

# SHIVAJI UNIVERSITY, KOLHAPUR

## DRAFT 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	DKT's 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	Department of Technology, New Building, Shivaji University, Kolhapur.	Kolhapur Institute Of Technology's College of Engineering , Gokul Shirgaon, D. Y. Patil College Of Engineering. & Technology Kasaba Bawada, Kolhapur Bharati Vidypeeth's College of Engineering, Kolhapur
13	Panhala	Sanjeevan Engineering and Technology Institute, Panhala
14	LIMB	Gourishankar College of Engineering, Limb

3. 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.**

BRANCH	Sub-Branch	Papers	
CIVIL	Structure	Theory of Elasticity & Plasticity Time 10.00 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 1.00p.m.**

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.**

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.**

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 Bioseparation Processes	42985
COMPUTER SCIENCE	-	<b>Elective – I</b>	
		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.**

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

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

<b>DAY &amp; DATE</b>	<b>SUB-BRANCH</b>	<b>PAPER</b>	
<b>Wednesday, 22-5-2019</b>	<b>Mechanical-Production Engineering</b>	Advanced Materials and Manufacturing Processes	<b>56210</b>
<b>Thursday, 23-5-2019</b>		Design Of Experiments and Research Methodology	<b>56211</b>
<b>Friday, 24-5-2019</b>		Metal Forming Technology	<b>56212</b>
<b>Saturday, 25-5-2019</b>	<b>Elective-I</b>	Facility Planning & Plant Layout	<b>56216</b>
		Advanced Machine Tool Design	<b>56217</b>
		Mechatronic System Design	<b>56218</b>
		Advanced Tooling & Die Design	<b>56219</b>
		Human Resource Management	<b>56220</b>
		Costing & Cost Control	<b>56221</b>
<b>Monday, 27-5-2019</b>	<b>Elective-II</b>	Advanced Fluid Power Engineering	<b>56222</b>
		Manufacturing System Design	<b>56223</b>
		MEMS & Nanotechnology	<b>56224</b>
		Supply Chain Management & Logistics	<b>56225</b>
		Engineering Economics	<b>56226</b>
			<b>56227</b>

**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.**

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

### **SEMESTER – I BRANCH - MECHANICAL**

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

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

<b>DAY &amp; DATE</b>	<b>SUB-BRANCH</b>	<b>PAPER</b>	
<b>Wednesday, 22-5-2019</b>	<b>Mechanical-Machine Design</b>	Mathematical Modeling And Design Optimization	<b>55589</b>
<b>Thursday, 23-5-2019</b>		Advanced Mechanics Of Solids	<b>55590</b>
<b>Friday, 24-5-2019</b>		Advanced Theory Of Vibrations	<b>55591</b>
<b>Saturday, 25-5-2019</b>	<b>Elective-I</b>	Tribology	<b>55592</b>
		Process Equipment Design	<b>55593</b>
		Advanced Finite Element Analysis	<b>55594</b>
		Mechatronics	<b>55595</b>
<b>Monday, 27-5-2019</b>	<b>Elective-II</b>	Vibration Control and Condition Monitoring	<b>55596</b>
		Product Design and Development	<b>55597</b>
		Material Handling Equipment Design	<b>55598</b>
		Robotics	<b>55599</b>

**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.**

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

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

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.

DAY & DATE	Sub – Branch	Paper	
Wednesday, 22-5-2019	<b>VLSI and Embedded System</b>	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		<b>Elective – I</b>	
		DSP VLSI – I	60747
		System on Chip Architecture – I	60748
		Communication System Design	60749
		Algorithm for VLSI Design Automation	60750
		Seminar – I	60746 TW

### SEMESTER-I New course

Branch- Environmental  
p.m.

Time : 10.00 a.m. to 1.00

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

**SEMESTER – I**  
**BRANCH – ELECTRONICS & TELECOMMUNICATION (New Course)**  
**Time: 10.00 a.m. to 01.00 p.m.**

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.**

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	Stochastic Process and Markov Chains	68673
		Manufacturing System Design	68674
		Probabilistic Risk 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.**

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		<b>Elective-I</b> Nanotechnology	64212
		Green Technology	64213
		Pharmaceutical Biotechnology	64214
Monday, 27-5-2019		<b>Elective-II</b> 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.**

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		<b>Elective-I</b> High Performance Communication Network	63934
		Design of Digital Circuit and Logic Design	63935
		Optimization Techniques	63936
		Advance Communication System	63937
Monday, 27-5-2019		<b>Elective II</b> 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.**

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		<b>Elective-I</b> Advanced Design Engineering	63969
		Advanced Tool Design	63970
		Design of Hydraulic and Pneumatic System	63971
		Mechatronic System Design	63972

## SEMESTER – II

**Day & Date : - Thursday, 23-5-2019**

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

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 & BIOTECHNOLOGY	-	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: 10.00 a.m. to 1.00 p.m.**

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

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

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

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

<b>BRANCH</b>	<b>Sub- Branch</b>	<b>Papers</b>	
<b>CIVIL</b>	<b>Structure</b>	Advanced Design of Steel Structure Time: 10.00 a.m. to 2.00 p.m.	<b>34349</b>
	<b>Environment</b>	Environmental Policy Laws & Economic	<b>36023</b>
	<b>Construction &amp; Management</b>	Computational Methods & Optimization Techniques	<b>34327</b>
<b>ELECTRICAL</b>	<b>Power System</b>	<b>Elective-I</b> H.V. Engg.	<b>34518</b>
		Power Controllers.	<b>34519</b>
		Power System Instrumentation	<b>36015</b>
		Fuzzy Logic & Artificial Neural Network	<b>34520</b>
	<b>Control System</b>	<b>Elective-I</b> Micro-Controllers & Applications	<b>34529</b>
		Optimization Techniques	<b>34530</b>
		Identification & Estimation	<b>34531</b>
		Adaptive Control Systems	<b>34532</b>
		Multivariable Control System	<b>36051</b>
		Robust Control	<b>36052</b>
	<b>ELECTRONICS &amp; TELECOMM.</b>	<b>Elective-II</b>	Multi Rate Systems & Filter
Cryptography & Network Security			<b>43031</b>
Speech & Audio Processing			<b>43032</b>
<b>BIOCHEMICAL ENGINEERING &amp; BIO-TECHNOLOGY</b>	-	Advanced Genetic Engineering	<b>43451</b>
<b>COMPUTER SCIENCE</b>	<b>Elective – II</b>	Artificial Neural Network & Genetic algorithms	<b>48771</b>
		Operating System Design & Evaluation	<b>48772</b>
		Multicore Architecture & Programming	<b>48773</b>
<b>CAD/CAM/CAE</b>	-	Optimization Techniques	<b>48745</b>
<b>AUTOMOBILE</b>	-	Noise & Vibration	<b>38725</b>

## SEMESTER-II

Day &amp; Date : - Tuesday, 28-5-2019 Time: 10.00 a. m to 1.00 p.m.

BRANCH	Sub- Branch	Papers	
CIVIL	Structure	<b>Elective-II</b> 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	<b>Elective-II</b> Environmental Quality Management	36024
		Remote Sensing & GIS Applications in Environmental Engineering	36025
	Construction & Management	<b>Elective-II</b> Advanced Construction	35995
		Appropriate Technology	35996
		Environmental Impact Assessment	35997
	ELECTRICAL	Power System	<b>Elective-II</b> Adv. Microprocessor of Techniques for Power System
Electric Power Quality & Harmonics			34522
Artificial Intelligence & Expert Systems			36016
Control System		<b>Elective-II</b> 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.		<b>Elective-III</b> Mobile Computing	43033
	Stochastic Models & Queuing Theory	43034	
	Communication System Design	43035	
	Optical Networks	43036	
BIOCHEMICAL ENGINEERING & BIO-TECHNOLOGY	<b>Elective-II</b> Planet Biotechnology	43452	
	Pharmaceutical Biotechnology	43453	
	Advanced protein Engineering	43454	
	Advanced Bioinformatics	43455	

**SEMESTER – II****Day & Date :- Tuesday, 28-5-2019****Time:10.00 a.m. to 1.00 p.m.**

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

**SEMESTER – II BRANCH – MECHANICAL****New Course – From – May, 2013****Time: 10.00 a.m. to 1.00 p.m.**

<b>DAY &amp; DATE</b>	<b>SUB-BRANCH</b>	<b>PAPER</b>	
<b>Thursday, 23-5-2019</b>	<b>Mechanical- Machine Design</b>	Advanced Material Science	<b>55602</b>
<b>Friday, 24-5-2019</b>		Advanced Machine Design	<b>55603</b>
<b>Saturday, 25-5-2019</b>		Mechanics Of Machinery	<b>55604</b>
<b>Monday, 27-5-2019</b>	<b>Elective-III</b>	Experimental Stress Analysis	<b>55605</b>
		Composite Materials	<b>55606</b>
		Advanced Machine Tool Design	<b>55607</b>
		Open Elective	<b>55608</b>
<b>Tuesday, 28-5-2019</b>	<b>Elective-IV</b>	Noise & Vibration Harshness (NVH)	<b>55609</b>
		Vehicle Dynamics	<b>55610</b>
		Engineering Fracture Mechanics	<b>55611</b>
		Reliability Engineering	<b>55612</b>
<b>Only For Student &amp; College Information</b> 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 : 10.00 a.m. to 1.00 p.m.**

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

**SEMESTER – II BRANCH - MECHANICAL****New-Course - from – May, 2013****Time: 10.00 a.m. to 1.00 pm.**

DAY & DATE	SUB-BRANCH	PAPER	
Thursday, 23-5-2019	<b>Mechanical-Design Engineering</b>	Advanced Theory Of Vibrations	<b>56150</b>
Friday, 24-5-2019		Advanced Design Engineering	<b>56151</b>
Saturday, 25-5-2019		Analysis and Synthesis of Mechanisms	<b>56152</b>
Monday, 27-5-2019	<b>Elective-III</b>	Design for Sustainability & Life Cycle Cost	<b>56158</b>
		Tribology	<b>56159</b>
		Open Elective	<b>56160</b>
		Experimental Stress Analysis	<b>56157</b>
Tuesday, 28-5-2019	<b>Elective-IV</b>	Noise And Vibration Harshness ( NVH)	<b>56161</b>
		Vehicle Dynamics	<b>56162</b>
		Engineering Fracture Mechanics	<b>56163</b>
		Design for Manufacture & Assembly	<b>56164</b>
<b>Only For Student &amp; College Information</b> 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: 10.00 a.m. to 1.00 pm.**

DAY & DATE	SUB-BRANCH	PAPER	
Thursday, 23-5-2019	<b>Mechanical- Production Engineering</b>	Optimization Techniques	<b>56228</b>
Friday, 24-5-2019		Advanced Casting Technology	<b>56229</b>
Saturday, 25-5-2019		Production & Operations Management	<b>56230</b>
<b>Monday, 27-5-2019</b>	<b>Elective-III</b>	Fabrication Engg. Welding Technology	<b>56235</b>
		Entrepreneurship Development	<b>56236</b>
		Precision Manufacturing	<b>56237</b>
		Reliability Engineering	<b>56238</b>
		World Class Manufacturing	<b>56239</b>
		Total Quality Management	<b>56240</b>
<b>Tuesday, 28-5-2019</b>	<b>Elective-IV</b>	Plastics Processing & Die Design	<b>56241</b>
		Automatic Control Engineering	<b>56242</b>
		Enterprise Resource Planning	<b>56243</b>
		Industrial Automation & Robotics	<b>56244</b>
		Project Management	<b>56245</b>
		Open Elective	<b>56246</b>
<b>Only For Student &amp; College Information</b> 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: 10.00 a.m. to 1.00 p.m.**

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



**SEMESTER II**  
**BRANCH – VLSI AND EMBEDDED SYSTEM**  
**New Course from – May 2014      Time: 10.00 a.m. to 1.00 pm.**

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

**SEMESTER II**  
**New Course from May- 2015      Time: 10.00 a.m. to 1.00 p. m.**

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

**SEMESTER II****New Course from – May 2015****Time: 10.00 am. to 1.00 pm.**

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

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

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

**SEMESTER-II Branch ELECTRONICS & TELECOMMUNICATION**  
**Time : 10.00 a.m. to 1.00 p.m.**

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

**SEMESTER-II Branch Industrial Engineering**

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

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

**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.
- 2) The cellular Phone, Scientific Calculator & Digital Diary or any means, which can be used for unfair practice, are not allowed in the Examination hall.
- 3) 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.
- 4) 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.
- 5) It is hereby informed that, Last chance to be held in May-2019 examination. These chance are available for repeater students, if any.

**Kolhapur**  
**Date:15.03.2019**

Sd/-  
**Shri M. A. Kakade**  
**Director, Board of Examination and Evaluation**