# SAVITRIBAI PHULE PUNE UNIVERSITY

## (Formerly University of Pune)

### EXAMINATION CIRCULAR NO. 211 OF. 2022
### THIRD YEAR ENGINEERING (2019 PATTERN)
### Examination of INSEM SEPT./OCT-2022
### (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-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Numerical & Optimization Methods (316481) |
| Tuesday,<br>04/10/2022 | Heat Transfer (316482) |
| Thursday,<br>06/10/2022 | Design of Machine Components (316483) |
| Friday,<br>07/10/2022 | Automobile Electrical and Electronics (316484) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Advanced Forming & Joining Processes (302045-A)** |
| | **ELECTIVE-I** Machining Science and Technology (302045-B) ** |

**Note** :- ** *Common with Mechanical Engineering*

# CHEMICAL

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Mass Transfer-I (309341) |
| Tuesday,<br>04/10/2022 | Chemical Technology -II (309342) |
| Thursday,<br>06/10/2022 | Chemical Engineering Mathematics (309343) |
| Friday,<br>07/10/2022 | Chemical Engineering Thermodynamics (309344) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Chemical Industry Management (409345A) |
| | **ELECTIVE-I** Food Technology (309345 B) |
| | **ELECTIVE-I** Polymer Engineering (309345 C) |
| | **ELECTIVE-I** Downstream Processing (309345 D) |

# CIVIL

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Hydrology and Water Resources Engineering (301001) |
| Tuesday,<br>04/10/2022 | Water Supply Engineering (301002) |
| Thursday,<br>06/10/2022 | Design of Steel Structures (301003) |
| Friday,<br>07/10/2022 | Engineering Economics and Financial Management (301004) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Advanced Fluid Mechanics and Hydraulic Machines (301005 a) |
| | **ELECTIVE-I** Research Methodology and IPR (301005 b) |
| | **ELECTIVE-I** Construction Management. (301005 c) |
| | **ELECTIVE-I** Advanced Concrete Technology (301005 d) |
| | **ELECTIVE-I** Matrix Methods of Structural Analysis (301005 e) |
| | **ELECTIVE-I** Advanced Mechanics of Structures (301005 f) |

# COMPUTER

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Database Management Systems (310241) **\*** |
| Tuesday,<br>04/10/2022 | Theory of Computation (310242) |
| Thursday,<br>06/10/2022 | Systems Programming and Operating System (310243) |
| Friday,<br>07/10/2022 | Computer Networks and Security (310244) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Internet of Things and Embedded Systems (310245 A) |
| | **ELECTIVE-I** Human Computer Interface (310245 B) |
| | **ELECTIVE-I** Distributed Systems (310245 C) |
| | **ELECTIVE-I** Software Project Management (310245 D) |

**Note** :- *\* Common with Artificial Intelligence and Data Science Engineering*

# ELECTRICAL

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Industrial and Technology Management (303141) |
| Tuesday,<br>04/10/2022 | Power Electronics (303142) |
| Thursday,<br>06/10/2022 | Electrical Machines-II (303143) |
| Friday,<br>07/10/2022 | Electrical Installation Design and Condition Based Maintenance (303144) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Advanced Microcontroller and Embedded System (303145 A) |
| | **ELECTIVE-I** Digital Signal Processing (303145 B) |
| | **ELECTIVE-I** Open Elective (303145 C) |

# ELECTRONICS

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Power and Industrial Electronics (304201) |
| Tuesday,<br>04/10/2022 | Electromagnetic Waves and Propagation Theory (404202) |
| Thursday,<br>06/10/2022 | Database Management (304183)  * |
| Friday,<br>07/10/2022 | Microcontrollers and Applications (304204) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Instrumentation systems (304205 ) |
| | **ELECTIVE-I** Machine Learning (304205 ) |
| | **ELECTIVE-I** Fundamentals of JAVA Programming (304185)  * |
| | **ELECTIVE-I** Data Communication (304205 ) |
| | **ELECTIVE-I** Computer Networks (304205 ) |

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

# ELECTRONICS & TELECOMMUNICATION

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Digital Communication (304181) |
| Tuesday,<br>04/10/2022 | Electromagnetic Field Theory (304182) |
| Thursday,<br>06/10/2022 | Database Management (304183) **\*** |
| Friday,<br>07/10/2022 | Microcontrollers (304184) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Digital Signal Processing (304185 ) |
| | **ELECTIVE-I** Electronic Measurements (304185 ) |
| | **ELECTIVE-I** Fundamentals of JAVA Programming (304185 )  **\*** |
| | **ELECTIVE-I** Computer Networks (304185 ) |

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

# INFORMATION TECHNOLOGY

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Theory of Computation (314441) |
| Tuesday,<br>04/10/2022 | Operating Systems (314442) |
| Thursday,<br>06/10/2022 | Machine Learning (314443) |
| Friday,<br>07/10/2022 | Human Computer Interaction (314444) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Design and Analysis of Algorithm (314445 A) |
| | **ELECTIVE-I** Advanced Database and Management System (314445 B) |
| | **ELECTIVE-I** Design Thinking (314445 C) |
| | **ELECTIVE-I** Internet of Things (314445 D) |

# INSTRUMENTATION & CONTROL

<span style="color:magenta">SEM-I</span>

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Embedded Systems (306261) |
| Tuesday,<br>04/10/2022 | Industrial Automation-I (306262) |
| Thursday,<br>06/10/2022 | Modern Control Theory (306263) |
| Friday,<br>07/10/2022 | Operating System (306264) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Mechatronics & Robotics (306265 A) |
| | **ELECTIVE-I** Data Science (306265 B) |
| | **ELECTIVE-I** Power Electronics (306265 C) |
| | **ELECTIVE-I** Bio-Medical Instrumentation (306265 D) |

# MECHANICAL

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Numerical & Statistical Methods (302041) * |
| Tuesday,<br>04/10/2022 | Heat & Mass Transfer (302042) * |
| Thursday,<br>06/10/2022 | Design of Machine Elements (302043) * |
| Friday,<br>07/10/2022 | Mechatronics (302044) * |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Advanced Forming & Joining Processes (302045-A) ** |
| | **ELECTIVE-I** Machining Science & Technology (302045-B) ** |

NOTE:- *** Common With Mechanical Sandwich Engineering***
        **** Common with Automobile Engineering***

# MECHANICAL-SANDWICH

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Numerical & Statistical Methods  (302041 ) * |
| Tuesday,<br>04/10/2022 | Heat & Mass Transfer  (302042) * |
| Thursday,<br>06/10/2022 | Design of Machine Elements (302043) * |
| Friday,<br>07/10/2022 | Mechatronics (302044) * |
| Monday,<br>10/10/2022 | Fundamentals of Computer Aided Engineering (302061) |

NOTE:- *Common With Mechanical Engineering*

# B. Tech. Biotechnology

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Analytical Techniques (315461) |
| Tuesday,<br>04/10/2022 | Material Balances and Stoichiometry (315462) |
| Thursday,<br>06/10/2022 | Genetic Engineering (315463) |
| Friday,<br>07/10/2022 | Introduction to Immunology (315464) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Enzyme Technology (315465 A) |
| | **ELECTIVE-I** Good Laboratory Practices and Good Manufacturing Practices (315465 B) |
| | **ELECTIVE-I** Agricultural Biotechnology (315465 C ) |

# **Printing**

<span style="color:magenta">SEM-I</span>

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Print Statistics (308281) |
| Tuesday,<br>04/10/2022 | Offset Printing Techniques (308282) |
| Thursday,<br>06/10/2022 | Color Science and Measurement (308283) |
| Friday,<br>07/10/2022 | Ink Technology (308284) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Cyber Security (308286 A) |
| | **ELECTIVE-I** Wood, Glass and Metal Based Packaging (308286 B) |
| | **ELECTIVE-I** Engineering Ethics (308286 C ) |

# Production

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Engineering Metrology and Instrumentation (311081 (A) |
| Tuesday,<br>04/10/2022 | Material Forming Technology (311082 (A) |
| Thursday,<br>06/10/2022 | Machining Science and Technology (311083 (A) |
| Friday,<br>07/10/2022 | Kinematics and Design of Machines (311084 (A) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Finite Element Analysis (311085 (A)-I) |
|  | **ELECTIVE-I** Advances in Manufacturing Processes (311085 (A)-II) |
|  | **ELECTIVE-I** Mechatronics (311085 (A)-III ) |
|  | **ELECTIVE-I** Supply Chain Management (311085 (A)-IV ) |

# **Production Sandwich**

SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Manufacturing Technology (Self Study) [311122] (A) |

# Electronics and Computer Engineering

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Database Management Systems  [310341] |
| Tuesday,<br>04/10/2022 | Advanced Java Programming [310342] |
| Thursday,<br>06/10/2022 | Data Communication [310343] |
| Friday,<br>07/10/2022 | Microcontroller and Applications [310344] |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Distributed Systems [310345 A] |
|  | **ELECTIVE-I** Block Chain Technology [310345 B] |
|  | **ELECTIVE-I** Digital Signal Processing [310345 C] |
|  | **ELECTIVE-I** Sensors and Applications [310345 D] |

# Mechatronics Engineering

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Machine Design [317541] |
| Tuesday,<br>04/10/2022 | Manufacturing Processes [317542] |
| Thursday,<br>06/10/2022 | Control System [317543] |
| Friday,<br>07/10/2022 | Digital Signal Processing [317544] |
| Monday,<br>10/10/2022 | Microcontrollers [317545] |

# Robotics and Automation Engineering

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Embedded systems in Robotics [311501] (A) |
| Tuesday,<br>04/10/2022 | Hydraulics and Pneumatics [311502] (A) |
| Thursday,<br>06/10/2022 | Robot Kinematics and Dynamics [311503] (A) |
| Friday,<br>07/10/2022 | Sensors Technology [311504] (A) |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Statistics and Numerical Methods [311505] (A)-I |
| | **ELECTIVE-I** Finite Element Analysis [311505] (A)-II |
| | **ELECTIVE-I** Industrial Robotics and Material handling Systems [311505] (A)-III |
| | **ELECTIVE-I** Intelligent Manufacturing System [311505] (A)-IV |

# Artificial Intelligence and Data Science

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Data Base Management System [310241] * |
| Tuesday,<br>04/10/2022 | Computer Networks [317521] |
| Thursday,<br>06/10/2022 | Web Technology [310252] |
| Friday,<br>07/10/2022 | Artificial Intelligence [310253] |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Embedded Systems & Security [317522] (A) |
| | **ELECTIVE-I** Design Thinking [314445] (C) |
| | **ELECTIVE-I** Pattern Recognition [317522] (B) |
| | **ELECTIVE-I** Human Computer Interface [310245] (B) |

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

# Artificial Intelligence and Machine Learning

## SEM-I

| Day & Date | 2019 Course<br>TIME 11.00 a.m. To 12.00 noon |
|---|---|
| Monday,<br>03/10/2022 | Design and analysis of Algorithm [318541] |
| Tuesday,<br>04/10/2022 | IoT with Artificial Intelligence [318542] |
| Thursday,<br>06/10/2022 | Web Technology [318543] |
| Friday,<br>07/10/2022 | Management & Entrepreneurship for IT Industry [318544] |
| Monday,<br>10/10/2022 | **ELECTIVE-I** Robotics [318545] (A) |
| | **ELECTIVE-I** Pattern Recognition [318545] (B) |
| | **ELECTIVE-I** Information Security [318545] (C) |
| | **ELECTIVE-I** Business Intelligence [318545] (D) |

# HONORS / MINORS

## SEM-I

| Day & Date | Honors / Minors | TIME 11.00 a.m. To 12.00 noon |
|---|---|---|
| Tuesday, 11/10/2022 | 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) |

Ganeshkhind, Pune - 411 007

**Ref.No/ XCT / 609**

**Date: 17 / 09 / 2022**                                    **Director**

**Board of Examinations and Evaluation**