



Progressive Education Society's  
**Modern College of Engineering,**  
Shivajinagar, Pune-5

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### 1.2 Academic Flexibility

Cr. No.	Key Aspects	Assessment Indicators	Details	Evidence
1.2.1	Academic Flexibility	<i>Number of Programmes in which Choice Based Credit System (CBCS)/ elective course system has been implemented</i>	Program Structure	Syllabus structure
			Elective Course List	Elective Courses

Progressive Education Society's  
**Modern College of Engineering**  
**AQAR Criteria I**

*1.2.1 Number of Programmes in which Choice Based Credit System (CBCS)/ elective course system has been implemented*

<b>Sr No</b>	<b>Programme Code</b>	<b>Programme name</b>	<b>Year of Introduction</b>	<b>Status of implemetation of elective course system (Yes/No)</b>	<b>Year of implemetation of CBCS / elective course system</b>
1	613924510	Computer Engineering	2015	Yes	2020-21
2	613937210	Electronics and Telecommunication Engineering	2015	Yes	2020-21
3	613929310	Electrical Engineering	2015	Yes	2020-21
4	613924610	Information Technology	2015	Yes	2020-21
5	613961210	Mechanical Engineering	2015	Yes	2020-21
6	613910110	Master of Business Administration		Yes	2020-21
7	613924110	Master in Computer Application		Yes	2020-21
8	613959610	ME - Heat Power Mechanical Engineering	2017	Yes	2020-21
9	613935810	ME - Signal Processing	2017	Yes	2020-21
10	613929410	ME - Control System Electrical Engineering	2017	Yes	2020-21
11	613924510	ME - Computer Engineering	2017	Yes	2020-21

## First Year Engineering

### Savitribai Phule Pune University Faculty of Science & Technology



### Curriculum For First Year Bachelor of Engineering (Choice Based Credit System) (2019 Course) (With Effect from Academic Year 2019-20)

TABLE -1 First Engineering Structure for Semester-I														
Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credits			
		Theory	Practical	Tutorial	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
107001	Engineering Mathematics-I	03	--	01	30	70	25	--	--	125	03	--	01	04
107002/ 107009	Engineering Physics / Engineering Chemistry	04	02	--	30	70	--	25	--	125	04	01	--	05
102003	Systems in Mechanical Engineering	03	02	--	30	70	--	25	--	125	03	01	--	04
103004/ 104010	Basic Electrical Engineering / Basic Electronics Engineering	03	02	--	30	70	--	25	--	125	03	01	--	04
110005/ 101011	Programming and Problem Solving / Engineering Mechanics	03	02	--	30	70	--	25	--	125	03	01	--	04
111006	Workshop <sup>4</sup>	--	02	--	--	--	--	25	--	25	--	01	--	01
<b>Total</b>		16	10	01	150	350	25	125	--	650	16	05	01	22
101007	Audit Course 1 <sup>4</sup>	02			Environmental Studies-I									
Induction Program : 2 weeks at the beginning of semester-I and 1 week at the beginning of semester-II														
TABLE -2 First Engineering Structure for Semester-II														
Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credits			
		Theory	Practical	Tutorial	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
107008	Engineering Mathematics-II	04	--	01	30	70	25	--	--	125	04	--	01	05
107002/ 107009	Engineering Physics/ Engineering Chemistry	04	02	--	30	70	--	25	--	125	04	01	--	05
103004/ 104010	Basic Electrical Engineering / Basic Electronics Engineering	03	02	--	30	70	--	25	--	125	03	01	--	04
110005/ 101011	Programming and Problem Solving / Engineering Mechanics	03	02	--	30	70	--	25	--	125	03	01	--	04
102012	Engineering Graphics <sup>4</sup>	01	02	01	--	50	25	--	--	75	01	01	--	02
110013	Project Based Learning <sup>4</sup>	--	04	--	--	--	25	50	--	75	--	02	--	02
<b>Total</b>		15	12	02	120	330	75	125	--	650	15	05	02	22
101014	Audit Course 2 <sup>4</sup>	02			Environmental Studies-II									
107015		--			Physical Education-Exercise and Field Activities									

- SE Mechanical 2019 Course - CBCS

**Savitribai Phule Pune University**  
**Faculty of Science & Technology**



Curriculum/Syllabus  
for  
**Second Year**  
**Bachelor of Engineering**  
**(Choice Based Credit System)**  
**Mechanical Engineering and Automobile Engineering**  
**(2019 Course)**

**Board of Studies - Automobile and Mechanical Engineering**  
(With Effect from Academic Year 2020-21)

**Savitribai Phule Pune University**  
**Board of Studies - Automobile and Mechanical Engineering**  
**Undergraduate Program - Automobile Engineering & Mechanical Engineering (2019 pattern)**

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks					Credit				
		TH	PR	TUT	ISE	ESE	TW	PR	OR	TOTAL	TH	PR	TUT	TOTAL
<b>Semester-III</b>														
202041	Solid Mechanics	4	2	-	30	70	-	50	-	150	4	1	-	5
202042	Solid Modeling and Drafting	3	2	-	30	70	-	50	-	150	3	1	-	4
202043	Engineering Thermodynamics	3	2	-	30	70	-	-	25	125	3	1	-	4
202044	Engineering Materials and Metallurgy	3	2	-	30	70	25	-	-	125	3	1	-	4
203156	Electrical and Electronics Engineering	3	2	-	30	70	25	-	-	125	3	1	-	4
202045	Geometric Dimensioning and Tolerancing Lab	-	2	-	-	-	25	-	-	25	-	1	-	1
202046	Audit Course - III	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>		<b>16</b>	<b>12</b>	<b>-</b>	<b>150</b>	<b>350</b>	<b>75</b>	<b>100</b>	<b>25</b>	<b>700</b>	<b>16</b>	<b>6</b>	<b>-</b>	<b>22</b>
<b>Semester-IV</b>														
207002	Engineering Mathematics - III	3	-	1	30	70	25	-	-	125	3	-	1	4
202047	Kinematics of Machinery	3	2	-	30	70	-	-	25	125	3	1	-	4
202048	Applied Thermodynamics	3	2	-	30	70	-	-	25	125	3	1	-	4
202049	Fluid Mechanics	3	2	-	30	70	-	-	25	125	3	1	-	4
202050	Manufacturing Processes	3	-	-	30	70	-	-	-	100	3	-	-	3
202051	Machine Shop	-	2	-	-	-	50	-	-	50	-	1	-	1
202052	Project Based Learning - II	-	4	-	-	-	50	-	-	50	-	2	-	2
202053	Audit Course - IV	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>		<b>15</b>	<b>12</b>	<b>1</b>	<b>150</b>	<b>350</b>	<b>125</b>	<b>-</b>	<b>75</b>	<b>700</b>	<b>15</b>	<b>6</b>	<b>1</b>	<b>22</b>
<p><b>Abbreviations:</b> TH: Theory, PR: Practical, TUT: Tutorial, ISE: In-Semester Exam, ESE: End-Semester Exam, TW: Term Work, OR: Oral</p>														
<p><b>Note:</b> Interested students of SE (Automobile Engineering and Mechanical Engineering) can opt for any one of the audit course from the list of audit courses prescribed by BoS (Automobile and Mechanical Engineering)</p>														
<p><b>Instructions</b></p> <ul style="list-style-type: none"> <li>• Practical/Tutorial must be conducted in three batches per division only.</li> <li>• Minimum number of required Experiments/Assignments in PR/ Tutorial shall be carried out as mentioned in the syllabi of respective subjects.</li> <li>• Assessment of tutorial work has to be carried out as a term-work examination. Term-work Examination at second year of engineering course shall be internal continuous assessment only.</li> <li>• Project based learning (PBL) requires continuous mentoring by faculty throughout the semester for successful completion of the tasks selected by the students per batch. While assigning the teaching workload of 2 Hrs/week/batch needs to be considered for the faculty involved. The Batch needs to be divided into sub-groups of 5 to 6 students. Assignments / activities / models/ projects etc. under project based learning is carried throughout semester and Credit for PBL has to be awarded on the basis of internal continuous assessment and evaluation at the end of semester.</li> <li>• Audit course is mandatory but non-credit course. Examination has to be conducted at the end of Semesters for award of grade at institute level. Grade awarded for audit course shall not be calculated for grade point &amp; CGPA.</li> </ul>														

- **BE Mechanical 2015 Course – Elective System**

**Savitribai Phule Pune University**



**Faculty of Science and  
Technology**

**Syllabus for Final Year of Mechanical Engineering**

**(Course 2015)**

# Savitribai Phule Pune University

## B. E. (Mechanical) (2015 Course) Semester – I

Code	Subject	Teaching Scheme Hrs / week			Examination Scheme					Total Marks	Credits	
		Lecture	Tut	Pract	In Sem	End Sem	TW	PR	OR		Theory	TW/ Pr/OR
402041	Hydraulics and Pneumatics	3	-	2	30	70	25	-	25	150	3	1
402042	CAD CAM Automation	3	-	2	30	70	25	50	-	175	3	1
402043	Dynamics of Machinery	4	-	2	30	70	25	-	25	150	4	1
402044	Elective-I	3	-	2	30	70	25	-	-	125	3	1
402045	Elective-II	3	-	-	30	70	-	-	-	100	3	-
402046	Project-I	-	-	4	-	-	25	-	25	50	-	2
<b>Total</b>		16	-	12	150	350	125	50	75	750	16	6
											22	

## B. E. (Mechanical) (2015 Course) Semester – II

Code	Subject	Teaching Scheme Hrs / week			Examination Scheme					Total Marks	Credits	
		Lecture	Tut	Pract	In Sem	End Sem	TW	PR	OR		Theory	TW/ Pr/OR
402047	Energy Engineering	3	-	2	30	70	25	-	25	150	3	1
402048	Mechanical System Design	4	-	2	30 (1.5 Hrs)	70 (3 Hrs)	25	-	50	175	4	1
402049	Elective-III	3	-	2	30	70	25	-	-	125	3	1
402050	Elective-IV	3	-	-	30	70	-	-	-	100	3	-
402051	Project-II	-	-	12	-	-	100	-	100	200	-	6
<b>Total</b>		13	-	18	120	280	175	-	175	750	13	9
											22	

Elective – I				Elective – II			
Code	Subject	Code	Subject				
402044 A	Finite Element Analysis	402045 A	Automobile Engineering				
402044 B	Computational Fluid Dynamics	402045 B	Operation Research				
402044 C	Heating Ventilation and Air Conditioning	402045 C	Energy Audit and Management				
		402045 D	Open Elective**				

Elective – III				Elective – IV			
Code	Subject	Code	Subject				
402049 A	Tribology	402050 A	Advanced Manufacturing Processes				
402049 B	Industrial Engineering	402050 B	Solar & Wind Energy				
402049 C	Robotics	402050 C	Product Design and Development				
		402050 D	Open Elective**				

**Master of Business Administration (MBA) – Revised Syllabus 2019**

**2 year, 4 Semester Full time Programme**  
**Choice Based Credit System (CBCS) and Grading System**  
**Outcome Based Education Pattern**

MBA I effective from AY 2019-20

MBA II effective from AY 2020-21

**1.0 Preamble:** The revised MBA Curriculum 2019 builds on the implementation of the Choice Based Credit System (CBCS) and Grading System initiated in the AY 2013. The curriculum takes the MBA programme to the next level in terms of implementing Outcome Based Education along with the Choice Based Credit System (CBCS) and Grading System.

**2.0 Definitions:**

**2.1 Outcome Based Education:**

**2.1.1 Outcome Based Education (OBE) Approach:** Outcomes are about performance, and this implies:

- a) There must be a performer – the student (learner), not only the teacher
- b) There must be something performable (thus demonstrable or assessable) to perform
- c) The focus is on the performance, not the activity or task to be performed

**2.1.2 Programme Educational Objectives (PEOs):** Programme Educational Objectives are a set of **broad future-focused student performance outcomes** that explicitly identify what students will be **able to do with what they have learned**, and **what they will be like** after they leave school and are **living full and productive lives**. Thus PEOs are what the programme is preparing graduates for in their **career and professional life** (to attain within a **few years** after graduation<sup>1</sup>).

**2.1.3 Graduate Attributes (GAs):** Graduate Attributes (GAs) are the **qualities, knowledge and capabilities** that students are encouraged to take responsibility for developing throughout their studies and are the **defining characteristics** of the students passing out of the MBA program. These attributes include, but go **beyond, the disciplinary expertise or technical knowledge**.

**2.1.4 Programme Outcomes (POs):** Programme Outcomes are a set of **narrow statements** that describes what students (learners) **of the programme** are expected to know and be able to perform or attain **by the time of graduation**.

**2.1.5 Programme Specific Outcomes (PSOs):** Programme Outcomes are a set of **narrow statements** that describes what students (learners) **of a particular specialization of the programme** are expected to know and be able to perform or attain **by the time of graduation**. PSOs are also a function of the various course combinations offered by the Institute.

**2.1.6 Learning Outcomes:** A learning outcome is what a student **CAN DO** as a result of a learning experience. It describes a **specific task** that he/she is able to perform at a **given level of competence under a certain situation**. The three broad types of learning outcomes are:

- a) Disciplinary knowledge and skills
- b) Generic skills
- c) Attitudes and values

**2.1.7 Course Outcomes (COs):** A set of specific statements that describes the **complex performances** a student should be capable of as a result of **learning experiences within a course**.

**2.1.8 Teaching and Learning Activities (TLAs):** The set of **pedagogical tools and techniques** or the teaching and learning activities that aim to **help students to attain** the intended learning outcomes and engage them in these learning activities through the teaching process.

**2.1.9 Outcome Based Assessment (OBA):** An assessment system that asks course teachers to first identify what it is that we expect students to be able to do once they have completed a course or program. It then asks course teachers to provide evidence that they are able to do so. In other words, how will each learning outcome be assessed? What **evidence of student learning** is most **relevant for each learning outcome** and **what standard or criteria** will be used to evaluate that evidence? Assessment is therefore a key part of outcome-based education and used to determine whether or not a qualification has been achieved.

**2.2 Credit:** *In terms of credits, for a period of one semester of 15 weeks:*

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<sup>1</sup> Graduation refers to passing out of the MBA programme. Graduation does NOT refer to 10+2+3/4 degree e.g. BA, BE, etc.



- a) every ONE hour session per week of L amounts to 1 credit per semester
- b) a minimum of TWO hours per week of T amounts to 1 credit per semester,
- c) a minimum of TWO hours per week of P amounts to 1 credit per semester,

Each credit is a combination of 3 components viz. Lecture (L) + Tutorials (T) + Practice (Practical / Project Work / Self Study) (P) i.e. LTP Pattern. Indicative LTP, for each course, is documented in the syllabus.

The course teacher may modify the LTP of the course in view of the course requirements, nature of the course, the level of learners and the type of pedagogy and assessment tools proposed. The modified LTP shall have to be approved by the Director / Head of the Department / Designated academic authority of the Institute.

- 2.3 Session:** Each teaching-learning, evaluation session shall be of 60 minutes. However, institutes shall have the flexibility to define their time slots in a manner as to use their faculty and infrastructure resources in the best possible way and ensure effective learning.
- 2.4 Course Announcement:** The institute shall announce the elective courses and specializations it proposes to offer the students out of the wider course basket. It is not mandatory to offer all the specializations and all the electives. The decision of the Director shall be final in this case. However, in the spirit of Choice Based Credit System, institutes should offer choices to the students for the elective courses and not offer only the minimum number of electives.
- 2.5 Course Registration:** It is mandatory for every student, to register every semester, for the courses opted for that semester. Each student, on admission shall be assigned to a Faculty Advisor who shall advise her/him about the academic programs and counsel on the choice of courses considering the student's profile, career goals and courses taken in the earlier semesters. With the advice and consent of the Faculty Advisor, the student shall register for a set of courses he/she plans to take up for the Semester. Students shall have to register for the courses for the semester within first week of Semester I and immediately after conclusion of the preceding term for subsequent Semesters II, III and IV.

### 3.0 MBA Programme Focus:

#### 3.1 Programme Educational Objectives (PEOs):

1. **PEO1:** Graduates of the MBA program will *successfully integrate core, cross-functional and inter-disciplinary aspects of management theories, models and frameworks with the real world practices and the sector specific nuances to provide solutions to real world business, policy and social issues in a dynamic and complex world.*
2. **PEO2:** Graduates of the MBA program will possess excellent *communication skills, excel in cross-functional, multi-disciplinary, multi-cultural teams, and have an appreciation for local, domestic and global contexts so as to manage continuity, change, risk, ambiguity and complexity.*
3. **PEO3:** Graduates of the MBA program will be appreciative of the significance of *Indian ethos and values in managerial decision making and exhibit value centered leadership.*
4. **PEO4:** Graduates of the MBA program will be ready to *engage in successful career pursuits* covering a broad spectrum of areas in *corporate, non-profit organizations, public policy, entrepreneurial ventures* and engage in *life-long learning.*
5. **PEO5:** Graduates of the MBA program will be recognized in their chosen fields for their *managerial competence, creativity & innovation, integrity & sensitivity* to local and global issues of social relevance and earn the *trust & respect* of others as *inspiring, effective and ethical leaders, managers, entrepreneurs, intrapreneurs* and change agents.

#### 3.2 Programme Outcomes (POs): At the end of the MBA programme the learner will possess the

1. **Generic and Domain Knowledge** - Ability to articulate, illustrate, analyze, synthesize and apply the knowledge of principles and frameworks of management and allied domains to the solutions of real-world complex business issues
2. **Problem Solving & Innovation** - Ability to Identify, formulate and provide innovative solution frameworks to real world complex business and social problems by systematically applying modern quantitative and qualitative problem solving tools and techniques.

3. **Critical Thinking** - Ability to conduct investigation of multidimensional business problems using research based knowledge and research methods to arrive at data driven decisions
4. **Effective Communication** - Ability to effectively communicate in cross-cultural settings, in technology mediated environments, especially in the business context and with society at large
5. **Leadership and Team Work** - Ability to collaborate in an organizational context and across organizational boundaries and lead themselves and others in the achievement of organizational goals and optimize outcomes for all stakeholders.
6. **Global Orientation and Cross-Cultural Appreciation:** Ability to approach any relevant business issues from a global perspective and exhibit an appreciation of Cross Cultural aspects of business and management.
7. **Entrepreneurship** - Ability to identify entrepreneurial opportunities and leverage managerial & leadership skills for founding, leading & managing startups as well as professionalizing and growing family businesses.
8. **Environment and Sustainability** - Ability to demonstrate knowledge of and need for sustainable development and assess the impact of managerial decisions and business priorities on the societal, economic and environmental aspects.
9. **Social Responsiveness and Ethics** - Ability to exhibit a broad appreciation of the ethical and value underpinnings of managerial choices in a political, cross-cultural, globalized, digitized, socio-economic environment and distinguish between ethical and unethical behaviors & act with integrity.
10. **LifeLong Learning** – Ability to operate independently in new environment, acquire new knowledge and skills and assimilate them into the internalized knowledge and skills.

**3.3 Programme Specific Outcomes (PSOs):** It is expected that **Institutes define the PSOs for each specialization / major-minor combination.** PSOs shall also vary based upon the **customized combination** of Generic Core, Generic Elective, Subject Core, Subject Elective, Foundation, Enrichment & Alternative Study Credit Courses that they offer.

**3.4 Graduate Attributes (GAs):** At the end of the MBA programme the learner shall exhibit:

GA1: Managerial competence

GA2: Proficiency in Communication, Collaboration, Teamwork and Leadership

GA3: Competence in Creativity & Innovation

GA4: Research Aptitude, Scholarship & Enquiry

GA5: Global Orientation

GA6: Proficiency in ICT & Digital Literacy

GA7: Entrepreneurship & Intrapreneurship Orientation

GA8: Cross-functional & Inter-disciplinary Orientation

GA9: Results Orientation

GA10: Professionalism, Ethical, Values Oriented & Socially Responsible behaviour

GA11: Life-Long Learning Orientation

#### 4.0 MBA Programme Course Types & Evaluation Pattern:

Sr.No.	Course Type	Credits	Nature	Comprehensive Concurrent Evaluation (CCE)	End Semester Evaluation (ESE) Marks	Total Marks
<b>BASIC COURSE TYPES</b>						
1	Generic Core (GC)	3	Compulsory	50	50	100
2	Subject Core (SC)	3	Compulsory (Specialization specific)	50	50	100
3	Generic Elective (GE - UL)	2	Elective	0	50	50
4	Generic Elective (GE - IL)	2	Elective	50	0	50
5	Subject Elective (SE - IL)	2	Elective (Specialization specific)	50	0	50
6	Summer Internship Project (SIP)	6	Project (Compulsory)	50	50	100
<b>ADDITIONAL COURSE TYPES</b>						
1	Enrichment Courses (ENR)	1	Elective	25	0	25

2	Foundation Courses (FOU)	1	Elective	25	0	25
3	Alternative Study Credit Courses (ASCC)	2	Elective	50	0	50
4	Open Electives (OE)	3 or 2	Subject Core / Subject Elective	As per Subject Core / Subject Elective Pattern		

#### 4.1 Course Types

- 4.1.1 **Foundation Course:** These courses focus on developing the basic abilities that support the understanding of other courses.
- 4.1.2 **Core courses** are the compulsory courses for all the students. Core courses are of two types: Generic Core & Subject Core.
- 4.1.3 **Generic Core:** This is the course which should compulsorily be studied by a candidate as a core requirement to complete the requirement of a degree in a said discipline of study. Therefore, Generic Core courses are mandatory and fundamental in nature. These courses cannot be substituted by any other courses. Such courses are also known as Hard Core Courses.
- 4.1.4 **Subject Core:** A Core course may be a Subject Core if there is a choice or an option for the candidate to choose from a broad category (grouping) of subjects (specializations / electives). These are also known as Soft Core Courses.
- 4.1.5 **Elective Course:** Elective course is a course which can be chosen from a pool of courses. It may be:
- Very Specialized or advanced course focusing on a specific aspect
  - Supportive to the discipline of study
  - Providing an extended scope
  - Enabling an exposure to some other discipline/domain
  - Nurturing candidate's proficiency/skills.
- 4.1.6 **Generic Elective:** An elective course which is common across disciplines / subjects is called a generic elective. 'Generic Elective' courses develop generic proficiencies amongst the students.
- 4.1.7 **Generic Elective – University Level:** These elective courses are supportive to the discipline of study and focus on the knowledge aspect of competence building. The course outcomes for such courses can be better assessed through traditional End Semester Evaluation.
- 4.1.8 **Generic Elective – Institute Level:** These elective courses are aimed to develop inter-personal, technical and other skills aspect of competence building. The course outcomes for such courses can be better assessed through Comprehensive Concurrent Evaluation.
- 4.1.9 **Subject Elective:** A 'Discipline (specialization) centric' elective is called 'Subject Elective.' Subject Elective courses, in the Semester II, III and IV are focused on a specialization.
- 4.1.10 **Open Elective:** A subject elective course chosen generally from another Discipline / specialization / subject, with an intention to seek cross-functional exposure is called an Open Elective. A Subject Elective offered in one specialization area may be treated as an Open Elective by another specialization area and vice-a-versa.
- 4.1.11 **Enrichment Course:** This is a course generally offered to bright learners / fast learners for advanced inputs beyond the curriculum. Enrichment / Add-on Course shall be a 1 Credit Course. The course is of the nature of Course of Independent Study (CIS) and is designed for learners who have the ability and inclination to work independently with limited guidance, supervision and interaction with the faculty member(s).
- 4.1.12 **Alternative Study Credit Courses:** These courses prepare the learners for a VUCA (Volatile Uncertain, Complex and Ambiguous) world by going beyond the boundaries of their campus. Apart from core and elective courses, these courses engage students in discussion, debate and solution of real world challenges.
- 4.1.13 **Massive Open Online Courses (MOOCs)<sup>2</sup>:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy stated in the AICTE regulation (2016) or equivalent; following the four quadrant approach and made available on the SWAYAM platform of Government of India.

#### 4.2 MBA Programme Structure: The Basic Programme Structure shall be as depicted below

<sup>2</sup> AICTE (Credit Framework for online learning course through SWAYAM) Regulations, 2016

**FACULTY OF ENGINEERING**

# **Savitribai Phule Pune University**

**Syllabus for the**

**M.E (Electronics & Telecommunications Engineering –Signal Processing)**

**(2017 Course)**

**(w.e.f. June 2017)**

# M.E.( Electronics and Telecommunications- Signal Processing)

## 2017 Pattern

### Syllabus Structure

#### First Year – Semester I

Sr.No.	Subject Code	Subject	Examination Scheme					Total	Credits
			Paper						
			L/P	ISA	ESA	TW	OR		
1	504401	Mathematics for Signal Processing	4	50	50	-	-	100	4
2	504402	Digital Image and Video Processing	4	50	50	-	-	100	4
3	504403	Advanced Digital Signal Processing	4	50	50	-	-	100	4
4	504404	Research Methodology	4	50	50	-	-	100	4
5	504405	Elective I	5	50	50	-	-	100	5
6	504406	Lab. Practice I	4	-	-	50	50	100	4
		<b>Total</b>	<b>25</b>	<b>250</b>	<b>250</b>	<b>50</b>	<b>50</b>	<b>600</b>	<b>25</b>

#### Elective I:

- 1) Advanced RISC and Digital Signal Processors
- 2) Mixed Signal Processing
- 3) Estimation and Detection Theory
- 4) Joint Time Frequency Analysis

## First Year – Semester II

Sr.No.	Subject Code	Subject	Examination Scheme				Total	Credits	
			Paper						
			L/P	ISA	ESA	TW			OR
1	504407	Biomedical Signal Processing	4	50	50	-	-	100	4
2	504408	Speech Processing	4	50	50	-	-	100	4
3	504409	Computer Vision	4	50	50	-	-	100	4
4	504410	<b>Elective II</b>	5	50	50	-	-	100	5
5	504411	Lab. Practice II	4	--	---	50	50	100	4
6	504412	Seminar I	4	-	-	50	50	100	4
		<b>Total</b>	<b>25</b>	<b>200</b>	<b>200</b>	<b>100</b>	<b>100</b>	<b>600</b>	<b>25</b>

### **Elective II:**

- 1) Soft Computing
- 2) Pattern Recognition
- 3) Architectures in Signal Processing
- 4) Biometrics

## Second Year – Semester I

Sr. No.	Subject Code	Subject	Examination Scheme				Total		Credits
			Paper				OR		
			L/P	ISA	ESA	TW			
1	604401	Statistical Signal Processing	4	50	50	-	-	100	4
2	604402	Still Image and Video Compression	4	50	50	-	-	100	4
3	604403	Elective III*	5	50	50	-	-	100	5
4	604404	Seminar II	4	--	----	50	50	100	4
5	604405	Project Stage I	8	--	---	50	50	100	8
		<b>Total</b>	<b>25</b>	<b>150</b>	<b>150</b>	<b>100</b>	<b>100</b>	<b>500</b>	<b>25</b>

\*Elective III will be combination of subjects with 3 credits and 2 credits

### Elective with 3 credits

- 1) Value Education, Human rights and Legislative procedures
- 2) Environmental studies
- 3) Renewable Energy Studies
- 4) Disaster Management
- 5) Knowledge Management
- 6) Foreign Language
- 7) Economics for engineers
- 8) Engineering risk – Benefit and analysis

### Elective with 2 credits

- 1) Optimization techniques
- 2) Fuzzy Mathematics
- 3) Design and Analysis of algorithms
- 4) CUDA

## Second Year – Semester II

Sr.No.	Subject Code	Subject	Examination Scheme				Total		Credits
			Paper				OR		
			L/P	ISA	ESA	TW			
4	604406	Seminar III	5	--	----	50	50	100	5
5	604407	Project Stage II	20	--	---	150	50	200	20
		<b>Total</b>	<b>25</b>		<b>--</b>	<b>200</b>	<b>100</b>	<b>300</b>	<b>25</b>





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BE Elective Report –



Progressive Education Society's  
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DEPARTMENT OF MECHANICAL ENGINEERING

Title of the Activity: Elective Orientation Report

Day & Date: 16<sup>th</sup> June 2020 - Tuesday

Category of Activity: Orientation Program

Organized Under: Department of Mechanical Engineering

Objectives: To make students aware regarding elective subjects and their importance

Level: Departmental

Name of Speaker or Expert: -----

Organizer of Programme: Prof. A. S. Tumane

Summary report: There are total 4 elective subjects in the final year Bachelor of Engineering program of university of Pune. Two elective subjects are in Term I and two subjects are in Term II. Every year mechanical engineering department organizes elective orientation program through which students understand the importance of elective subject. This year due to covid pandemic condition orientation program conducted through online google meet. There were 100 students participated in elective orientation program.

There are total 3 subjects in elective I and 3 subjects are in elective II as follows-

Elective I	Elective II
Finite Element Analysis	Automobile Engineering
Computational Fluid Dynamics	Operation Research
Heating Ventilation and Air Conditioning	Energy Audit and Management

Introduction of Elective subject was given by respective subject teacher. In which they explained regarding the importance of subject and university syllabus scheme.

Finite Element Method – Prof. Gaurav Mahajan  
Computational Fluid Dynamic- Prof. Atul S. Tumane





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Automobile Engineering - Prof. K.R. Kapadni  
Operation Research - Prof. M.M. Kawade  
Energy Audit and Management - Prof. S. M. Ramnani

Programme Outcome:  
1) PO 1  
2) PO 6  
3) PO 7  
4) PO 12

Name of Staff coordinators:  
Prof. Atul S. Tumane

  
Activity Coordinator  
Name: Prof. Atul S. Tumane  
Signature:

  
HOD / Institutional Activity In charge  
Name: Prof. S. Y. Bhosale  
Signature:





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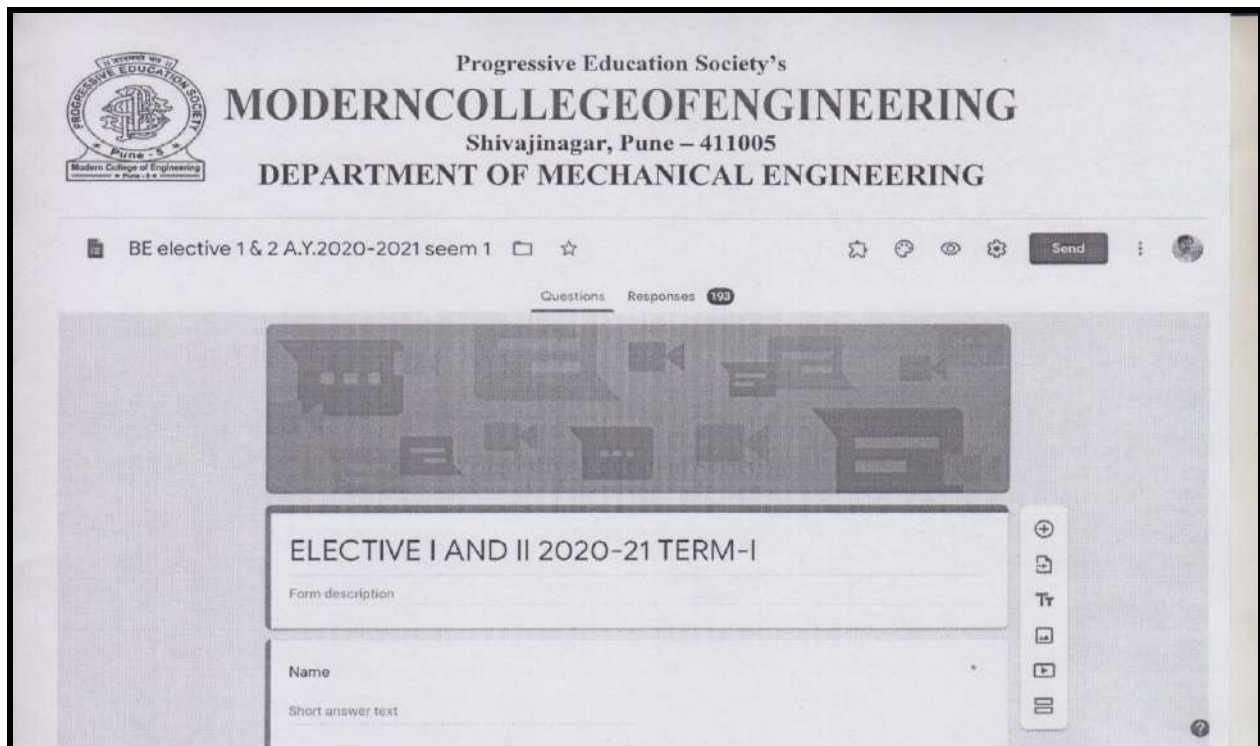


Fig.1 Option Google form for Elective I and II Term-I 2020-21



Fig.2 Screenshot of students participated in Be Elective I and II Orientation Program 2020-21



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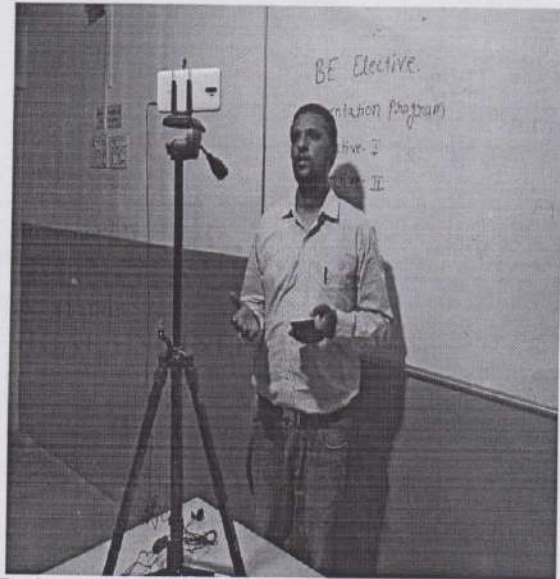
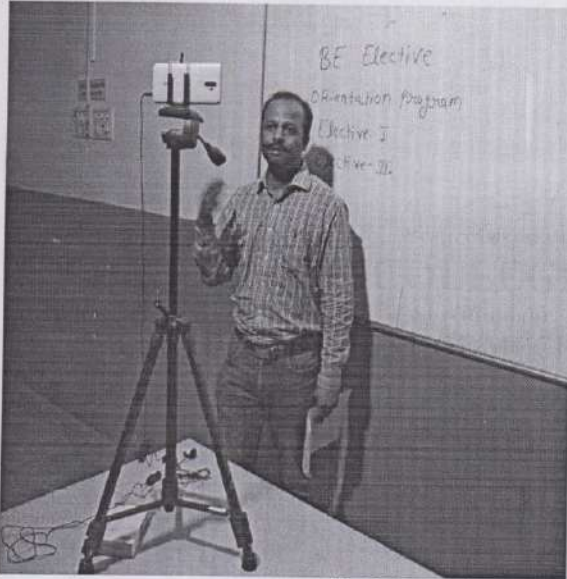


Fig.3 Concern Elective Subject Teacher online interacting with Students regarding elective subject through Google meet platform





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BE (2015 Pattern) Elective list 2020-21 Semester I

	Elective-III		Elective-IV
Code	Subject	Code	Subject
402044A	Finite Element Analysis	402045 A	Automobile Engineering
402044 B	Computational Fluid Dynamics	402045 B	Operation Research
402044 C	Heating Ventilation and Air Conditioning	402045 C	Energy Audit and Management





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Elective I (Finite Element Analysis)

1	43001	BHANGALE ROHIT YOGARAJ	33	43033	NANAWARE ROHIT BHARAT
2	43002	CHAUDHARI ANKUSH KIRAN	34	43034	PATIL ATHARVA SAMBHAJI
3	43003	CHAVAN PRITAM DIGAMBAR	35	43035	PATIL HARSHAL PRAVIN
4	43004	CHINCHOLKAR KSHITIJ ANIL	36	43036	PATIL JAYESH SHARAD
5	43005	DANI CHINMAY SHANTANU	37	43037	PAWAR ARJUN UDAY
6	43006	DASA PRATIKSHA SHIVAJI	38	43038	PAWAR SAYALI PRAMOD
7	43007	DAVARE SAMRAJEETA BHANUDAS	39	43039	PAWAR SHUBHAM RAVINDRA
8	43008	DIXIT TANAY PRAVIN	40	43040	PHADKE RAGHAV SAGAR
9	43009	DUMBRE ADWAIT JAYWANT	41	43041	RANJANE MAITREYA SANJAY
10	43010	FOTEDAR PRANAV	42	43042	RATHI HIMANSHU ATUL
11	43011	GAWALI ABHISHEK ATUL	43	43043	SAHANE SAURABH SURESH
12	43012	GHADGE SHUBHAM SANJAY	44	43044	SALE PRAMOD SAMBHAJI
13	43013	GOKHALE SHLOK MANOJ	45	43045	SAWANT SHUBHAM SUNIL
14	43014	GORHE KARTIK HEMANT	46	43047	SHAIKH AZEEM ABUTALEB
15	43015	IPPA UPENDRA SHRINIWAS	47	43048	SHARNAGAT NIKESH NILKANTH
16	43016	JAGTAP ANKIT DATTATRAY	48	43049	SHEIKH MOMIN RAFIK
17	43017	JAIN ABHISHEK PAWANKUMAR	49	43050	SHETE SHIVAM BASAWESHWAR
18	43018	JOSHI VIVEK YOGENDRA	50	43051	SHIROLE MALHAR VEERDHAVAL
19	43019	KADAM SHREYAS JYOTIKUMAR	51	43052	SHIRSATH ADITYA LAXMAN
20	43020	KADAM SHREYAS SUDHAKAR	52	43053	SURSE ATHARVA BHARAT
21	43021	KALBANDE ANJALI RAMPRASAD	53	43054	SUTAR OMKAR PRATAP
22	43022	KALE SHRINIVAS BALASAHEB	54	43055	TAGADE OMKAR RAJENDRA
23	43023	KSHIRSAGAR HRITIK VIKAS	55	43056	THANGAN PRADYUMNA GOVIND
24	43024	KULKARNI CHINMAY RAVINDRA	56	43057	TILEKAR SIDDHANT ANIL
25	43025	KULKARNI HRUSHIKESH JAGDISH	57	43058	TULJAPURKAR HRISHIKESH R
26	43026	KULKARNI SAYALI KRISHNAKANT	58	43059	UJADE NAGARJUN YASHWANTRAO
27	43027	KULKARNI VAIDEHI VAIJANATH	59	43060	WAGH AMOL POPAT
28	43028	KUMBHARE MAHESHWARI RAJESH	60	43061	WAGH HIMANSHU ISHWAR
29	43029	KUSHIRE PIYUSH BHARAT	61	43062	WAVARE SNEHA MANGESH
30	43030	MANE ASHUTOSH ARUN	62	43063	YEWALE SANKET SURESH
31	43031	MORE OMKAR LAXMAN	63	43064	AHLAWAT SAARANSH KULBIR
32	43032	NAGRALE SNEHAL PRASHANT	64	43065	CHAMNAR AKASH VASANTRAO





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65	43066	DEVKAR SUJEET SHIVRAM
66	43067	DEVKAR SUJEET SHIVRAM
67	43068	JAMADAR CHANDRASHEKHAR SHIVPUTRA
68	43069	MUKE SHIVAJI MACHHINDRA
69	43070	SAWANT ANKITA PANDURANG
70	43071	SHINGADE AKSHAY VITTHAL
71	43072	SHIRAPURI NIKHIL KAILAS
72	43073	LOKHANDE ASHWINI
73	43074	SUSHIL PATHADE
74	43075	DATE ASHUTOSH





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75	43201	ANPAT SHANTANU SUNIL	119	43248	POHEKAR KAUSHAL PRASHANT
76	43202	BANE SANDESH SANTOSH	120	43249	RAMTEKE PRAJWAL PARASRAM
77	43203	BAPAT ANMOL AJIT	121	43250	SADHALE PRITISH PRASHANT
78	43204	BARIDE NANDINI BALKRISHNA	122	43251	SAKE GAURAV RATAN
79	43205	BHARUDE VIVEK RAJENDRA	123	43252	SALAKE PANKAJ SAMBHAJI
80	43206	CHANNE SUSHRUT SANTOSH	124	43253	SALI SARTHAK SANJAY
81	43207	CHOUHARI ANIKET SUNIL	125	43254	SALUJA CHETANDEEP SINGH
82	43208	DAHLE RIYA VIJAY	126	43255	SANKPAL JEEVAK SURESH
83	43209	DESHPANDE SARIKA DHANANJAY	127	43256	SAPKAL NIKHIL RAMCHANDRA
84	43210	DHAMALE ANIKET RAMESH	128	43257	SARAF SAMIHAN PRASHANT
85	43211	DIXIT OMKAR VITTHAL	129	43258	SATHE ATHARVA ANANT
86	43212	GAIKWAD KUNAL GAUTAM	130	43259	SHAIKH TAHAREEM SHAUKAT
87	43213	GAIKWAD MALHAR SANJAY	131	43260	SHILWANT KARTIK GOPALRAO
88	43214	GAVIT JAYMALA RAMESH	132	43261	WADKAR SHUBHAM KIRAN
89	43215	GHODKE TUSHAR SAHBRAO	133	43262	WAGHMARE AKASH OMPRAKASH
90	43216	GUNJAL JYOTI KANTILAL	134	43263	WATVE RUSHIKESH PURUSHOTTAM
91	43217	GURPREM SINGH AJIT SINGH R	135	43264	YADAV MAYURI DNYANDEO
92	43218	HANMANTE PRATHAMESH P	136	43265	GAIKWAD VIPUL RAVINDRA
93	43219	HOLKAR DEEPAK VYANKAT	137	43266	JAMADAR KIRAN MOHAN
94	43220	JADHAV SOHIL NANDKUMAR	138	43267	KATE OMKAR NAMDEV
95	43221	JAISWAL JITESH SANJAY	139	43268	LONDHE PRANJALI BHARAT
96	43222	JALGAONKAR MAITHILI P	140	43269	MAINKAR MANDAR GAJANAN
97	43223	JOSHI MUKUND ANANTRAO	141	43270	PANDITA KARAN VIRJI
98	43224	KADAM PRATHMESH TUKARAM	142	43271	PAULKAR SUPRIYA SUBHASH
99	43225	KAKADE SADHANA SURESH			
100	43227	KANDHARE LOKESH MUKUND			
101	43229	KHANDAGALE VIVEK MAHADEV			
102	43230	KURLAPKAR SHRAVANI N			
103	43231	LOKHANDE SAHIL DATTATRAY			
104	43232	MAHAJAN OMKAR SUHAS			
105	43233	MAHINDRAKAR VIKAS P			
106	43234	MANE JIDNYASA PARASHRAM			
107	43235	MATHAPATI MANISHA V			
108	43236	MORASKAR VIRAJ VIJAY			
109	43237	MOTE SHARAD VIJAYKUMAR			
110	43238	MULAY CHAITANYA VILAS			
111	43239	NEVASE BHAGYASHREE ANIL			
112	43240	PATIL REVATI JAYANT			
113	43241	PATIL VIRAJ SURESH			
114	43242	PAWAR DNYANESHWAR K			
115	43243	PAWAR NIKETAN DEVRAO			
116	43244	PAWAR PARTH SUDHIR			
117	43245	PAWAR SIDDHI SURESH			
118	43247	PISE TEJAS VIJAYRAJ			







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143	48001	AGARWAL SAFAL DEEPAK	186	48048	SHEVALE SHUBHAM GANAPATI
144	48003	ANANDKAR AKSHAY BHIMRAO	187	48049	SHINDE VAISHNAVI SUNIL
145	48004	AVHAD ROHIT RAMESH	188	48050	SINGH ARUSHI PRAMOD
146	48005	BARATHE SWAPNIL SUNIL	189	48051	SONAWANE JAYDEEP DILIP
147	48006	BARKEDE ARSHJEET ANKUSH	190	48054	TANDALE SNEHA SANTOSH
148	48007	BARVE SWAPNIL UPENDRA	191	48055	TIPLI SUMEDH MAHENDRA
149	48008	BHAPKAR ASHWINI RAMDAS	192	48057	VEER RAHUL GANPAT
150	48009	BONDE MANDAR ARVIND	193	48058	YADAV MANDAR SANJAY
151	48010	CHAVAN MAYURI ANIL	194	48059	DAGALE KISHOR DNYANDEV
152	48011	DAVALBHAKTA ROHAN RAHUL	195	48060	KALE SAMEER ANIL
153	48012	DHAVARE SAGAR G	196	48061	LOKHANDE ADESH DADARAO
154	48013	EKHANDE ASHUTOSH SANJAY	197	48062	PUROHIT MANJIRI SHRIDHAR
155	48014	ERANDE PRATIKSHA SURESH	198	48063	RANDIVE RUTUJA RAJENDRA
156	48015	GHADAGE RUSHIKESH R	199	48064	SHINDE SUMIT KANIFNATH
157	48016	INGLE PRASHANT C	200	48065	SUDIPTA GHOSH
158	48017	JADHAV SIDDHESH NITIN	201	48066	VASAVE ANAND BHANGA
159	48018	JADHAV SOMESH NITIN			
160	48019	JADHAV VAISHNAV VIJAY			
161	48020	JANWE KUNAL VILAS			
162	48021	JOGALPURE MAYUR SANJAY			
163	48023	KALE LAXMIKANT JAGANNATH			
164	48024	KALE PRATHAMESH GANESH			
165	48025	KALVE ADVAIT DHANANJAY			
166	48026	KAMATH MANISH S			
167	48027	KATE ATHARVA SUHAS			
168	48028	KHUTE SHRAVASTI SANJEEV			
169	48029	KOLHATKAR KANISHKA S			
170	48030	KOTHAVADE ABHAY YOGESH			
171	48031	KUMBHAR SOURABH ANIL			
172	48032	LOHKARE KIRAN SANDIP			
173	48033	LUGADE POOJA NAGANATH			
174	48034	MAHAMUMNI JAYESH JAGDISH			
175	48035	OVHAL SUSHANT RANBA			
176	48036	PATIL KUNAL KIRAN			
177	48037	PATIL NAIPUNYA MANOJ			
178	48038	PATIL PANKAJ PRATAP			
179	48039	PATTHE VAIBHAV TULSHIRAM			
180	48040	PAWAR NIKHIL RAJENDRA			
181	48041	PAWAR PANKAJ BHAUSAHEB			
182	48042	PAWAR PAYAL ANANDA			
183	48043	PHATAK SHRIRANG GIRISH			
184	48046	SANOJI RAJAS JITENDRA			
185	48047	SHENOLIKAR SOUMITRA S			





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Subject Name- Computational Fluid Dynamics

Sr. No.	Roll No.	Name of Student	
1	38050	MayureshPremendra Pore	C
2	38002	KabirAkware	C
3	33254	SwapnilAvinashPhatak	B
4	48051	AbhishekRajuPund	C
5	38061	SwarajSonawane	C
6	33230	Shreya Dinesh Kale	B
7	38060	PRATHAMESH RAJESH SONAWANE	C
8	38064	Karan Varma	C
9	38026	AshutoshNitin Kale	C

Subject Name- Heating Ventilation and Air Conditioning

Sr. No.	Roll No.	Name of Student	
1	43046	SAYYAD SAYRA SHABBIR	A





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Elective II (Automobile Engineering)

Sr. No.	Roll No.	Name of Student	Sr. No.	Roll No.	Name of Student
1	43003	CHAVAN PRITAM DIGAMBAR	38	43075	DATE ASHUTOSH
2	43007	DAVARE SAMRAJEETA	39	43204	BARIDE NANDINI BALKRISHNA
3	43009	DUMBRE ADWAIT JAYWANT	40	43209	DESHPANDE SARIKA
4	43010	FOTEDAR PRANAV	41	43214	GAVIT JAYMALA RAMESH
5	43014	GORHE KARTIK HEMANT	42	43215	GHODKE TUSHAR SAHBRAO
6	43015	IPPA UPENDRA SHRINIWAS	43	43216	GUNJAL JYOTI KANTILAL
7	43016	JAGTAP ANKIT DATTATRAY	44	43217	GURPREM SINGH AJIT SINGH
8	43021	KALBANDE ANJALI	45	43225	KAKADE SADHANA SURESH
9	43022	KALE SHRINIVAS	46	43227	KANDHARE LOKESH MUKUND
10	43027	KULKARNI VAIDEHI	47	43232	MAHAJAN OMKAR SUHAS
11	43028	KUMBHARE MAHESHWARI	48	43233	MAHINDRAKAR VIKAS
12	43033	NANAWARE ROHIT BHARAT	49	43235	MATHAPATI MANISHA
13	43036	PATIL JAYESH SHARAD	50	43237	MOTE SHARAD VIJAYKUMAR
14	43046	SAYYAD SAYRA SHABBIR	51	43239	NEVASE BHAGYASHREE ANIL
15	43048	SHARNAGAT NIKESH	52	43241	PATIL VIRAJ SURESH
16	43056	THANGAN PRADYUMNA	53	43243	PAWAR NIKETAN DEVRAO
17	43057	TILEKAR SIDDHANT ANIL	54	43244	PAWAR PARTH SUDHIR
18	43062	WAVARE SNEHA MANGESH	55	43247	PISE TEJAS VIJAYRAJ
19	43020	KADAM SHREYAS	56	43250	SADHALE PRITISH PRASHANT
20	43031	MORE OMKAR LAXMAN	57	43251	SAKE GAURAV RATAN
21	43034	PATIL ATHARVA SAMBHAJI	58	43252	SALAKE PANKAJ SAMBHAJI
22	43038	PAWAR SAYALI PRAMOD	59	43254	SALUJA CHETANDEEP SINGH
23	43041	RANJANE MAITREYA	60	43255	SANKPAL JEEVAK SURESH
24	43044	SALE PRAMOD SAMBHAJI	61	43256	SAPKAL NIKHIL RAMCHANDRA
25	43047	SHAIKH AZEEM ABUTALEB	62	43258	SATHE ATHARVA ANANT
26	43052	SHIRSATH ADITYA LAXMAN	63	43262	WAGHMARE AKASH
27	43059	UJADE NAGARJUN	64	43263	WATVE RUSHIKESH
28	43064	AHLAWAT SAARANSH	65	43264	YADAV MAYURI DNYANDEO
29	43065	CHAMNAR AKASH	66	43246	PHATAK SWARNIL AVINASH
30	43066	DEVKAR SUJEET SHIVRAM	67	43210	DHAMALE ANIKET RAMESH
31	43067	DEVKAR SUJEET SHIVRAM	68	43221	JAISWAL JITESH SANJAY
32	43068	JAMADAR	69	43229	KHANDAGALE VIVEK
33	43069	MUKE SHIVAJI	70	43238	MULAY CHAITANYA VILAS
34	43070	SAWANT ANKITA	71	43242	PAWAR DNYANESHWAR
35	43071	SHINGADE AKSHAY	72	43260	SHILWANT KARTIK GOPALRAO
36	43072	SHIRAPURI NIKHIL KAILAS	73	43266	JAMADAR KIRAN MOHAN
37	43074	SUSHIL PATHADE	74	43267	KATE OMKAR NAMDEV





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75	43268	LONDHE PRANJALI BHARAT	111	48043	PHATAK SHRIRANG GIRISH
76	43269	MAINKAR MANDAR	112	48047	SHENOLIKAR SOUMITRA
77	43270	PANDITA KARAN VIRJI	113	48057	VEER RAHUL GANPAT
78	43271	PAULKAR SUPRIYA	114	48059	DAGALE KISHOR DNYANDEV
79	48003	ANANDKAR AKSHAY	115	48060	KALE SAMEER ANIL
80	48004	AVHAD ROHIT RAMESH	116	48061	LOKHANDE ADESH DADARAO
81	48005	BARATHE SWAPNIL SUNIL	117	48064	SHINDE SUMIT KANIFNATH
82	48008	BHAPKAR ASHWINI RAMDAS	118	48065	SUDIPTA GHOSH
83	48010	CHAVAN MAYURI ANIL	119	48066	VASAVE ANAND BHANGA
84	48014	ERANDE PRATIKSHA			
85	48019	JADHAV VAISHNAV VIJAY			
86	48022	KALE ASHUTOSH NITIN			
87	48023	KALE LAXMIKANT			
88	48028	KHUTE SHRAVASTI			
89	48030	KOTHAVADE ABHAY			
90	48032	LOHKARE KIRAN SANDIP			
91	48034	MAHAMUMNI JAYESH			
92	48035	OVHAL SUSHANT RANBA			
93	48039	PATTHE VAIBHAV			
94	48044	PORE MAYURESH			
95	48045	PUND ABHISHEK RAJU			
96	48049	SHINDE VAISHNAVI SUNIL			
97	48052	SONAWANE PRATAHMESH			
98	48053	SONAWANE SWARAJ			
99	48054	TANDALE SNEHA SANTOSH			
100	48055	TIPLE SUMEDH MAHENDRA			
101	48056	VARMA KARAN			
102	48058	YADAV MANDAR SANJAY			
103	48062	PUROHIT MANJIRI			
104	48020	JANWE KUNAL VILAS			
105	48024	KALE PRATHAMESH			
106	48025	KALVE ADVAIT DHANANJAY			
107	48033	LUGADE POOJA NAGANATH			
108	48038	PATIL PANKAJ PRATAP			
109	48041	PAWAR PANKAJ			
110	48042	PAWAR PAYAL ANANDA			





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**Elective II (Energy Audit and Management)**

Sr. No.	Roll No.	Name of Student	Sr. No.	Roll No.	Name of Student
1	43001	BHANGALE ROHIT YOGARAJ	33	43201	ANPAT SHANTANU SUNIL
2	43002	CHAUDHARI ANKUSH KIRAN	34	43202	BANE SANDESH SANTOSH
3	43004	CHINCHOLKAR KSHITIJ ANIL	35	43205	BHARUDE VIVEK RAJENDRA
4	43005	DANI CHINMAY SHANTANU	36	43206	CHANNE SUSHRUT SANTOSH
5	43006	DASA PRATIKSHA SHIVAJI	37	43208	DAHLE RIYA VIJAY
6	43008	DIXIT TANAY PRAVIN	38	43212	GAIKWAD KUNAL GAUTAM
7	43011	GAWALI ABHISHEK ATUL	39	43213	GAIKWAD MALHAR SANJAY
8	43012	GHADGE SHUBHAM SANJAY	40	43219	HOLKAR DEEPAK VYANKAT
9	43013	GOKHALE SHLOK MANOJ	41	43220	JADHAV SOHIL NANDKUMAR
10	43018	JOSHI VIVEK YOGENDRA	42	43222	JALGAONKAR MAITHILI
11	43019	KADAM SHREYAS	43	43224	KADAM PRATHMESH
12	43023	KSHIRSAGAR HRITIK VIKAS	44	43231	LOKHANDE SAHIL DATTATRAY
13	43024	KULKARNI CHINMAY	45	43234	MANE JIDNYASA PARASHRAM
14	43025	KULKARNI HRUSHIKESH	46	43236	MORASKAR VIRAJ VIJAY
15	43026	KULKARNI SAYALI	47	43245	PAWAR SIDDHI SURESH
16	43029	KUSHIRE PIYUSH BHARAT	48	43249	RAMTEKE PRAJWAL
17	43030	MANE ASHUTOSH ARUN	49	43259	SHAIKH TAHEREEM SHAUKAT
18	43037	PAWAR ARJUN UDAY	50	43261	WADKAR SHUBHAM KIRAN
19	43039	PAWAR SHUBHAM	51	43265	GAIKWAD VIPUL RAVINDRA
20	43040	PHADKE RAGHAV SAGAR			
21	43042	RATHI HIMANSHU ATUL			
22	43043	SAHANE SAURABH SURESH			
23	43045	SAWANT SHUBHAM SUNIL			
24	43049	SHEIKH MOMIN RAFIK			
25	43050	SHETE SHIVAM			
26	43051	SHIROLE MALHAR			
27	43053	SURSE ATHARVA BHARAT			
28	43054	SUTAR OMKAR PRATAP			
29	43058	TULJAPURKAR HRISHIKESH			
30	43060	WAGH AMOL POPAT			
31	43061	WAGH HIMANSHU ISHWAR			
32	43063	YEWALE SANKET SURESH			





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Sr. No.	Roll No.	Name of Student	Sr. No.	Roll No.	Name of Student
52	48001	AGARWAL SAFAL DEEPAK			
53	48006	BARKADE ARSHJEET ANKUSH			
54	48007	BARVE SWAPNIL UPENDRA			
55	48009	BONDE MANDAR ARVIND			
56	48011	DAVALBHAKTA ROHAN RAHUL			
57	48012	DHAVARE SAGAR GANGADHAR			
58	48013	EKHANDE ASHUTOSH SANJAY			
59	48016	INGLE PRASHANT CHANDRAKANT			
60	48017	JADHAV SIDDHESH NITIN			
61	48018	JADHAV SOMESH NITIN			
62	48026	KAMATH MANISH SHYAMKUMAR			
63	48027	KATE ATHARVA SUHAS			
64	48029	KOLHATKAR KANISHKA SANGRAM			
65	48040	PAWAR NIKHIL RAJENDRA			
66	48046	SAOJI RAJAS JITENDRA			
67	48050	SINGH ARUSHI PRAMOD			
68	48051	SONAWANE JAYDEEP DILIP			
69	48063	RANDIVE RUTUJA RAJENDRA			





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Elective II (Operation Research)

Sr. No.	Roll No.	Name of Student	Sr. No.	Roll No.	Name of Student
1	43017	JAIN ABHISHEK			
2	43032	NAGRALE SNEHAL			
3	43035	PATIL HARSHAL PRAVIN			
4	43055	TAGADE OMKAR RAJENDRA			
5	43073	LOKHANDE ASHWINI			
6	43203	BAPAT ANMOL AJIT			
7	43207	CHOUDHARI ANIKET SUNIL			
8	43211	DIXIT OMKAR VITTHAL			
9	43218	HANMANTE PRATHAMESH			
10	43223	JOSHI MUKUND ANANTRAO			
11	43230	KURLAPKAR SHRAVANI			
12	43240	PATIL REVATI JAYANT			
13	43248	POHEKAR KAUSHAL			
14	43253	SALI SARTHAK SANJAY			
15	43257	SARAF SAMIHAN PRASHANT			
16	43226	Shreya Dinesh Kale			
17	48002	AKWARE KABIR RAJESH			
18	48015	GHADAGE RUSHIKESH			
19	48021	JOGALPURE MAYUR			
20	48031	KUMBHAR SOURABH ANIL			
21	48036	PATIL KUNAL KIRAN			
22	48037	PATIL NAIPUNYA MANOJ			
23	48048	SHEVALE SHUBHAM			





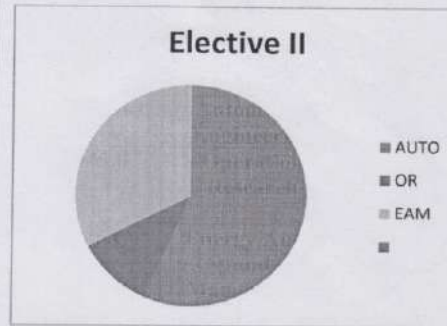
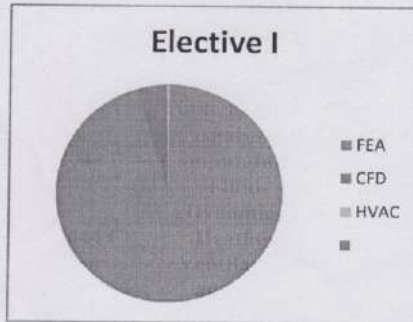
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**DEPARTMENT OF MECHANICAL ENGINEERING**

Summary Report

Code	Elective-III Subject	Total No. of student Enroll for Subject	Code	Elective-IV Subject	Total No. of student Enroll for Subject
402044A	Finite Element Analysis	201	402045 A	Automobile Engineering	119
402044 B	Computational Fluid Dynamics	9	402045 B	Operation Research	23
402044 C	Heating Ventilation and Air Conditioning	1	402045 C	Energy Audit and Management	69



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