**SHIVAJI UNIVERSITY,KOLHAPUR**

**Final Programme** of **M. E. I & II Semester,**

Examination to be held in **May, 2019**

CIRCULER NO - **182** Exam Of May-2019

**1**. The candidates are requested to be present at their respective places of Examination FIFTEEN MINUTES before the time appointed for setting of the First Paper and TEN MINUTES before the time appointed for setting of each subsequent Paper. Candidates are forbidden to take any book or paper into the Examination Hall.

**2**. The M.E. Examination will be held at:

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Centre** | **College Name** |
| **1** | **Karad** | **Government College of Engineering, Karad** |
| **2** | **Satara** | **K.B.P, College of Engineering, Satara** |
| **3** | **Warananagar.** | **Tatyasaheb Kore Institute of Technology, Warananagar.** |
| **4** | **Sakharale** | **Rajarambapu Institute of Technology, Sakharale** |
| **5** | **Budhagaon.** | **P.V.P. Institute of Technology, Budhagaon.** |
| **6** | **Ichalkaranji** | **DKTEs Textile & Engineering Institute, Ichalkaranji.** |
| **7** | **Jaysingpur.** | **Dr. J. J. Magadum College Of Engineering, Jaysingpur.** |
| **8** | **Ambabai Talim Sanshta’s**  **Sanjay Bhokare Group Institutes, Miraj** | **Walchand College Of Engineering, Sangli.** |
| **9** | **Ashta** | **Annasaheb Dange College Of Enggi. & Tech. Ashta** |
| **10** | **Atigre** | **Sou. Sushila Danchand Ghodawat, Charitable Trusts Group of Institutions, Atigre** |
| **11** | **Wathar** | **Ashokrao Mane Group of Institutions Faculty of Engineering & Management Studies , Wathar** |
| **12** | **DOT** | **Department of Technology, New Building, Shivaji University, Kolhapur** |
| **13** | **Panhala** | **Sanjeevan Engineering and Technology Institute, Panhala** |
| **14** | **LIMB** | **Gourishankar College of Engineering, Limb** |
| **15** | **DYP Kasaba Bawada** | 1. **D.Y. Patil College of Engineering, Kasaba Bawada, Kolhapur** 2. **KIT COLLEGE OF ENGINEERING, GOKUL SHIRGAON, KOLHAPUR** 3. **BHARTI VIDYAPEETH’S COLLEGE OF ENGINEERING, MOREWADI, KOLHAPUR** |

1. The written Examination will be conducted in the following order:-

**SEMESTER** – **I**

**Day &Date : - Wednesday, 22-5-2019 Time: 10.00 a.m. to 1.00 p.m.**

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| --- | --- | --- | --- |
| **BRANCH** | **Sub-Branch** | **Papers** | |
| **CIVIL** | **Structure** | Theory of Elasticity & Plasticity  **Time10.00 a.m. to 2.00 p.m.** | **34341** |
| **Construction & Management** | Project Evaluation and Financing | **34319** |
| **ELECTRICAL** | **Power System** | Power System Modeling and Stability | **34336** |
| **Control System** | Linear System Theory | **34331** |
| **BIOCHEMICAL ENGINEERING & BIO-TECHNOLOGY** | - | Advanced Bio reaction Engineering | **42982** |
| **COMPUTER SCIENCE** | - | Mathematical Foundations of Computer Science | **48760** |
| **CAD/CAM/CAE** | - | Advanced Machine Design | **48729** |
| **AUTOMOBILE** | - | Design of Experiments & Research Methodology | **38712** |

**SEMESTER – I**

**Day &Date : -Thursday, 23-5-2019 Time: 10.00 a.m. to 1.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** | |
| **CIVIL** | **Structure** | Mechanics of Structures  **Time: 10.00 am to 2.00 p.m.** | **34342** |
|  |  |  |
| **Construction & Management** | Planning & Management of Projects | **34320** |
| **ELECTRICAL** | **Power System** | Modern Power System Protection & Related Instrumentation | **34337** |
| **Control System** | Applied Linear Algebra for Control System | **34332** |
| **BIOCHEMICAL ENGINEERING & BIO-TECHNOLOGY** | - | Advanced Biological Thermodynamics | **42983** |
| **COMPUTER SCIENCE** | - | Advanced Distributed System | **48761** |
| **CAD/CAM/CAE** | - | Computer Aided Manufacturing | **48730** |
| **AUTO MOBILE** | - | Automotive Engines & Emission | **38713** |

**SEMESTER – I**

**Day & Date : -Friday, 24-5-2019 Time: 10.00 a.m. to 1.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** | |
| **CIVIL** | **Structure** | Adv. Design of Concrete Structure  **Time:10.00 am to 2.00 p.m.** | **34343** |
| **Construction & Management** | Construction Methods | **34321** |
| **ELECTRICAL** | **Power System** | Modern Power System Analysis & Computer Methods | **34338** |
| **Control System** | Process Control | **34333** |
| **BIOCHEMICAL ENGINEERING & BIO - TECHNOLOGY** | - | Advanced Microbiology & Biochemistry | **42984** |
| **COMPUTER SCIENCE** | - | Design & Analysis of Algorithm | **48762** |
| **CAD/CAM/CAE** | - | Finite Element Analysis | **48731** |
| **AUTO MOBILE** | - | Theory of Elasticity &Reliability | **38714** |

**SEMESTER - I**

**Day &Date : - Saturday, 25-5-2019 Time: 10.00 a.m. to 1.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** | |
| **CIVIL** | **Structure** | Dynamics of Structure  **Time:10.00 a.m. to 2.00 p.m.** | **34344** |
| **Construction & Management** | Construction Equipment | **34322** |
| **ELECTRICAL** | **Power System** | E.H.V.A.C. Transmission | **34339** |
| **Control System** | Digital Signal Processing | **34334** |
| **BIOCHEMICAL ENGINEERING & BIO - TECHNOLOGY** |  | Advanced Bioseperation Processes | **42985** |
| **COMPUTER SCIENCE** | - | **Elective – I** |  |
| Unix Network Programming | **48763** |
| Real Time System | **48764** |
| Data Mining & Warehousing | **48765** |
| **CAD/CAM/CAE** | - | Design of Experiments and Research Methodology | **48732** |
| **AUTOMOBILE** | - | Transmission System Theory & Design | **38715** |

**SEMESTER-I**

**Day &Date : - Monday, 27-5-2019 Time: 10.00 a.m. to 1.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** |  |
| **CIVIL** | **Structure**  **Elective-I** | Design of Foundations  **Time:10.00 a.m. to 2.00 p.m.** | **35983** |
| Advances in Concrete Composites | **35984** |
| Structural Optimization | **35985** |
| **Construction & Management**  **Elective-I** | Entrepreneurship in Construction | **34440** |
| Human Resources Development in Construction | **34323** |
| Work Study & Incentive Management | **35993** |
| **BIOCHEMICAL ENGINEERING**  **BIO-TECHNOLOGY** | **Elective-I** |  | |
| Immunotechnology | **42986** |
| Biosensor Technology | **42987** |
| Environmental Biotechnology | **42988** |
| Animal Biotechnology | **42989** |
| **CAD/CAM/CAE** | **Elective –I** |  | |
| Mechatronic Systems Design | **48733** |
| Technology Management Engineering | **48734** |
| Tribology & Surface Engineering | **48735** |
| MEMS & Nanotechnology | **48736** |
| Design & Development of CAD/CAM/CAE Software | **48737** |
| Advanced Materials & processing Forming | **48738** |
| **AUTOMOBILE** | **Elective –I** |  | |
| Finite Element Analysis | **38716** |
| Hydraulic & Pneumatic System | **38717** |
| Combustion Engineering | **38718** |
| Vehicle Instrumentation & testing | **38719** |
| Automobile Air Conditioning | **38720** |

**Sem. I Time: 10.00 a.m. to 1.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **Mechanical-Production Engineering** | Advanced Materials and Manufacturing Processes | **56210** |
| **Thursday, 23-5-2019** | Design Of Experiments and Research Methodology | **56211** |
| **Friday, 24-5-2019** | Metal Forming Technology | **56212** |
| **Saturday, 25-5-2019** | **Elective-I** | Facility Planning & Plant Layout | **56216** |
| Advanced Machine Tool Design | **56217** |
| Mechatronic System Design | **56218** |
| Advanced Tooling & Die Design | **56219** |
| Human Resource Management | **56220** |
| Costing & Cost Control | **56221** |
| **Monday, 27-5-2019** | **Elective-II** | Advanced Fluid Power Engineering | **56222** |
| Manufacturing System Design | **56223** |
| MEMS & Nanotechnology | **56224** |
| Supply Chain Management & Logistics | **56225** |
| Engineering Economics | **56226** |
|  | **56227** |
| **Only For Student & College Information – Measurements & Instrumentation Lab Subject Code – 56213, Advanced CNC Technology Lab Subject Code – 56214, Seminar-I Subject Code – 56215** | | | |

**SEMESTER – I BRANCH – MECHANICAL**

**Time: 10.00 a.m. to 1.00 p.m.**

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| --- | --- | --- | --- |
| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **Mechanical-Product Design & Development** | Applied Machine Design | **56250** |
| **Thursday, 23-5-2019** | Computer Aided Design and Simulation | **56251** |
| **Friday, 24-5-2019** | Design Of Experiments and Research Methodology | **56252** |
| **Saturday, 25-5-2019** | **Elective-I** | Advanced Material and Processing | **56254** |
| Industrial Automation | **56255** |
| System Design | **56256** |
| Material Handling Equipment Design | **56257** |
| **Monday, 27-5-2019** | **Elective-II** | Dynamic Analysis & Testing Methodology | **56258** |
| Reverse Engineering | **56259** |
| Computational Fluid Dynamics | **56260** |
| Design Optimization | **56261** |
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**SEMESTER – I BRANCH - MECHANICAL**

**New Course- from-December -2012**

**Time: 10.00 a.m. to 1.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **Mechanical-Machine Design** | Mathematical Modeling And Design Optimization | **55589** |
| **Thursday, 23-5-2019** | Advanced Mechanics Of Solids | **55590** |
| **Friday, 24-5-2019** | Advanced Theory Of Vibrations | **55591** |
| **Saturday, 25-5-2019** | **Elective-I** | Tribology | **55592** |
| Process Equipment Design | **55593** |
| Advanced Finite Element Analysis | **55594** |
| Mechatronics | **55595** |
| **Monday, 27-5-2019** | **Elective-II** | Vibration Control and Condition Monitoring | **55596** |
| Product Design and Development | **55597** |
| Material Handling Equipment Design | **55598** |
| Robotics | **55599** |
| **Only For Student & College Information**  **Instrumentation Lab Subject Code - 55600, Seminar – I Subject Code - 55601** | | | |

**SEMESTER – I BRANCH - MECHANICAL**

**New Course- from-December-2012**

**Time: 10.00 a. m. to 1.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **Mechanical-Heat Power & Engineering** | Advanced Fluid Mechanics | **56033** |
| **Thursday, 23-5-2019** | Advanced Heat Transfer | **56036** |
| **Friday, 24-5-2019** | Advanced Thermodynamics and Combustion | **56034** |
| **Saturday, 25-5-2019** | **Elective-I** | Advanced I.C. engine | **56042** |
| Advanced Refrigeration | **56132** |
| Advanced Power Plant Engineering | **56133** |
| **Monday, 27-5-2019** | **Elective-II** | Advanced Automobile Engineering | **56134** |
| Design Of Air Conditioning Systems | **56135** |
| Energy Analysis and Management | **56136** |
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**SEMESTER – I BRANCH – MECHANICAL**

**New-Course- From – DEC – 2012 Time: 10.00 a.m. to 1.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **Mechanical-Design Engineering** | Mathematical Modeling And Design Optimization | **56137** |
| **Thursday, 23-5-2019** | Solid Mechanics | **56138** |
| **Friday, 24-5-2019** | Advanced Engineering Materials | **56139** |
| **Saturday, 25-5-2019** | **Elective-I** | Reliability Engineering | **56142** |
| Process Equipment Design | **56143** |
| Material Handling Equipment Design | **56144** |
| Product Design & Development | **56145** |
| **Monday, 27-5-2019** | **Elective-II** | Robotics | **56146** |
| Machine Tool Design | **56147** |
| Advanced Finite Element Analysis | **56148** |
| Reverse Engineering | **56149** |
| **Only For Student & College Information**  **Instrumentation Lab Subject Code – 56140, Seminar-I Subject Code – 56141** | | | |

**SEMESTER – I BRANCH – ELECTRONICS**

**New Course- from – December – 2012 Time: 10.00 a.m. to 1.00 p.m.**

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| **DAY & DATE** | **Sub – Branch** | **Paper** | |
| **Wednesday, 22-5-2019** | **VLSI and Embedded System** | CMOS VLSI Design – I | 60742 |
| **Thursday, 23-5-2019** | Advanced Digital Signal Processing | 60743 |
| **Friday, 24-5-2019** | Advanced Embedded System | 60744 |
| **Saturday, 25-5-2019** | Digital Systems Engineering | 60745 |
| **Monday, 27-5-2019** |  | **Elective – I** | |
| DSP VLSI – I | 60747 |
| System on Chip Architecture – I | 60748 |
| Communication System Design | 60749 |
| Algorithm for VLSI Design Automation | 60750 |
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|  |  | Seminar – I | 60746 TW |

**SEMESTER-I New course**

**Branch- Environmental Time : 10.00 a.m. to 1.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **Environmental** | Air and Noise Pollution | **66362** |
| **Thursday, 23-5-2019** | Solid and Hazardous Waste Management | **66363** |
| **Friday, 24-5-2019** | Physics Chemical Processe for Water and Wastewater | **66364** |
| **Saturday, 25-5-2019** | **Elective-I** |  |
| Industrial Health and Safety Auditing | **66366** |
| Optimization Techniques | **66367** |
| Project Management | **66368** |
| **Monday, 27-5-2019** | **Elective-II** |  |
| Energy Management | **66369** |
| Operation and Maintenance of treatment Plants | **66370** |
| Green Building | **66371** |
| **Only For Student & College Information** | | | |

**SEMESTER – I**

**BRANCH – ELECTRONICS& TELECOMMUNICATION(New Course)**

**Time: 10.00 a.m. to 01.00 p.m.**

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| **DAY & DATE** | **Branch** | **Paper** | |
| **Wednesday, 22-5-2019** | **Electronics & Telecommunication** | Advanced Embedded System | **66385** |
| **Thursday, 23-5-2019** | Error Control Coding Techniques | **66386** |
| **Friday, 24-5-2019** | Advance Wireless Communication | **66387** |
| **Saturday, 25-5-2019** | Random Process | **66388** |
| **Monday, 27-5-2019** | **Elective – I** | Mobile Computing | **66391** |
| Digital Data Compression | **66392** |
| Internet Traffic Engineering | **66393** |
| Advanced Antenna Theory | **66394** |

**SEMESTER – I**

**Branch - Industrial Engineering (New Course from December,2016)**

**Time: 10.00 a.m. to 01.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **Industrial Engineering** | Design of Experiments and Research Methodology | **68670** |
| **Thursday, 23-5-2019** | Work Study | **68671** |
| **Friday, 24-5-2019** | Ergonomics | **68672** |
| **Saturday, 25-5-2019** | **Elective-I** | Srochstic Process and Markar Chains | **68673** |
| Manufacturing System Design | **68674** |
| Probabilistic Rist Assessment | **68675** |
| Project Engineering and Network Analysis | **68679** |
| Technology Management | **68677** |
| **Monday, 27-5-2019** | **Elective-II** | Multivariate Statistical Modeling | **68678** |
| Supply Chain Management | **68679** |
| Reliability Analysis and Prediction | **68680** |
| Queuing Theory and Models | **68681** |
| Total Quality Management | **56226 /68682** |
| **Only For Student & College Information**  **Measurements & Instrumentation Lab Subject Code – 56213,**  **Advanced CNC Technology Lab Subject Code –56214, Seminar-I Subject Code – 56215** | | | |

**SEMESTER - I**

**New Course from – December 2014 Time: 10.00 a.m. to 01.00 p. m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **CHEMICAL** | Advanced Momentum and Heat Transfer | **64209** |
| **Thursday, 23-5-2019** | Advanced Chemical Engineering Thermodynamics | **64210** |
| **Friday, 24-5-2019** | Process Modeling in Chemical Engineering | **64211** |
| **Saturday, 25-5-2019** | **Elective-I**  Nanotechnology | **64212** |
| Green Technology | **64213** |
| Pharmaceutical Biotechnology | **64214** |
| **Monday, 27-5-2019** | **Elective-II**  Catalysis and Surface Phenomena | **64215** |
| Bioprocess Engineering | **64216** |
| Material Engineering | **64217** |
| Process and Equipment Design | **64218** |

**SEMESTER I**

**New Course from – DEC 2014 Time: 10.00 a.m. to 1.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **ELECTRONIC** | Advanced Digital Signal processing | **63931** |
| **Thursday, 23-5-2019** | CMOS VLSI Design | **63932** |
| **Friday, 24-5-2019** | Random Signal Processing | **63933** |
| **Saturday, 25-5-2019** | **Elective-I**  High Performance Communication Network | **63934** |
| Design of Digital Circuit and Logic Design | **63935** |
| Optimization Techniques | **63936** |
| Advance Communication System | **63937** |
| **Monday, 27-5-2019** | **Elective II**  Software Defined Radios | **63938** |
| Image Processing And Application | **63939** |
| Design of VLSI System | **63940** |
| Robotic and Application | **63941** |
| Wireless Sensor network | **63942** |
| Industrial DC Drives | **63943** |

**SEMESTER I**

**New Course from – December 2014 Time: 10.00 a.m. to 1.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Wednesday, 22-5-2019** | **CAD-CAM** | Design of Experiments and Research Methodology | **63965** |
| **Thursday, 23-5-2019** | Finite Elements Analysis | **63966** |
| **Friday, 24-5-2019** | Micro Electro-Mechanical System | **63967** |
| **Saturday, 25-5-2019** | Computer Aided Manufacturing | **63968** |
| **Monday, 27-5-2019** | **Elective-I**  Advanced Design Engineering | **63969** |
| Advanced Tool Design | **63970** |
| Design of Hydraulic and Phenaulic System | **63971** |
| Mechatronic System Design | **63972** |

**SEMESTER – II**

**Day &Date : - Thursday, 23-5-2019 Time: 3.00 p.m. to 6.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** | |
| **CIVIL** | **Structure** | Theory of Plates and Shell  **Time 10-00 a.m. to 2.00 p. m.** | **34346** |
| **Environment** | Air Pollution & Control | **34448** |
| **Construction & Management** | Const. Techniques | **34324** |
| **ELECTRICAL** | **Power System** | Power System Planning & Eco. | **34515** |
| **Control System** | Non-Linear Control System | **34526** |
| **ELECTRONICS & TELECOMM.** | - | RF & Microwave Circuit Design | **43027** |
| **BIOCHEMICAL ENGINEERING & BIO- TECHNOLOGY** | - | Bioreactor Design | **43448** |
| **COMPUTER SCIENCE** | - | Design of Database Systems | **48768** |
| **CAD/CAM/CAE** | - | Manufacturing Systems Design | **48742** |
| **AUTOMOBILE** | - | Engine Design | **38722** |

**SEMESTER – II**

**Day & Date : - Friday. 24-5-2019 Time: 3.00 p.m. to 6.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** |  |
| **CIVIL** | **Structure** | Finite Element Method  **Time 10-00 a.m. to 2.00 p. m.** | **34347** |
| **Environment** | Environmental Pollution & Impact Assessment | **36022** |
| **Construction & Management** | Legal Aspects in Construction Engg. | **34325** |
| **ELECTRICAL** | **Power System** | Real Time Control of Power System | **34516** |
| **Control System** | Optimal Control System | **34527** |
| **ELECTRONICS & TELECOMM.** | - | Wireless Communication | **43028** |
| **BIOCHEMICAL ENGINEERING &**  **BIO- TECHNOLOGY** | - | Advanced Enzyme Technology | **43449** |
| **COMPUTER SCIENCE** | - | Network Core Protocols & Management | **48769** |
| **CAD/CAM/CAE** | - | Product Life Cycle Management | **48743** |
| **AUTOMOBILE** | - | Classic & Body Engg. | **38723** |

**SEMESTER - II**

**Day & Date : - Saturday, 25-5-2019 Time: 3.00 p.m. to 6.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** |  |
| **CIVIL** | **Structure** | Earthquake Engineering  **Time 10.000 a.m. to 2.00 p. m.** | **34348** |
| **Environment** | Waste Management Techniques | **34451** |
| **Construction & Management** | Management Information System for Construction Management | **34326** |
| **ELECTRICAL** | **Power System** | H.V.D.C. Transmission | **34517** |
| **Control System** | Digital Control System | **34528** |
| **ELECTRONICS & TELECOMM.** | **-** | Adaptive Signal Processing | **43029** |
| **BIOCHEMICAL ENGINEERING &**  **BIO - TECHNOLOGY** | **-** | Advanced Food Technology | **43450** |
| **COMPUTER SCIENCE** | **-** | Parallel Algorithms & Design | **48770** |
| **CAD/CAM/CAE** | **-** | Ind. Automation & Robotics | **48744** |
| **AUTOMOBILE** | **-** | Vehicle Dynamics | **38724** |

**SEMESTER – II**

**Day & Date :- Monday, 27-5-2019 Time: 3.00 p.m. to 6.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** | |
| **CIVIL** | **Structure** | Advanced Design of Steel Structure  **Time: 10.00 a.m. to 2.00 p.m.** | **34349** |
| **Environment** | Environmental Policy Laws & Economic | **36023** |
| **Construction & Management** | Computational Methods & Optimization Techniques | **34327** |
| **ELECTRICAL** | **Power System** | **Elective-I**  H.V. Engg. | **34518** |
| Power Controllers. | **34519** |
| Power System Instrumentation | **36015** |
| Fuzzy Logic & Artificial Neural Network | **34520** |
| **Control System** | **Elective-I**  Micro-Controllers & Applications | **34529** |
| Optimization Techniques | **34530** |
| Identification & Estimation | **34531** |
| Adaptive Control Systems | **34532** |
| Multivariable Control System | **36051** |
| Robust Control | **36052** |

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| **ELECTRONICS & TELECOMM.** | **Elective-II** |  | |
| Multi Rate Systems & Filter | **43030** |
| Cryptography & Network Security | **43031** |
| Speech & Audio Processing | **43032** |
| **BIOCHEMICAL ENGINEERING &**  **BIO-TECHNOLOGY** | **-** | Advanced Genetic Engineering | **43451** |
| **COMPUTER SCIENCE** | **Elective – II** | [ | |
| Artificial Neural Network & Genetic algorithms | **48771** |
| Operating System Design & Evaluation | **48772** |
| Multicore Architecture & Programming | **48773** |
| **CAD/CAM/CAE** | **-** | Optimization Techniques | **48745** |
| **AUTOMOBILE** | **-** | Noise & Vibration | **38725** |

**SEMESTER-II**

**Day & Date : - Tuesday, 28-5-2019 Time: 3.00 p.m. to 6.00 p.m.**

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| **BRANCH** | **Sub- Branch** | **Papers** | |
| **CIVIL** | **Structure** | **Elective-II**  Stability of Structure  **Time: 10.00 a.m. to 2.00 p.m.** | **35986** |
| Design of R. C. C.Bridge | **35987** |
| Structural Reliability | **34457** |
| Design of Folded Plates and Shells | **35988** |
| **Environment** | **Elective-II**  Environmental Quality Management | **36024** |
| Remote Sensing & GIS Applications in Environmental Engineering | **36025** |
| **Construction & Management** | **Elective-II**  Advanced Construction | **35995** |
| Appropriate Technology | **35996** |
| Environmental Impact Assessment | **35997** |
| **ELECTRICAL** | **Power System** | **Elective-II**  Adv. Microprocessor of Techniques for  Power System | **34521** |
| Electric Power Quality & Harmonics | **34522** |
| Artificial Intelligence & Expert Systems | **36016** |
| **Control System** | **Elective-II**  Fuzzy & Neural Control | **34533** |
| Applied Optimal Control | **36053** |
| Stochastic Control | **36054** |
| Real Time Computer Control | **36055** |
| Software Applications to Control System | **36056** |
| Robotics | **36057** |
| **ELECTRONICS & TELECOMM.** | | **Elective-III**  Mobile Computing | **43033** |
| Stochastic Models & Queuing Theory | **43034** |
| Communication System Design | **43035** |
| Optical Networks | **43036** |
| **BIOCHEMICAL ENGINEERING &**  **BIO-TECHNOLOGY** | | **Elective-II**  Planet Biotechnology | **43452** |
| Pharmaceutical Biotechnology | **43453** |
| Advanced protein Engineering | **43454** |
| Advanced Bioinformatics | **43455** |

**SEMESTER – II**

**Day &Date :-**  **Tuesday, 28-5-2019 Time:3.00 p.m. to 6.00 p.m.**

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| **CAD/CAM/CAE** | **Elective- II**  Computational Fluid Dynamics | **48746** |
| Quality & Reliability Engineering | **48747** |
| System Dynamics & Simulation | **48748** |
| Artificial Intelligence | **48749** |
| Automatic Control Engineering | **48750** |
| CAD/CAM/CAE Practices in Metal Forming | **48751** |
| Rapid Prototyping | **48752** |
| **AUTOMOBILE** | **Elective - II** |  |
| Computational Fluid Dynamics | **38726** |
| Human Resource Development | **38727** |
| Advanced Automotive Electronics | **38728** |
| Automotive Maintenance & Management | **38729** |
| Tribology | **38730** |
| **COMPUTER SCIENCE** | **-** | - |

**SEMESTER – II BRANCH – MECHANICAL**

**New Course – From – May, 2013 Time: 3.00 p.m. to 6.00 p.m.**

|  |  |  |  |
| --- | --- | --- | --- |
| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Mechanical-Machine Design** | Advanced Material Science | **55602** |
| **Friday, 24-5-2019** | Advanced Machine Design | **55603** |
| **Saturday, 25-5-2019** | Mechanics Of Machinery | **55604** |
| **Monday, 27-5-2019** | **Elective-III** | Experimental Stress Analysis | **55605** |
| Composite Materials | **55606** |
| Advanced Machine Tool Design | **55607** |
| Open Elective | **55608** |
| **Tuesday, 28-5-2019** | **Elective-IV** | Noise & Vibration Harshness (NVH) | **55609** |
| Vehicle Dynamics | **55610** |
| Engineering Fracture Mechanics | **55611** |
| Reliability Engineering | **55612** |
| **Only For Student & College Information**  **Computer Aided Analysis Lab – 55613 T/W Ext. , Seminar – II 55614 Ext. ,**  **Comprehensive Viva 55618 Ext.** | | | |

**SEMESTER – II BRANCH - MECHANICAL**

**New-Course- from – May,2013 Time : 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Mechanical-Heat Power & Engineering** | Numerical Computation of Fluid & Heat Flow | **56043** |
| **Friday, 24-5-2019** | Energy Analysis of Thermal System | **56044** |
| **Saturday, 25-5-2019** | Design Of Heat Transfer Equipment’s | **56045** |
| **Monday, 27-5-2019** | **Elective-III** | Design Of Renewable Energy Equipment’s & System | **56049** |
| Cryogenics | **56050** |
| Open Elective | **56053** |
| **Tuesday, 28-5-2019** | **Elective-IV** | Gas Turbines & Jet Propulsion | **56051** |
| Advanced Mathematical Methods & Optimization | **56052** |
| Design Of pumps, Compressors & Blowers | **56054** |

**SEMESTER – II BRANCH - MECHANICAL**

**New-Course - from – May, 2013 Time: 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Mechanical-Design Engineering** | Advanced Theory Of Vibrations | **56150** |
| **Friday, 24-5-2019** | Advanced Design Engineering | **56151** |
| **Saturday, 25-5-2019** | Analysis and Synthesis of Mechanisms | **56152** |
| **Monday, 27-5-2019** | **Elective-III** | Design for Sustainability & Life Cycle Cost | **56158** |
| Tribology | **56159** |
| Open Elective | **56160** |
| Experimental Stress Analysis | **56157** |
| **Tuesday, 28-5-2019** | **Elective-IV** | Noise And Vibration Harshness ( NVH) | **56161** |
| Vehicle Dynamics | **56162** |
| Engineering Fracture Mechanics | **56163** |
| Design for Manufacture & Assembly | **56164** |
| **Only For Student & College Information**  **Computer Aided Analysis Lab – 56153 T/W & Ext., Seminar – II 56154 T/W**  **Comprehensive Viva 5615, Industrial Training 56156** | | | |

**SEMESTER – II BRANCH - MECHANICAL**

**New – Course – from – May, 2013 Time: 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Mechanical-Production Engineering** | Optimization Techniques | **56228** |
| **Friday, 24-5-2019** | Advanced Casting Technology | **56229** |
| **Saturday, 25-5-2019** | Production & Operations Management | **56230** |
| **Monday, 27-5-2019** | **Elective-III** | Fabrication Engg. Welding Technology | **56235** |
| Entrepreneurship Development | **56236** |
| Precision Manufacturing | **56237** |
| Reliability Engineering | **56238** |
| World Class Manufacturing | **56239** |
| Total Quality Management | **56240** |
| **Tuesday, 28-5-2019** | **Elective-IV** | Plastics Processing & Die Design | **56241** |
| Automatic Control Engineering | **56242** |
| Enterprise Resource Planning | **56243** |
| Industrial Automation & Robotics | **56244** |
| Project Management | **56245** |
| Open Elective | **56246** |
| **Only For Student & College Information**  **Adv. Manufacturing Engg. Lab. – 56231 T/W , Ext., Automation & Simulation Lab. - ­ 56232 T/W Ext.**  **Seminar- II 56233 T/W, Comprehensive Viva Voce 56234 Ext.** | | | |

**SEMESTER – II BRANCH - MECHANICAL**

**New-Course – from – May, 2013 Time: 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Mechanical-Product Design & Development** | Manufacturing System Design | **56262** |
| **Friday, 24-5-2019** | Creativity, Innovation & New Product Development | **56263** |
| **Saturday, 25-5-2019** | Product Life Cycle Management | **56264** |
| **Monday, 27-5-2019** | **Elective-III** | Experimental Stress Analysis | **56267** |
| Reliability Engineering | **56268** |
| Industrial Robotics & Expert System | **56269** |
| Open Elective | **56270** |
| **Tuesday, 28-5-2019** | **Elective-IV** | Rapid Prototyping | **56271** |
| Engineering Optimization In Design | **56272** |
| Al.& Neural Network | **56273** |
| TQM & Six Sigma | **56274** |

**SEMESTER II**

**BRANCH – VLSI AND EMBEDDED SYSTEM**

**New Course from – May 2014 Time: 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **SUB-BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **VLSI**  **AND**  **EMBEDDED SYSTEM** | CMOS VLSI DESIGN –II | **60751** |
| **Friday, 24-5-2019** | Analog & Mixed signal Design | **60752** |
| **Saturday, 25-5-2019** | Embedded Software Design | **60753** |
| **Monday, 27-5-2019** | Testing & Text ability | **60754** |
| **Tuesday, 28-5-2019** | **Elective-II** | DSP VLSI – II | **60756** |
| Automotive Embedded System | **60757** |
| Low Power VLSI design | **60758** |
| System on chip Architecture –II | **60759** |

**SEMESTER II**

**New Course from May- 2015 Time: 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **CHEMICAL** | Advanced Mass Transfer System | **64221** |
| **Friday, 24-5-2019** | Modern Reaction Engineering | **64222** |
| **Saturday, 25-5-2019** | Chemical Process Control | **64223** |
| **Monday, 27-5-2019** | **Elective-III**  Computational Fluid Dynamics | **64224** |
| Energy Engineering | **64225** |
| Research Methodology | **64226** |
| **Tuesday, 28-5-2019** | **Elective IV**  Project Management | **64227** |
| Modern Separation Process | **64228** |
| Down Stream Processing | **64229** |
| Operation Research | **64230** |

**SEMESTER II**

**New Course from – May 2015 Time: 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **ELECTRONIC** | Real Time Embedded System Design | **63946** |
| **Friday, 24-5-2019** | Advanced Process Control | **63947** |
| **Saturday, 25-5-2019** | Power Electronics System | **63948** |
| **Monday, 27-5-2019** | **Elective-III**  Design and Analysis or Algorithms | **63949** |
| Design of Analog and Mixed Mode VLSI Circuits | **63950** |
| Artificial Neural Networks | **63951** |
| Cryptography and Network Security  Cognitive Radio Communication and Network | **63952**  **64059** |
| **Tuesday, 28-5-2019** | **Elective-IV** | Fuzzy System | **63954** |
| VLSI in Digital Signal Processing | **63955** |
| RF & Microwave Circuits | **63956** |
| Renewable & Distributed Energy System | **63957** |
| Advanced Computer Architecture | **63958** |

**SEMESTER II**

**New Course from – December 2014 Time: 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **CAD-CAM** | Product Life Cycle Management | **63976** |
| **Friday, 24-5-2019** | Advanced Mechanics or Materials | **63977** |
| **Saturday, 25-5-2019** | Automation & Robotics | **63978** |
| **Monday, 27-5-2019** | Design Optimization Techniques | **63979** |
| **Tuesday, 28-5-2019** | **Elective-II**  Nano Technology | **63980** |
| Industrial Product Design | **63981** |
| Computational Fluid Dynamics | **63982** |
| Reliability Engineering | **63983** |

**Semester-II New Course**

**Br. Environmental**

**Time : 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Environmental** | Industrial Waste Treatment | **66372** |
| **Friday, 24-5-2019** | Biological Waste Water Treatment | **66373** |
| **Saturday, 25-5-2019** | Environmental Impact Assessment and Legislation | **66374** |
| **Monday, 27-5-2019** | **Elective-III**  Remote Sensing and GIS  Watershed Management  Environmental Modeling and Simulation | **66376**  **66377**  **66378** |
| **Tuesday, 28-5-2019** | **Elective IV**  Environmental Management System  Disaster Planning and Risk Analysis  Environmental Geotechology | **66379**  **66380**  **66381** |

**SEMESTER-II Branch ELECTRONICS & TELECOMMUNICATION**

**Time : 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Electronics**  **And Telecommunication** | Advance Microwave Circuit Design | **66395** |
| **Friday, 24-5-2019** | Adhoc and Wireless Sensor Network | **66396** |
| **Saturday, 25-5-2019** | Computer Vision | **66397** |
| **Monday, 27-5-2019** | **Elective-II**  1-Cryolography and Network Security  2.Multi Rate System  3.SDRand cognitive Radio Technology  4.DSP architecture and Algorithm | **66400**  **66401**  **66402**  **66403** |
| **Tuesday, 28-5-2019** | **Elective-III**  Advanced Operating Systems | **66404** |
| Optimization Techniques | **66405** |
| Industry Automation and Process Control | **66406** |
| Nanotechnology | **66407** |

**SEMESTER-II Branch Industrial Engineering**

**Time : 3.00 p.m. to 6.00 p.m.**

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| **DAY & DATE** | **BRANCH** | **PAPER** | |
| **Thursday, 23-5-2019** | **Industrial Engineering** | Optimization Techniques | **68686** |
| **Friday, 24-5-2019** | Human Factors Engineering | **68687** |
| **Saturday, 25-5-2019** | Production Planning and Inventory Control | **68688** |
| **Monday, 27-5-2019** | **Elective-III**  1-Quality Engineering  2.Facility Layout and Design  3. Maintenance Engineering  4. Scheduling Algorithms  5. Productivity Management | **68689**  **68690**  **68691**  **68692**  **68693** |
| **Tuesday, 28-5-2019** | **Elective-IV**  Multivariate Statistical Modeling | **68694** |
| Logistics Management | **68695** |
| Industrial Safety Engineering | **68696** |
| Industrial Product Design | **68697** |
| World Class Manufacturing | **68698** |

**NOTE:**

1. The examination programme is subject to change. If there is any change in examination programme, it will be communicated in time however the University is not responsible for the loss or inconvenience caused to the candidate.

The Candidates are allowed to use the electronic calculators for numerical calculations at

their own cost. University will not supply such calculators.

1. The cellular Phone, Scientific Calculator & Digital Diary or any means, which can be used for unfair practice, are not allowed in the Examination hall.
2. The students should verify the customized time table given on their Hall Ticket with the final programme sent to their college at least two days prior to the date of examination.
3. In case of any Query found in respective Question Paper, student shall communicate the same through Principal/Senior Supervisor within 7 days from the date of concerned Question Paper to, Deputy Registrar, Appointment Section, Room No. 205, Exam Building No. 1, Shivaji University, Kolhapur-416004.
4. It is hereby informed that, Last chance to be held in May-2019 examination. These chance are available for repeater students, if any.

Sd/-

**Kolhapur Shri M. A. Kakade**

**Date:01.04.2019 Director, Board of Examination and Evaluation**