

SAVITRIBAI PHULE PUNE UNIVERSITY

(Formerly University of Pune)



EXAMINATION CIRCULAR NO. 278 OF. 2022

THIRD YEAR ENGINEERING (2019 PATTERN)

Examination of NOV/DEC-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-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Automotive Refrigeration and Air Conditioning (316485)
Monday 16/01/2023	Automotive Chassis and Transmission (316486)
Tuesday 17/01/2023	Design of Engine Components (316487)
Wednesday 18/01/2023	ELECTIVE-II Automotive Aerodynamics and Body Engineering (316488-A)
	ELECTIVE-II Automotive Materials (316488-B)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Numerical & Optimization Methods (316481)
Saturday 14/01/2023	Heat Transfer (316482)
Monday 16/01/2023	Design of Machine Components (316483)
Wednesday 18/01/2023	Automobile Electrical and Electronics (316484)
Friday 20/01/2023	ELECTIVE-I Advanced Forming & Joining Processes (302045-A)*
	ELECTIVE-I Machining Science and Technology (302045-B)*

Note :- * Common with Mechanical

CHEMICAL

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Chemical Reaction Engineering I (309348)
Monday 16/01/2023	Mass Transfer II (309349)
Tuesday 17/01/2023	Transport Phenomena (309350)
Wednesday 18/01/2023	ELECTIVE-II Energy Conservation in Chemical Process Industries (309351 A)
	ELECTIVE-II Process Instrumentation and Control (309351 B)
	ELECTIVE-II Corrosion Engineering (309351 C)
	ELECTIVE-II Artificial intelligence and Data Science (309351 D)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Mass Transfer-I (309341)
Saturday 14/01/2023	Chemical Technology -II (309342)
Monday 16/01/2023	Chemical Engineering Mathematics (309343)
Wednesday 18/01/2023	Chemical Engineering Thermodynamics (309344)
Friday 20/01/2023	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-II**

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Waste Water Engineering (301012)
Monday 16/01/2023	Design of RC Structures (301013)
Tuesday 17/01/2023	Remote Sensing and GIS (301014)
Wednesday 18/01/2023	ELECTIVE-II Advanced Engineering Geology with Rock Mechanics (301015 a)
	ELECTIVE-II Soft Computing Techniques (301015 b)
	ELECTIVE-II Advanced Surveying. (301015 c)
	ELECTIVE-II Advanced Geotechnical Engineering (301015 d)
	ELECTIVE-II Architecture and Town Planning (301015 e)
	ELECTIVE-II Solid Waste Management (301015 f)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Hydrology and Water Resources Engineering (301001)
Saturday 14/01/2023	Water Supply Engineering (301002)
Monday 16/01/2023	Design of Steel Structures (301003)
Wednesday 18/01/2023	Engineering Economics and Financial Management (301004)
Friday 20/01/2023	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-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Data Science and Big Data Analytics (310251)
Monday 16/01/2023	Web Technology (310252)
Tuesday 17/01/2023	Artificial Intelligence (310253)
Wednesday 18/01/2023	ELECTIVE-II Information Security (310254 A)
	ELECTIVE-II Augmented and Virtual Reality (310254 B)
	ELECTIVE-II Cloud Computing (310254 C)
	ELECTIVE-II Software Modeling and Architectures (310254 D)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Database Management Systems (310241) *
Saturday 14/01/2023	Theory of Computation (310242)
Monday 16/01/2023	Systems Programming and Operating System (310243)
Wednesday 18/01/2023	Computer Networks and Security (310244)
Friday 20/01/2023	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 A.I.D.S.

ELECTRICAL

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Power System-II (303148)
Monday 16/01/2023	Computer Aided Design of Electrical Machines (303149)
Tuesday 17/01/2023	Control System Engineering (303150)
Wednesday 18/01/2023	ELECTIVE-II IoT and its Applications in Electrical Engineering (303151 A)
	ELECTIVE-II Electrical Mobility (303151 B)
	ELECTIVE-II Cybernetic Engineering (303151 C)
	ELECTIVE-II Energy Management (303151 D)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Industrial and Technology Management (303141)
Saturday 14/01/2023	Power Electronics (303142)
Monday 16/01/2023	Electrical Machines-II (303143)
Wednesday 18/01/2023	Electrical Installation Design and Condition Based Maintenance (303144)
Friday 20/01/2023	ELECTIVE-I Advanced Microcontroller and Embedded System (303145 A)
	ELECTIVE-I Digital Signal Processing (303145 B)
	ELECTIVE-I Open Elective (303145 C)

ELECTRONICS

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Fundamentals of HDL (304212)
Monday 16/01/2023	Embedded Processors and Applications (304213)
Tuesday 17/01/2023	Industrial Management (304214)
Wednesday 18/01/2023	ELECTIVE-II PLC & Automation (304215)
	ELECTIVE-II Advanced JAVA Programming (304195) *
	ELECTIVE-II Digital Signal Processing (304215)
	ELECTIVE-II Fiber Optic Communication (304215)
	ELECTIVE-II e Mobility (304215 E)

Note : *Common with E&TC

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Power and Industrial Electronics (304201)
Saturday 14/01/2023	Electromagnetic Waves and Propagation Theory (404202)
Monday 16/01/2023	Database Management (304183) *
Wednesday 18/01/2023	Microcontrollers and Applications (304204)
Friday 20/01/2023	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

ELECTRONICS & TELECOMMUNICATION

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Cellular Networks (304192)
Monday 16/01/2023	Project Management (304193)
Tuesday 17/01/2023	Power Devices & Circuits (304194)
Wednesday 18/01/2023	ELECTIVE-II Digital Image Processing (304195)
	ELECTIVE-II Sensors in Automation (304195)
	ELECTIVE-II Advanced JAVA Programming (304195) *
	ELECTIVE-II Embedded Processors (304195)
	ELECTIVE-II Network Security (304195)
Note :- * Common with Electronics	

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Digital Communication (304181)
Saturday 14/01/2023	Electromagnetic Field Theory (304182)
Monday 16/01/2023	Database Management (304183) *
Wednesday 18/01/2023	Microcontrollers (304184)
Friday 20/01/2023	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	

INFORMATION TECHNOLOGY

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Computer Networks & Security (314451)
Monday 16/01/2023	Data Science and Big Data Analytics (314452)
Tuesday 17/01/2023	Web Application Development (414464A)
Wednesday 18/01/2023	ELECTIVE-II Artificial Intelligence (314454 A)
	ELECTIVE-II Cyber Security (314454 B)
	ELECTIVE-II Cloud Computing (314454 C)
	ELECTIVE-II Software Modeling and Design (314454 D)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Theory of Computation (314441)
Saturday 14/01/2023	Operating Systems (314442)
Monday 16/01/2023	Machine Learning (314443)
Wednesday 18/01/2023	Human Computer Interaction (314444)
Friday 20/01/2023	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

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Internet of Things (306268)
Monday 16/01/2023	Industrial Automation-II (306269)
Tuesday 17/01/2023	Digital Signal Processing (306270)
Wednesday 18/01/2023	ELECTIVE-II Building Automation (306271 A)
	ELECTIVE-II Machine Learning (306271 B)
	ELECTIVE-II Electrical Drives (306271 C)
	ELECTIVE-II Analytical Instrumentation (306271 D)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Embedded Systems (306261)
Saturday 14/01/2023	Industrial Automation-I (306262)
Monday 16/01/2023	Modern Control Theory (306263)
Wednesday 18/01/2023	Operating System (306264)
Friday 20/01/2023	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-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Artificial Intelligence & Machine Learning (302049)
Monday 16/01/2023	Computer Aided Engineering (302050)
Tuesday 17/01/2023	Design of Transmission Systems (302051)
Wednesday 18/01/2023	ELECTIVE-II Composite Materials (302052-A)
	ELECTIVE-II Surface Engineering (302052-B)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Numerical & Statistical Methods (302041) *
Saturday 14/01/2023	Heat & Mass Transfer (302042) *
Monday 16/01/2023	Design of Machine Elements (302043) *
Wednesday 18/01/2023	Mechatronics (302044) *
Friday 20/01/2023	ELECTIVE-I Advanced Forming & Joining Processes (302045-A)
	ELECTIVE-I Machining Science & Technology (302045-B)

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

MECHANICAL-SANDWICH

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Process Planning & Tool Selection (Self-Study-I) (302066)
Monday 16/01/2023	Advanced Materials & Manufacturing (Self-Study-II) (302067)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Numerical & Statistical Methods (302041) *
Saturday 14/01/2023	Heat & Mass Transfer (302042) *
Monday 16/01/2023	Design of Machine Elements (302043) *
Wednesday 18/01/2023	Mechatronics (302044) *
Friday 20/01/2023	Fundamentals of Computer Aided Engineering (302061)

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

B. Tech. Biotechnology

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Fermentation Technology (315471)
Monday 16/01/2023	Mass Transfer (315472)
Tuesday 17/01/2023	Bioseparation Engineering (315473)
Wednesday 18/01/2023	ELECTIVE-II Instrumentation and Process Control (315474 A)
	ELECTIVE-II Food Biotechnology (315474 B)
	ELECTIVE-II Data base management systems (315474 C)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Analytical Techniques (315461)
Saturday 14/01/2023	Material Balances and Stoichiometry (315462)
Monday 16/01/2023	Genetic Engineering (315463)
Wednesday 18/01/2023	Introduction to Immunology (315464)
Friday 20/01/2023	ELECTIVE-I Enzyme Technology (315465 A)
	ELECTIVE-I Good Laboratory Practices and Good Manufacturing Practices (315465 B)
	ELECTIVE-I Agricultural Biotechnology (315465 C)

Printing

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Flexo Printing Techniques (308289)
Monday 16/01/2023	Color Management (308290)
Tuesday 17/01/2023	Design of Experiments (308291)
Wednesday 18/01/2023	ELECTIVE-II Maintenance Management of Printing Machines (308293 A)
	ELECTIVE-II Basic Communication Systems and Electronic Instrumentation (308293 B)
	ELECTIVE-II E-Publishing (308293 C)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Print Statistics (308281)
Saturday 14/01/2023	Offset Printing Techniques (308282)
Monday 16/01/2023	Color Science and Measurement (308283)
Wednesday 18/01/2023	Ink Technology (308284)
Friday 20/01/2023	ELECTIVE-I Cyber Security (308286 A)
	ELECTIVE-I Wood, Glass and Metal Based Packaging (308286 B)
	ELECTIVE-I Engineering Ethics (308286 C)

Production

SEM-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Production Tooling (311088 (A))
Monday 16/01/2023	Production and Operations Management (311089) (A)
Tuesday 17/01/2023	Process Engineering and Resource Planning (311090 (A))
Wednesday 18/01/2023	ELECTIVE-II Product Design and Development (311091 (A)-I)
	ELECTIVE-II Nano Manufacturing (311091 (A)-II)
	ELECTIVE-II Statistics and Numerical Methods (311091 (A)-III)
	ELECTIVE-II Financial Management and Costing (311091 (A)-IV)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Engineering Metrology and Instrumentation (311081 (A))
Saturday 14/01/2023	Material Forming Technology (311082 (A))
Monday 16/01/2023	Machining Science and Technology (311083 (A))
Wednesday 18/01/2023	Kinematics and Design of Machines (311084 (A))
Friday 20/01/2023	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-II

Day & Date	2019 Course Time : 10:00 AM To 12:30 PM
Saturday 14/01/2023	Kinematics and Design of Machines (311084 (A))
Monday 16/01/2023	Material forming and Mould Design (311124 (A))
Tuesday 17/01/2023	Metrology & Quality Control (311125 (A))
Wednesday 18/01/2023	Statistics and Numerical Optimization methods (311088 (A))
Thursday 19/01/2023	ELECTIVE-II Advanced Materials (311126 (A)-I)
	ELECTIVE-II Costing and Cost Control (311126 (A)-II)
	ELECTIVE-II Advanced Joining Technology (311126 (A)-III)
	ELECTIVE-II World Class Manufacturing (311126 (A)-IV)

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Manufacturing Technology (Self Study) (311122 (A))

Automation and Robotics

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Design of Robot Elements (302521)
Saturday 14/01/2023	Robot Kinematics and Dynamics (302522)
Monday 16/01/2023	Computer Aided Engineering and Manufacturing (302523)
Wednesday 18/01/2023	Signal Processing and Conditioning (302524)
Friday 20/01/2023	ELECTIVE-I Advanced Forming & Joining Processes (302525-A)
	ELECTIVE-I Optimization Techniques (302525-B)

Electronics and Computer Engineering

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Database Management Systems [310341]
Saturday 14/01/2023	Advanced Java Programming [310342]
Monday 16/01/2023	Data Communication [310343]
Wednesday 18/01/2023	Microcontroller and Applications [310344]
Friday 20/01/2023	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 Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Machine Design [317541]
Saturday 14/01/2023	Manufacturing Processes [317542]
Monday 16/01/2023	Control System [317543]
Wednesday 18/01/2023	Digital Signal Processing [317544]
Friday 20/01/2023	Microcontrollers [317545]

Robotics and Automation Engineering

SEM-I

Day & Date	2019 Course Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Embedded systems in Robotics [311501] (A)
Saturday 14/01/2023	Hydraulics and Pneumatics [311502] (A)
Monday 16/01/2023	Robot Kinematics and Dynamics [311503] (A)
Wednesday 18/01/2023	Sensors Technology [311504] (A)
Friday 20/01/2023	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 Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Data Base Management System [310241] *
Saturday 14/01/2023	Computer Networks [317521]
Monday 16/01/2023	Web Technology [310252]
Wednesday 18/01/2023	Artificial Intelligence [310253]
Friday 20/01/2023	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 Time : 02:00 PM To 04:30 PM
Friday 13/01/2023	Design and analysis of Algorithm [318541]
Saturday 14/01/2023	IoT with Artificial Intelligence [318542]
Monday 16/01/2023	Web Technology [318543]
Wednesday 18/01/2023	Management & Entrepreneurship for IT Industry [318544]
Friday 20/01/2023	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-II

Day & Date	Honors / Minors	Time : 10:00 AM To 12:30 PM
Tuesday 24/01/2023	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)

HONORS / MINORS

SEM-I

Day & Date	Honors / Minors	Time : 02:00 PM To 04:30 PM
Tuesday 24/01/2023	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/ 905

Date: 22 / 12 / 2022

Director

Board of Examinations and Evaluation