributed Systems (310245 C)
	<b>ELECTIVE-I</b> Software Project Management (310245 D)

**Note :-** \* Common with A.I.D.S.

## ELECTRICAL

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Power System-II (303148)
Friday 23-06-2023	Computer Aided Design of Electrical Machines (303149)
Monday 26-06-2023	Control System Engineering (303150)
Friday 30/06/2023	<b>ELECTIVE-II</b> IoT and its Applications in Electrical Engineering (303151 A)
	<b>ELECTIVE-II</b> Electrical Mobility (303151 B)
	<b>ELECTIVE-II</b> Cybernetic Engineering (303151 C)
	<b>ELECTIVE-II</b> Energy Management (303151 D)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Industrial and Technology Management (303141)
Thursday 08-06-2023	Power Electronics (303142)
Saturday 10-06-2023	Electrical Machines-II (303143)
Tuesday 13-06-2023	Electrical Installation Design and Condition Based Maintenance (303144)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Advanced Microcontroller and Embedded System (303145 A)
	<b>ELECTIVE-I</b> Digital Signal Processing (303145 B)
	<b>ELECTIVE-I</b> Open Elective (303145 C)

## ELECTRONICS

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Fundamentals of HDL (304212)
Friday 23-06-2023	Embedded Processors and Applications (304213)
Monday 26-06-2023	Industrial Management (304214)
Friday 30/06/2023	<b>ELECTIVE-II</b> PLC & Automation (304215 )
	<b>ELECTIVE-II</b> Advanced JAVA Programming (304195) *
	<b>ELECTIVE-II</b> Digital Signal Processing (304215 )
	<b>ELECTIVE-II</b> Fiber Optic Communication (304215 )
	<b>ELECTIVE-II</b> e Mobility (304215 E)

Note : \*Common with E&TC

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Power and Industrial Electronics (304201)
Thursday 08-06-2023	Electromagnetic Waves and Propagation Theory (404202)
Saturday 10-06-2023	Database Management (304183) *
Tuesday 13-06-2023	Microcontrollers and Applications (304204)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Instrumentation systems (304205 )
	<b>ELECTIVE-I</b> Machine Learning (304205 )
	<b>ELECTIVE-I</b> Fundamentals of JAVA Programming (304185) *
	<b>ELECTIVE-I</b> Data Communication (304205 )
	<b>ELECTIVE-I</b> Computer Networks (304205 )

**Note :-** \* Common with E&TC

## ELECTRONICS & TELECOMMUNICATION

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Cellular Networks (304192)
Friday 23-06-2023	Project Management (304193)
Monday 26-06-2023	Power Devices & Circuits (304194)
Friday 30/06/2023	<b>ELECTIVE-II</b> Digital Image Processing (304195)
	<b>ELECTIVE-II</b> Sensors in Automation (304195 )
	<b>ELECTIVE-II</b> Advanced JAVA Programming (304195) *
	<b>ELECTIVE-II</b> Embedded Processors (304195 )
	<b>ELECTIVE-II</b> Network Security (304195)
<b>Note :-</b> * Common with Electronics	

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Digital Communication (304181)
Thursday 08-06-2023	Electromagnetic Field Theory (304182)
Saturday 10-06-2023	Database Management (304183) *
Tuesday 13-06-2023	Microcontrollers (304184)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Digital Signal Processing (304185 )
	<b>ELECTIVE-I</b> Electronic Measurements (304185 )
	<b>ELECTIVE-I</b> Fundamentals of JAVA Programming (304185 ) *
	<b>ELECTIVE-I</b> Computer Networks (304185 )
<b>Note :-</b> * Common with Electronics	



## INFORMATION TECHNOLOGY

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Computer Networks & Security (314451)
Friday 23-06-2023	Data Science and Big Data Analytics (314452)
Monday 26-06-2023	Web Application Development (414464A)
Friday 30/06/2023	<b>ELECTIVE-II</b> Artificial Intelligence (314454 A)
	<b>ELECTIVE-II</b> Cyber Security (314454 B)
	<b>ELECTIVE-II</b> Cloud Computing (314454 C)
	<b>ELECTIVE-II</b> Software Modeling and Design (314454 D)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Theory of Computation (314441)
Thursday 08-06-2023	Operating Systems (314442)
Saturday 10-06-2023	Machine Learning (314443)
Tuesday 13-06-2023	Human Computer Interaction (314444)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Design and Analysis of Algorithm (314445 A)
	<b>ELECTIVE-I</b> Advanced Database and Management System (314445 B)
	<b>ELECTIVE-I</b> Design Thinking (314445 C)
	<b>ELECTIVE-I</b> Internet of Things (314445 D)

## **INSTRUMENTATION & CONTROL**

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Internet of Things (306268)
Friday 23-06-2023	Industrial Automation-II (306269)
Monday 26-06-2023	Digital Signal Processing (306270)
Friday 30/06/2023	<b>ELECTIVE-II</b> Building Automation (306271 A)
	<b>ELECTIVE-II</b> Machine Learning (306271 B)
	<b>ELECTIVE-II</b> Electrical Drives (306271 C)
	<b>ELECTIVE-II</b> Analytical Instrumentation (306271 D)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Embedded Systems (306261)
Thursday 08-06-2023	Industrial Automation-I (306262)
Saturday 10-06-2023	Modern Control Theory (306263)
Tuesday 13-06-2023	Operating System (306264)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Mechatronics & Robotics (306265 A)
	<b>ELECTIVE-I</b> Data Science (306265 B)
	<b>ELECTIVE-I</b> Power Electronics (306265 C)
	<b>ELECTIVE-I</b> Bio-Medical Instrumentation (306265 D)

## MECHANICAL

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Artificial Intelligence & Machine Learning (302049)
Friday 23-06-2023	Computer Aided Engineering (302050)
Monday 26-06-2023	Design of Transmission Systems (302051)
Friday 30/06/2023	<b>ELECTIVE-II</b> Composite Materials (302052-A)
	<b>ELECTIVE-II</b> Surface Engineering (302052-B)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Numerical & Statistical Methods (302041) *
Thursday 08-06-2023	Heat & Mass Transfer (302042) *
Saturday 10-06-2023	Design of Machine Elements (302043) *
Tuesday 13-06-2023	Mechatronics (302044) *
Thursday 15-06-2023	<b>ELECTIVE-I</b> Advanced Forming & Joining Processes (302045-A)
	<b>ELECTIVE-I</b> Machining Science & Technology (302045-B)

NOTE:- \* **Common to Mechanical Sandwich Engineering**

## MECHANICAL-SANDWICH

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Process Planning & Tool Selection (Self-Study-I) (302066)
Friday 23-06-2023	Advanced Materials & Manufacturing (Self-Study-II) (302067)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Numerical & Statistical Methods (302041) *
Thursday 08-06-2023	Heat & Mass Transfer (302042) *
Saturday 10-06-2023	Design of Machine Elements (302043) *
Tuesday 13-06-2023	Mechatronics (302044) *
Thursday 15-06-2023	Fundamentals of Computer Aided Engineering (302061)

NOTE:- \* **Common to Mechanical Engineering**

## B. Tech. Biotechnology

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Fermentation Technology (315471)
Friday 23-06-2023	Mass Transfer (315472)
Monday 26-06-2023	Bioseparation Engineering (315473)
Friday 30/06/2023	<b>ELECTIVE-II</b> Instrumentation and Process Control (315474 A)
	<b>ELECTIVE-II</b> Food Biotechnology (315474 B)
	<b>ELECTIVE-II</b> Data base management systems (315474 C)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Analytical Techniques (315461)
Thursday 08-06-2023	Material Balances and Stoichiometry (315462)
Saturday 10-06-2023	Genetic Engineering (315463)
Tuesday 13-06-2023	Introduction to Immunology (315464)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Enzyme Technology (315465 A)
	<b>ELECTIVE-I</b> Good Laboratory Practices and Good Manufacturing Practices (315465 B)
	<b>ELECTIVE-I</b> Agricultural Biotechnology (315465 C )

## Printing

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Flexo Printing Techniques (308289)
Friday 23-06-2023	Color Management (308290)
Monday 26-06-2023	Design of Experiments (308291)
Friday 30/06/2023	<b>ELECTIVE-II</b> Maintenance Management of Printing Machines (308293 A)
	<b>ELECTIVE-II</b> Basic Communication Systems and Electronic Instrumentation (308293 B)
	<b>ELECTIVE-II</b> E-Publishing (308293 C)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Print Statistics (308281)
Thursday 08-06-2023	Offset Printing Techniques (308282)
Saturday 10-06-2023	Color Science and Measurement (308283)
Tuesday 13-06-2023	Ink Technology (308284)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Cyber Security (308286 A)
	<b>ELECTIVE-I</b> Wood, Glass and Metal Based Packaging (308286 B)
	<b>ELECTIVE-I</b> Engineering Ethics (308286 C)

## Production

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Production Tooling (311088 (A))
Friday 23-06-2023	Production and Operations Management (311089) (A)
Monday 26-06-2023	Process Engineering and Resource Planning (311090 (A))
Friday 30/06/2023	<b>ELECTIVE-II</b> Product Design and Development (311091 (A)-I)
	<b>ELECTIVE-II</b> Nano Manufacturing (311091 (A)-II)
	<b>ELECTIVE-II</b> Statistics and Numerical Methods (311091 (A)-III)
	<b>ELECTIVE-II</b> Financial Management and Costing (311091 (A)-IV)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Engineering Metrology and Instrumentation (311081 (A))
Thursday 08-06-2023	Material Forming Technology (311082 (A))
Saturday 10-06-2023	Machining Science and Technology (311083 (A))
Tuesday 13-06-2023	Kinematics and Design of Machines (311084 (A))
Thursday 15-06-2023	<b>ELECTIVE-I</b> Finite Element Analysis (311085 (A)-I)
	<b>ELECTIVE-I</b> Advances in Manufacturing Processes (311085 (A)-II)
	<b>ELECTIVE-I</b> Mechatronics (311085 (A)-III )
	<b>ELECTIVE-I</b> Supply Chain Management (311085 (A)-IV )

## Production Sandwich

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Kinematics and Design of Machines (311084 (A))
Friday 23-06-2023	Material forming and Mould Design (311124 (A))
Monday 26-06-2023	Metrology & Quality Control (311125 (A))
Friday 30/06/2023	Statistics and Numerical Optimization methods (311088 (A))
Monday 03/07/2023	<b>ELECTIVE-II</b> Advanced Materials (311126 (A)-I)
	<b>ELECTIVE-II</b> Costing and Cost Control (311126 (A)-II)
	<b>ELECTIVE-II</b> Advanced Joining Technology (311126 (A)-III)
	<b>ELECTIVE-II</b> World Class Manufacturing (311126 (A)-IV)

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Manufacturing Technology (Self Study) (311122 (A))



# Automation and Robotics

## SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Sensors and Vision Systems in Robots (302527 )
Friday 23-06-2023	Artificial Intelligence in Robots (302528 )
Monday 26-06-2023	Modelling and Simulation (302529 )
Friday 30/06/2023	<b>ELECTIVE-II</b> Machining Science and Technology ( 302530-A )
	<b>ELECTIVE-II</b> Maintenance and Safety Engineering ( 302530-B)

## SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Design of Robot Elements (302521 )
Thursday 08-06-2023	Robot Kinematics and Dynamics (302522 )
Saturday 10-06-2023	Computer Aided Engineering and Manufacturing (302523 )
Tuesday 13-06-2023	Signal Processing and Conditioning (302524 )
Thursday 15-06-2023	<b>ELECTIVE-I</b> Advanced Forming & Joining Processes (302525-A )
	<b>ELECTIVE-I</b> Optimization Techniques (302525-B)

# Electronics and Computer Engineering

## SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Software Engineering and Project Management (310352)
Friday 23-06-2023	Computer Networks and Security (310353)
Monday 26-06-2023	Embedded Processors & Applications (310354)
Friday 30/06/2023	Software Modeling and Design (Elective - II) (310355 A)
	Advanced Database Management Systems (Elective -II) (310355 B)
	Power Electronics (Elective - II) (310355 C)
	PLC and Automation (Elective - II) (310355 D)

## SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Database Management Systems [310341]
Thursday 08-06-2023	Advanced Java Programming [310342]
Saturday 10-06-2023	Data Communication [310343]
Tuesday 13-06-2023	Microcontroller and Applications [310344]
Thursday 15-06-2023	<b>ELECTIVE-I</b> Distributed Systems [310345 A]
	<b>ELECTIVE-I</b> Block Chain Technology [310345 B]
	<b>ELECTIVE-I</b> Digital Signal Processing [310345 C]
	<b>ELECTIVE-I</b> Sensors and Applications [310345 D]

# Mechatronics Engineering

## SEM-II

<b>Day &amp; Date</b>	<b>2019 Course Time : 11:00 AM To 01:30 PM</b>
Wednesday 21-06-2023	Industrial Automation (317547)
Friday 23-06-2023	Electro-Mechanical System (317548)
Monday 26-06-2023	Finite Element Analysis (317549)
Friday 30/06/2023	Embedded System Design (317550)
Monday 03/07/2023	Artificial Intelligence & Machine Learning (317551 )

## SEM-I

<b>Day &amp; Date</b>	<b>2019 Course Time : 11:00 AM To 01:30 PM</b>
Tuesday 06-06-2023	Machine Design [317541]
Thursday 08-06-2023	Manufacturing Processes [317542]
Saturday 10-06-2023	Control System [317543]
Tuesday 13-06-2023	Digital Signal Processing [317544]
Thursday 15-06-2023	Microcontrollers [317545]

# Robotics and Automation Engineering

## SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Robot Programming (311508(A))
Friday 23-06-2023	Artificial Intelligence for Robotics (311509(A))
Monday 26-06-2023	Flexible Manufacturing Systems (311510(A))
Friday 30/06/2023	Micro-electro-mechanical Systems (Elective - II) (311511(A)-I)
	Humanoid Robots (Elective -II) (311511(A)-II)
	Modeling and Simulation (Elective - II) (311511(A)-III)
	Swarm Intelligence in Robotics (Elective - II) (311511(A)-IV)

## SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Embedded systems in Robotics [311501] (A)
Thursday 08-06-2023	Hydraulics and Pneumatics [311502] (A)
Saturday 10-06-2023	Robot Kinematics and Dynamics [311503] (A)
Tuesday 13-06-2023	Sensors Technology [311504] (A)
Thursday 15-06-2023	<b>ELECTIVE-I</b> Statistics and Numerical Methods [311505] (A)-I
	<b>ELECTIVE-I</b> Finite Element Analysis [311505] (A)-II
	<b>ELECTIVE-I</b> Industrial Robotics and Material handling Systems [311505] (A)-III
	<b>ELECTIVE-I</b> Intelligent Manufacturing System [311505] (A)-IV

## Artificial Intelligence and Data Science

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Data Science (317529)
Friday 23-06-2023	Cyber security (317530)
Monday 26-06-2023	Artificial Neural Network (317531)
Friday 30/06/2023	Robotics and Automation (Elective - II) (317532 (A))
	Natural Language Processing (Elective -II) (317532(B))
	Cloud Computing (Elective - II) (310254 (C)) *
	Software Modeling and Architecture (Elective - II) (310254 (D)) *

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Data Base Management System [310241] *
Thursday 08-06-2023	Computer Networks [317521]
Saturday 10-06-2023	Web Technology [310252]
Tuesday 13-06-2023	Artificial Intelligence [310253]
Thursday 15-06-2023	<b>ELECTIVE-I</b> Embedded Systems & Security [317522] (A)
	<b>ELECTIVE-I</b> Design Thinking [314445] (C)
	<b>ELECTIVE-I</b> Pattern Recognition [317522] (B)
	<b>ELECTIVE-I</b> Human Computer Interface [310245] (B)

**Note :- \* Common with Computer Engineering**

## Artificial Intelligence and Machine Learning

### SEM-II

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Wednesday 21-06-2023	Machine intelligence for Data Science (318552)
Friday 23-06-2023	Data Mining & Warehousing (318553)
Monday 26-06-2023	Artificial Neural Network (318554)
Friday 30/06/2023	Industrial Internet of Things (Elective - II) (318555 (A))
	Brain computer interface (Elective -II) (318555 (B))
	AI for cyber security (Elective - II) (318555 (C))
	Video Analytics (Elective - II) (318555 (D))

### SEM-I

Day & Date	2019 Course Time : 11:00 AM To 01:30 PM
Tuesday 06-06-2023	Design and analysis of Algorithm [318541]
Thursday 08-06-2023	IoT with Artificial Intelligence [318542]
Saturday 10-06-2023	Web Technology [318543]
Tuesday 13-06-2023	Management & Entrepreneurship for IT Industry [318544]
Thursday 15-06-2023	<b>ELECTIVE-I</b> Robotics [318545] (A)
	<b>ELECTIVE-I</b> Pattern Recognition [318545] (B)
	<b>ELECTIVE-I</b> Information Security [318545] (C)
	<b>ELECTIVE-I</b> Business Intelligence [318545] (D)

## **HONORS / MINORS**

### **SEM-I**

<b>Day &amp; Date</b>	<b>Honors / Minors</b>	<b>2019 Course Time : 11:00 AM To 01:30 PM</b>
<b>Saturday 17-06-2023</b>	Artificial Intelligence And Machine	Computational Statistics (310301)
	Cyber Security	Information and Cyber Security (310401)
	Data Science	Data Science and Visualization (310501)
	Internet of Things	Embedded Systems and Internet of Things (310601)
	Virtual Reality And Augmented Reality	Virtual Reality (310701)
	Systems Engineering	Foundations of systems & systems engineering (302041MJ)
	Energy Management in Utility Systems	Energy Management (302021MJ)
	Electric Vehicles	e-Vehicle Technology (302031MJ)
	3D Printing	Additive Manufacturing Technology (302011MJ)
	Robotics	Principles of Robotics (304181 HR)
	Block Chain Technology	Introduction to Block chain (304181 HBCT)
	Metro Construction	Surveying in Metro construction (301301)
	Architecture and Town Planning	Urban Housing and Infrastructure Planning (301401)
	Advanced Packaging Technology	Internet of Things (308211)

## **HONORS / MINORS**

SEM-II

<b>Day &amp; Date</b>	<b>Honors / Minors</b>	<b>2019 Course Time : 11:00 AM To 01:30 PM</b>
Tuesday 04/07/2023	Artificial Intelligence And Machine	Artificial Intelligence (310303)
	Cyber Security	Enterprise Architecture and Components (310403)
	Data Science	Statistics and Machine Learning (310503)
	Internet of Things	Internet of Things Architectures, Protocols and Systems Programming (310603)
	Virtual Reality And Augmented Reality	Augmented Reality (310703)
	Systems Engineering	Model Based Systems Engineering (302043MJ)
	Energy Management in Utility Systems	Energy Efficiency of Thermal Utilities (302023MJ)
	Electric Vehicles	e-Vehicle System Design (302033MJ)
	3D Printing	Design for Additive Manufacturing (302013MJ)
	Robotics	Robot Programming & Simulation (304183 HR)
	Block Chain Technology	Decentralize & Blockchain Technologies (304183 HBCT)
	Metro Construction	Planning and Quantity estimation for metro construction (301303)
	Architecture and Town Planning	Sustainable Architecture and Landscape Design (301403)
	Advanced Packaging Technology	Smart Packaging (308213)

Ganeshkhind, Pune - 411 007

Ref.No/ XCT/399

Date: 10 / 05 / 2023

Director

Board of Examinations and Evaluation