

Savitribai Phule Pune University
S.E. (Civil Engineering) 2015 Course

| Semester I | | | | | | | | | | | | |
|-------------------|--|---------------------------------|--------------------|-------------------|---|------------|------------|-----------|------------|------------|-------------|--------------|
| Course Code | Course | Teaching Scheme Hours / Week | | | Semester Examination Scheme of Marks | | | | | | Credit | |
| | | Theory (TH) | Tutorials (TUT) | Practical (PR) | In-Sem | End-Sem | TW | PR | OR | Total | TH / TUT | PR/OR/ TW |
| 201001 | Building Technology and Materials | 04 | -- | 02 | 50 | 50 | 50 | -- | -- | 150 | 04 | 01 |
| 207001 | Engineering Mathematics III | 04 | 01 | -- | 50 | 50 | 50 | -- | -- | 150 | 05 | |
| 201006 | Surveying | 04 | -- | 02 | 50 | 50 | -- | 50 | -- | 150 | 04 | 01 |
| 201002 | Strength of Materials | 04 | -- | 02 | 50 | 50 | -- | -- | 50 | 150 | 04 | 01 |
| 201003 | Geotechnical Engineering | 04 | -- | 02 | 50 | 50 | -- | -- | 50 | 150 | 04 | 01 |
| | Audit Course 1 Awareness to Civil Engineering Practices | -- | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| Total | | 20 | 01 | 08 | 250 | 250 | 100 | 50 | 100 | 750 | 25 | |

Note: For audit courses students are given certificate by the institutes based on the assignment submitted by them.

Abbreviations: **TW:** Term Work, **OR:** Oral, **PP:** Passed (Only for non credit courses), **NP:** Not Passed (Only for non credit courses).

ATTESTED



PRINCIPAL
Matoshri College of Engineering
& Research Centre, Eklahare,
Nashik - 422 105

Savitribai Phule Pune University
S.E. (Civil Engineering) 2015 Course

| Semester II | | | | | | | | | | | | |
|-------------|--|---------------------------------|--------------------|-------------------|---|------------|------------|-----------|------------|------------|-------------|--------------|
| Course Code | Course | Teaching Scheme Hours / Week | | | Semester Examination Scheme of Marks | | | | | | Credit | |
| | | Theory (TH) | Tutorials (TUT) | Practical (PR) | In-Sem | End-Sem | TW | PR | OR | Total | TH / TUT | PR/OR/ TW |
| 201004 | Fluid Mechanics I | 04 | -- | 02 | 50 | 50 | -- | -- | 50 | 150 | 04 | 01 |
| 201005 | Architectural Planning and Design of Buildings | 04 | -- | 02 | 50 | 50 | -- | 50 | -- | 150 | 04 | 01 |
| 201008 | Structural Analysis I. | 03 | 01 | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 207009 | Engineering Geology | 04 | -- | 02 | 50 | 50 | 50 | -- | -- | 150 | 04 | 01 |
| 201007 | Concrete Technology | 04 | -- | 02 | 50 | 50 | -- | -- | 50 | 150 | 04 | 01 |
| 201010 | Soft Skill | -- | -- | 02 | -- | -- | 50 | -- | -- | 50 | -- | 01 |
| | Audit Course 2 Road Safety Management | -- | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| | | 19 | 01 | 10 | 250 | 250 | 100 | 50 | 100 | 750 | 25 | |

Note: For audit courses students are given certificate by the institutes based on the assignment submitted by them.

Abbreviations: **TW:** Term Work, **OR:** Oral, **PP:** Passed (Only for non credit courses), **NP:** Not Passed (Only for non credit courses).

ATTESTED

PRINCIPAL
Matoshri College of Engineering
& Research Centre, Eklanara,
Nashik - 422 105

Savitribai Phule University of Pune
Third Year Civil Engineering
(2015 Course)

Semester I

| Course Code | Course | Teaching Scheme hour/week | | | Semester Examination Scheme of marks | | | | | | Credit | |
|-------------|--|---------------------------|----------|-----------|--------------------------------------|---------|-----|-----|----|-------|--------|----------|
| | | Theory | Tutorial | Practical | In-Sem | End-Sem | T W | OR | PR | Total | TH/TUT | PR/OR/TW |
| 301001 | Hydrology and water resource engineering. | 03 | -- | 02 | 30 | 70 | -- | 50 | -- | 150 | 04 | 01 |
| 301002 | Infrastructure Engineering and Construction Techniques | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- |
| 301003 | Structural Design-I | 04 | -- | 04 | 30 | 70 | 50 | 50 | -- | 200 | 04 | 02 |
| 301004 | Structural Analysis-II | 04 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- |
| 301005 | Fluid Mechanics-II | 04 | -- | 02 | 30 | 70 | -- | 50 | -- | 150 | 04 | 01 |
| 301006 | Employability Skills development | -- | -- | 02 | -- | -- | 50 | -- | -- | 50 | -- | 01 |
| Total | | 18 | -- | 10 | 150 | 350 | 100 | 150 | | 750 | 20 | 05 |

ATTESTED


PRINCIPAL

Matoshri College of Engineering
 & Research Centre, Eklhane,
 Nashik - 422 105

Semester II

| Course Code | Course | Teaching Scheme hour/week | | | Semester Examination Scheme of marks | | | | | | Credit | |
|-------------|--|------------------------------|----------|-----------|---|---------|-----|-----|----|-------|--------|----------|
| | | Theory | Tutorial | Practical | In-Sem | End-Sem | T W | OR | PR | Total | TH/TUT | PR/OR/TW |
| 301007 | Advanced Surveying | 03 | -- | 02 | 30 | 70 | 50 | -- | -- | 150 | 04 | 01 |
| 301008 | Project Management and Engineering Economics | 04 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- |
| 301009 | Foundation Engineering | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- |
| 301010 | Structural Design-II | 04 | -- | 04 | 30 | 70 | 50 | 50 | -- | 200 | 04 | 02 |
| 301011 | Environmental Engineering-I | 04 | -- | 02 | 30 | 70 | -- | -- | 50 | 150 | 04 | 01 |
| 301012 | Seminar | -- | -- | 01 | -- | -- | -- | 50 | -- | 50 | -- | 01 |
| | Total | 18 | -- | 09 | 150 | 350 | 100 | 100 | 50 | 750 | 20 | 05 |

ATTESTED


PRINCIPAL

Matoshri College of Engineering
& Research Centre, Eklhane,
Nashik - 422 105

SAVITRIBAI PHULE PUNE UNIVERSITY
Board of Studies in Civil Engineering
Structure for B.E. Civil 2015 Course (w. e. f. June 2018)

| Semester-I | | | | | | | | | | | |
|----------------|-----------------------------------|-----------------|----|----|------------------------|-----|-----------|-------------------|-------|-------------------|-----|
| Subject code | Subject | Teaching Scheme | | | In-Semester Assessment | TW | Pract /Or | End-Semester Exam | Total | Credit | |
| | | Hrs/Week | | | | | | | | Th | Lab |
| | | Lect | Tu | Pr | | | | | | | |
| 401 001 | Environmental Engineering II | 3 | -- | 2 | 30 | -- | 50 | 70 | 150 | 3 | 1 |
| 401002 | Transportation Engineering | 3 | -- | 2 | 30 | 50 | -- | 70 | 150 | 3 | 1 |
| 401 003 | Structural Design and Drawing III | 4 | -- | 2 | 30 | -- | 50 | 70 | 150 | 4 | 1 |
| 401 004 | Elective I | 3 | -- | 2 | 30 | 50 | -- | 70 | 150 | 3 | 1 |
| 401 005 | Elective II | 3 | -- | -- | 30 | -- | -- | 70 | 100 | 3 | -- |
| 401 006 | Project (Phase-I) | -- | 2 | -- | -- | -- | 50 | -- | 50 | -- | 2 |
| Total : | | 16 | 2 | 8 | 150 | 100 | 150 | 350 | 750 | 16 | 6 |
| | | | | | | | | | | 22 Credits | |

| Semester-II | | | | | | | | | | | |
|----------------|---|-----------------|----|----|------------------------|-----|-----|-------------------|-------|-------------------|----|
| Subject code | Subject | Teaching Scheme | | | In-Semester Assessment | TW | Or | End-Semester Exam | Total | Credit | |
| | | Hrs/Week | | | | | | | | Th | Pr |
| | | Lect | Tu | Pr | | | | | | | |
| 401 007 | Dams and Hydraulic Structures | 3 | -- | 2 | 30 | -- | 50 | 70 | 150 | 3 | 1 |
| 401008 | Quantity Surveying, Contracts and tenders | 3 | -- | 2 | 30 | -- | 50 | 70 | 150 | 3 | 1 |
| 401 009 | Elective III | 3 | -- | 2 | 30 | 50 | -- | 70 | 150 | 3 | 1 |
| 401 010 | Elective IV | 3 | -- | 2 | 30 | 50 | -- | 70 | 150 | 3 | 1 |
| 401 006 | Project | -- | 6 | -- | -- | 50 | 100 | -- | 150 | -- | 6 |
| Total : | | 12 | 6 | 8 | 120 | 150 | 200 | 280 | 750 | 12 | 10 |
| | | | | | | | | | | 22 Credits | |

PRINCIPAL
Matoshri College of Engineering
& Research Centre, Eklhane,
Nashik - 422 105

UNIVERSITY OF PUNE
COURSE STRUCTURE FOR M.E. (For 2008 Course) (w.e.f. June – 2008)
SEMESTER I

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|---------------------|---|-----------------|----|--------------------|-----|------|----|-------|---------|
| | | Lect. | Pr | Paper | TW | Oral | Pr | Total | |
| 8101 | Mathematics | 3 | - | 100 | - | - | - | 100 | 3 |
| 8102 | Systems Approach to management and Development of Human Resources | 3 | - | 100 | - | - | - | 100 | 3 |
| 8103 | Engineering behaviour of Soils | 3 | - | 100 | - | - | - | 100 | 3 |
| 8104 | Elective I | 3 | - | 100 | - | - | - | 100 | 3 |
| 8105 | Elective II | 3 | - | 100 | - | - | - | 100 | 3 |
| 8106 | Lab Practice I | - | 6 | - | 50 | - | - | 50 | 3 |
| 8107 | Seminar I | - | 4 | - | 50 | - | - | 50 | 2 |
| Total of First Term | | 15 | 10 | 500 | 100 | - | - | 600 | 20 |

SEMESTER II

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|----------------------|--|-----------------|----|--------------------|-----|------|----|-------|---------|
| | | Lect. | Pr | Paper | TW | Oral | Pr | Total | |
| 8208 | Finite Element Methods in Geotechnical Engineering | 3 | - | 100 | - | - | - | 100 | 3 |
| 8209 | Reinforce Earth and Geosynthetics | 3 | - | 100 | - | - | - | 100 | 3 |
| 8210 | Foundation Design and detailing. | 3 | - | 100 | - | - | - | 100 | 3 |
| 8211 | Elective III | 3 | - | 100 | - | - | - | 100 | 3 |
| 8212 | Elective IV (Open) | 3 | - | 100 | - | - | - | 100 | 3 |
| 8213 | Lab Practice II | - | 6 | - | 50 | - | - | 50 | 3 |
| 8214 | Seminar II | - | 4 | - | 50 | - | - | 50 | 2 |
| Total of Second Term | | 15 | 10 | 500 | 100 | - | - | 600 | 20 |

SEMESTER III

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|---------------------|-----------------|-----------------|----|--------------------|----|------|----|-------|---------|
| | | Lect. | Pr | Paper | TW | Oral | Pr | Total | |
| 8315 | Seminar III | - | 4 | - | 50 | - | - | 50 | 2 |
| 8316 | Project Stage I | - | 18 | - | - | - | - | - | - |
| Total of Third Term | | - | 22 | - | 50 | - | - | 50 | 02 |

SEMESTER IV

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|----------------------|------------------|-----------------|----|--------------------|----|------|----|-------|---------|
| | | Lect. | Pr | Project | TW | Oral | Pr | Total | |
| 8316 | Project Stage II | - | 18 | 200 | - | 50 | - | 250 | 18 |
| Total of Fourth Term | | - | 18 | 200 | - | 50 | - | 250 | 18 |



PRINCIPAL
 Matoshri College of Engineering &
 Research Centre, Eklahare, Nashik

UNIVERSITY OF PUNE
SYLLABUS FOR
M.E.CIVIL (2008 course)

LIST OF ELECTIVES (SEMISTER-I)

8104-- **Elective I**

1. Applied Soil Mechanics
2. Rock Mechanics and Tunnelling
3. Site Investigations and Ground Improvement
4. Shallow and Deep Foundations

8105-- **Elective II**

1. Soil Stabilization
2. Soil Structure Interaction
3. Geoenvironmental Engineering
4. Earth Pressure and Retaining Structures




PRINCIPAL
Matoshri College of Engineering &
Research Centre, Eklahare, Nashik

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
 (With effect from Academic Year 2016-17)

Semester I

| Course Code | Course Name | Teaching Scheme Hours / Week | | | Examination Scheme & Marks | | | | | | Credit | |
|--------------|---|---------------------------------|----------|-----------|-------------------------------|---------|-----|-----|----|-------|------------|----|
| | | Theory | Tutorial | Practical | In-Sem | End-Sem | TW | PR | OR | Total | TH + TUTOR | PR |
| 210241 | <u>Discrete Mathematics</u> | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210242 | <u>Digital Electronics and Logic Design</u> | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210243 | <u>Data Structures and Algorithms</u> | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210244 | <u>Computer Organization and Architecture</u> | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210245 | <u>Object Oriented Programming</u> | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210246 | <u>Digital Electronics Lab</u> | -- | -- | 02 | -- | -- | 25 | 50 | -- | 75 | -- | 01 |
| 210247 | <u>Data Structures Lab</u> | -- | -- | 04 | -- | -- | 25 | 50 | -- | 75 | -- | 02 |
| 210248 | <u>Object Oriented Programming Lab</u> | -- | -- | 02 | -- | -- | 25 | 50 | -- | 75 | -- | 01 |
| 210249 | <u>Soft Skills</u> | -- | -- | 02 | -- | -- | 25 | -- | -- | 25 | -- | 01 |
| Total | | | | | | | | | | | 20 | 05 |
| 210250 | <u>Audit Course 1</u> | -- | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| Total | | 20 | -- | 10 | 250 | 250 | 100 | 150 | -- | 750 | 25 | |

Abbreviations:

TW: Term Work
 OR: Oral
 PR: Practical

TH: Theory
 TUT: Tutorial
 Sem: Semester

ATTESTED


PRINCIPAL

**Matoshri College of Engineering
 & Research Centre, Eklhane,
 Nashik - 422 105**

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
 (With effect from Academic Year 2016-17)
Semester II

| Course Code | Course Name | Teaching Scheme Hours / Week | | | Examination Scheme & Marks | | | | | | Credits | |
|--------------|-------------------------------------|---------------------------------|----------|-----------|-------------------------------|---------|-----|-----|----|-------|---------|----|
| | | Theory | Tutorial | Practical | In-Sem | End-Sem | TW | PR | OR | Total | TH+TUT | PR |
| 207003 | Engineering Mathematics III | 04 | 01 | -- | 50 | 50 | 25 | -- | -- | 125 | 05 | -- |
| 210251 | Computer Graphics | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210252 | Advanced Data Structures | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210253 | Microprocessor | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 210254 | Principles of Programming Languages | 03 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 03 | -- |
| 210255 | Computer Graphics Lab | -- | -- | 02 | -- | -- | 25 | 50 | -- | 75 | -- | 01 |
| 210256 | Advanced Data Structures Lab | -- | -- | 04 | -- | -- | 25 | 50 | -- | 75 | -- | 02 |
| 210257 | Microprocessor Lab | -- | -- | 04 | -- | -- | 25 | 50 | -- | 75 | -- | 02 |
| Total | | | | | | | | | | | 20 | 05 |
| 210258 | Audit Course 2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| Total | | 19 | 01 | 10 | 250 | 250 | 100 | 150 | -- | 750 | 25 | |

Abbreviations:

TW: Term Work
 OR: Oral
 PR: Practical

TH: Theory
 TUT: Tutorial
 Sem: Semester

ATTESTED


PRINCIPAL
 Matoshri College of Engineering
 & Research Centre, Eklhane,
 Nashik - 422 105

Savitribai Phule University of Pune
Third Year Computer Engineering (2015 Course)
(with effect from 2017-18)

Semester I

| Course Code | Course | Teaching Scheme Hours / Week | | | Examination Scheme and Marks | | | | | | Credit | | |
|---------------------|--|---------------------------------|-----------|-----------|------------------------------|------------|------------|------------|-----------|------------|------------|--------------|--|
| | | Theory | Tutorial | Practical | In-Sem | End-Sem | TW | PR | OR | Total | TH/ TUT | PR | |
| 310241 | Theory of Computation | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 310242 | Database Management Systems (DBMS) | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 310243 | Software Engineering & Project Management | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 310244 | Information Systems & Engineering Economics | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 310245 | Computer Networks (CN) | 04 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- | |
| 310246 | Skills Development Lab | -- | 02 | 04 | -- | -- | 50 | -- | 50 | 100 | 02 | 02 | |
| 310247 | DBMS Lab | -- | -- | 04 | -- | -- | 25 | 50 | -- | 75 | -- | 02 | |
| 310248 | CN Lab | -- | -- | 02 | -- | -- | 25 | 50 | -- | 75 | -- | 01 | |
| Total Credit | | | | | | | | | | | 18 | 05 | |
| Total | | 16 | 02 | 10 | 150 | 350 | 100 | 100 | 50 | 750 | 23 | | |
| 310249 | Audit Course 3 | | | | | | | | | | | Grade | |

310249-Audit Course 3 (AC3) Options:

AC3-I: Cyber Security

AC3-II: Professional Ethics and Etiquettes

AC3-III: Emotional Intelligence

AC3-IV: MOOC- Learn New Skills

AC3-V: Foreign Language (Japanese- Module 3)

Abbreviations:

TW: Term Work **TH:** Theory **OR:** Oral **TUT:** Tutorial **PR:** Practical **Sem:** Semester

ATTESTED


PRINCIPAL

Matoshri College of Engineering
 & Research Centre, Eklshare,
 Nashik - 422 105

Savitribai Phule University of Pune
Third Year Computer Engineering (2015 Course)
 (with effect from 2017-18)

Semester II

| Course Code | Course | Teaching Scheme Hours / Week | | | Examination Scheme and Marks | | | | | | Credit | |
|---------------------|---|------------------------------|----------|-----------|------------------------------|---------|-----|-----|----|-------|--------------|----|
| | | Theory | Tutorial | Practical | In-Sem | End-Sem | TW | PR | OR | Total | TH/ TUT | PR |
| 310250 | Design & Analysis of Algorithms | 04 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | |
| 310251 | Systems Programming & Operating System (SP & OS) | 04 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- |
| 310252 | Embedded Systems & Internet of Things (ES & IoT) | 04 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- |
| 310253 | Software Modeling and Design | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- |
| 310254 | Web Technology | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- |
| 310255 | Seminar & Technical Communication | -- | 01 | -- | -- | -- | 50 | -- | -- | 50 | 01 | -- |
| 310256 | Web Technology Lab | -- | -- | 02 | -- | -- | 25 | 50 | -- | 75 | -- | 01 |
| 310257 | SP & OS Lab | -- | -- | 04 | -- | -- | 25 | 50 | -- | 75 | -- | 02 |
| 310258 | ES & IoT Lab | -- | -- | 02 | -- | -- | 50 | -- | -- | 50 | -- | 01 |
| Total Credit | | | | | | | | | | 19 | 04 | |
| Total | | 18 | 01 | 08 | 150 | 350 | 150 | 100 | -- | 750 | 23 | |
| 310259 | Audit Course 4 | | | | | | | | | | Grade | |

310259-Audit Course 4(AC4) Options:

- AC4-I: Digital and Social Media Marketing AC4-II: Green Computing
 AC4-III: Sustainable Energy Systems AC4-IV: Leadership and Personality Development
 AC4-V: Foreign Language (Japanese- Module 4)

Abbreviations:

TW: Term Work TH: Theory OR: Oral TUT: Tutorial PR: Practical Sem: Semester

ATTESTED


& PRINCIPAL

Savitribai Phule Pune University
Fourth Year of Computer Engineering (2015 Course)
(with effect from 2018-19)

Semester I

| Course Code | Course | Teaching Scheme Hours / Week | | Examination Scheme and Marks | | | | | | Credit | | |
|---|--------------------------------------|------------------------------|-----------|------------------------------|---|------------|-----------|-------------|------------|------------|--------------|--|
| | | Theory | Practical | In-Sem | End-Sem | TW | PR | OR/ *PRE | Total | TH/ TUT | PR | |
| 410241 | High Performance Computing | 04 | -- | 30 | 70 | -- | -- | -- | 100 | 04 | -- | |
| 410242 | Artificial Intelligence and Robotics | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410243 | Data Analytics | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410244 | Elective I | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410245 | Elective II | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410246 | Laboratory Practice I | -- | 04 | -- | -- | 50 | 50 | -- | 100 | -- | 02 | |
| 410247 | Laboratory Practice II | -- | 04 | -- | -- | 50 | -- | *50 | 100 | -- | 02 | |
| 410248 | Project Work Stage I | -- | 02 | -- | -- | -- | -- | *50 | 50 | -- | 02 | |
| Total Credit | | | | | | | | | | 16 | 06 | |
| Total | | 16 | 10 | 150 | 350 | 100 | 50 | 100 | 750 | 22 | | |
| 410249 | Audit Course 5 | | | | | | | | | | Grade | |
| Elective I | | | | | Elective II | | | | | | | |
| 410244 (A) Digital Signal Processing | | | | | 410245 (A) Distributed Systems | | | | | | | |
| 410244 (B) Software Architecture and Design | | | | | 410245 (B) Software Testing and Quality Assurance | | | | | | | |
| 410244 (C) Pervasive and Ubiquitous Computing | | | | | 410245 (C) Operations Research | | | | | | | |
| 410244 (D) Data Mining and Warehousing | | | | | 410245 (D) Mobile Communication | | | | | | | |

410249-Audit Course 5 (AC5) Options:

AC5-I Entrepreneurship DevelopmentAC5-IV: Industrial Safety and Environment ConsciousnessAC5-II: Botnet of ThingsAC5-V: Emotional IntelligenceAC5-III: 3D PrintingAC5-VI: MOOC- Learn New Skills

Abbreviations:

TW: Term Work

TH: Theory

OR: Oral

PR: Practical

Sem: Semester

*PRE: Project/ Mini-Project Presentation

ATTESTED


PRINCIPAL

Savitribai Phule Pune University
Fourth Year of Computer Engineering (2015 Course)
(with effect from 2018-19)

Semester II

| Course Code | Course | Teaching Scheme Hours / Week | | Examination Scheme and Marks | | | | | | Credit | | |
|--|--------------------------------|---------------------------------|-----------|------------------------------|------------|---|-----------|-------------|------------|------------|--------------|--|
| | | Theory | Practical | In-Sem | End-Sem | TW | PR | OR/ *PRE | Total | TH/ TUT | PR | |
| 410250 | Machine Learning | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410251 | Information and Cyber Security | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410252 | Elective III | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410253 | Elective IV | 03 | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- | |
| 410254 | Laboratory Practice III | -- | 04 | -- | -- | 50 | 50 | -- | 100 | -- | 02 | |
| 410255 | Laboratory Practice IV | -- | 04 | -- | -- | 50 | -- | *50 | 100 | -- | 02 | |
| 410256 | Project Work Stage II | -- | 06 | -- | -- | 100 | -- | *50 | 150 | -- | 06 | |
| Total Credit | | | | | | | | | | 12 | 10 | |
| Total | | 12 | 14 | 120 | 280 | 200 | 50 | 100 | 750 | 22 | | |
| 410257 | Audit Course 6 | | | | | | | | | | Grade | |
| Elective III | | | | | | Elective IV | | | | | | |
| 410252 (A) <u>Advanced Digital Signal Processing</u> | | | | | | 410253 (A) <u>Software Defined Networks</u> | | | | | | |
| 410252 (B) <u>Compilers</u> | | | | | | 410253 (B) <u>Human Computer Interface</u> | | | | | | |
| 410252 (C) <u>Embedded and Real Time Operating Systems</u> | | | | | | 410253 (C) <u>Cloud Computing</u> | | | | | | |
| 410252 (D) <u>Soft Computing and Optimization Algorithms</u> | | | | | | 410253 (D) <u>Open Elective</u> | | | | | | |

410259-Audit Course 6 (AC6) Options:

AC6-I: Business IntelligenceAC6-IV: Usability EngineeringAC6-II: GamificationAC6-V: Conversational InterfacesAC6-III: Quantum ComputingAC6-VI: MOOC- Learn New Skills

Abbreviations:

TW: Term Work

TH: Theory

OR: Oral

PR: Practical

Sem: Semester

*PRE: Project/ Mini-Project Presentation

ATTESTED


PRINCIPAL

**Matoshri College of Engineering
 & Research Centre, Eklhara,
 Nashik - 422 105**

**Proposed structure M.E. Computer Engineering to be implemented
from July-2008**

Term-I

| Subject Code | Subject Title | Teaching Scheme | | Examination Scheme | | | | |
|--------------|--|-----------------|-----------|--------------------|------------|------|------------|-----------|
| | | Lect. | Pract. | Paper | TW | Oral | Total | Credits |
| 510101 | Applied Algorithms | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510102 | Emerging trends in Computer Architecture | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510103 | Principles and Practices for IT Management | 03 | | 100 | | | 100 | 3 |
| 510104 | Elective-I | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510105 | Elective-II | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510106 | Laboratory Practice-I | -- | 06 | | 50 | | 50 | 3 |
| 510107 | Seminar-I | | 04 | | 50 | | 50 | 2 |
| | Total | 15 | 10 | 500 | 100 | | 600 | 20 |

Term-II

| Subject Code | Subject Title | Teaching Scheme | | Examination Scheme | | | | |
|--------------|---------------------------------------|-----------------|-----------|--------------------|------------|------|------------|-----------|
| | | Lect. | Pract. | Paper | TW | Oral | Marks | Credits |
| 510108 | Distributed System | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510109 | High Performance Database Systems | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510110 | Network Design, Modeling and Analysis | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510111 | Elective-III | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510112 | Elective-IV | 03 | -- | 100 | -- | -- | 100 | 3 |
| 510113 | Laboratory Practice-II | -- | 06 | | 50 | | 50 | 3 |
| 510114 | Seminar-II | -- | 04 | -- | 50 | -- | 50 | 2 |
| | Total | 15 | 10 | 500 | 100 | | 600 | 20 |

ATTESTED

 X PRINCIPAL
 Matoshri Education Society
 Matoshri Institute of Engineering & Technology
 Research Centre, Eklahare, Nashik

1
 Matoshri
 Research Centre, Eklahare, Nashik

Term-III

| Subject Code | Subject Title | Teaching Scheme | | Examination Scheme | | | | |
|--------------|-----------------|-----------------|-----------|--------------------|------------|------|------------|----------|
| | | Lect. | Pract. | Paper | TW | Oral | Total | Credits |
| 510115 | Seminar-III | -- | 04 | -- | 50 | -- | 50 | 2 |
| 510116 | Project stage-I | -- | 18 | -- | 50 | -- | 50 | 6 |
| | Total | -- | 22 | -- | 100 | | 100 | 8 |

Term-IV

| Subject Code | Subject Title | Teaching Scheme | | Examination Scheme | | | | |
|--------------|-------------------|-----------------|-----------|--------------------|------------|------|------------|-----------|
| | | Lect. | Pract. | Paper | TW | Oral | Marks | Credits |
| 510116 | Project stage-II* | -- | 18 | -- | 150 | 50 | 200 | 12 |
| | Total | -- | 18 | -- | 150 | | 200 | 12 |

* : The term work of project stage II of semester IV should be assessed jointly by the pair of internal and external examiner along with the oral examination of the same

| Subject Code | Elective-I | Subject Code | Elective-II |
|--------------|------------------------------|--------------|----------------------------------|
| 510104 A | Advance Software Engineering | 510105 A | Information and Network Security |
| 510104 B | Intelligent Systems | 510105 B | Advanced Compilers |
| 510104 C | Internet Routing Design | 510105 C | Web Services and SOA |
| 510104 D | Mobile Computing | 510105 D | Embedded System Design |

| Subject Code | Elective-III | Subject Code | Elective-IV |
|--------------|--|--------------|----------------------------------|
| 510111 A | Software Design and Architecture | 510112 A | Software Project Management |
| 510111 B | Pattern Recognition and Machine Vision | 510112 B | Infrastructure Management |
| 510111 C | Network Programming | 510112 C | Data Warehousing and Data Mining |
| 510111 D | Advanced Internet Programming | 510112 D | Open Elective(Self Study)** |

**:- Open elective subject –BOS computer engineering will declare the list of subjects which can be taken under open elective.



Savitribai Phule Pune University
S.E. Electrical Engineering 2015 – Course
(w. e. f. 2016-2017)

| Semester I | | | | | | | | | | | | | |
|----------------|--------------|---|-----------------|-----------|-----------|--------------------------------------|------------|------------|------------|-----------|------------|--------------|-------|
| Sr. No. | Subject Code | Subject Title | Teaching Scheme | | | Semester Examination Scheme of Marks | | | | | | Credit | |
| | | | Th. | Tut. | Pr. | Paper | | TW | PR | OR | Total | TH/TUT | PR+OR |
| | | | | | | In Sem (Online) | End Sem | | | | | | |
| 1. | 203141 | Power Generation Technologies | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 2. | 207006 | Engineering Mathematics-III | 04 | 01 | -- | 50 | 50 | 25 | -- | -- | 125 | 05 | -- |
| 3. | 203142 | Material Science | 04 | -- | 02 | 50 | 50 | -- | -- | 50 | 150 | 04 | 01 |
| 4. | 203143 | Analog and Digital Electronics | 04 | -- | 02 | 50 | 50 | 25 | 50 | -- | 175 | 04 | 01 |
| 5. | 203144 | Electrical Measurements and Instrumentation | 04 | -- | 02 | 50 | 50 | 25 | 50 | -- | 175 | 04 | 01 |
| 6. | 203151 | Soft Skills | -- | -- | 02 | -- | -- | 25 | -- | -- | 25 | -- | 01 |
| Total | | | | | | | | | | | 21 | 04 | |
| Audit Course I | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | Grade: PP/NP | |
| Total | | | 20 | 01 | 08 | 250 | 250 | 100 | 100 | 50 | 750 | 25 | |

| Semester II | | | | | | | | | | | | | |
|-----------------|--------------|--|-----------------|-----------|-----------|--------------------------------------|------------|------------|------------|-----------|------------|--------------|-------|
| Sr. No. | Subject Code | Subject Title | Teaching Scheme | | | Semester Examination Scheme of Marks | | | | | | Credit | |
| | | | Th. | Tut. | Pr. | Paper | | TW | PR | OR | Total | TH/TUT | PR+OR |
| | | | | | | In Sem (Online) | End Sem | | | | | | |
| 1. | 203145 | Power System I | 04 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 04 | -- |
| 2. | 203146 | Electrical Machines I | 04 | -- | 02 | 50 | 50 | 25 | 50 | -- | 175 | 04 | 01 |
| 3. | 203147 | Network Analysis | 04 | -- | 02 | 50 | 50 | 50 | -- | -- | 150 | 04 | 01 |
| 4. | 203148 | Numerical Methods and Computer Programming | 04 | 01 | 02 | 50 | 50 | 25 | 50 | -- | 175 | 05 | 01 |
| 5. | 203149 | Fundamentals of Microcontroller and Applications | 04 | -- | 02 | 50 | 50 | -- | -- | 50 | 150 | 04 | 01 |
| Total | | | | | | | | | | | 21 | 04 | |
| Audit Course II | | | | | | | | | | | | Grade: PP/NP | |
| Total | | | 20 | 01 | 08 | 250 | 250 | 100 | 100 | 50 | 750 | 25 | |

TW: Term Work OR: Oral PR: Practical

PP: Passed (Only for non-credit courses) NP: Not Passed (Only for non-credit courses)

ATTESTED

PRINCIPAL

Savitribai Phule Pune University
FACULTY OF ENGINEERING
T.E. Electrical Engineering (2015 Course)
(w.e.f. 2017-2018)

| SEMESTER-I | | | | | | | | | | | | | |
|--------------|--------------|--|-----------------|-----------|-----------|--------------------|------------|------------|------------|-----------|-------------|-----------|-----------|
| Sr. No | Subject Code | Subject Title | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credit | |
| | | | Th | Pr. | Tu. | PP | | TW | PR | OR | | TH/TU | PR+OR |
| | | | | | | In Sem | End Sem | | | | | | |
| 1 | 311121 | Industrial and Technology Management | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- |
| 2 | 303141 | Advance Microcontroller and its Applications | 04 | 02 | -- | 30 | 70 | -- | -- | 50 | 150 | 04 | 01 |
| 3 | 303142 | Electrical Machines II | 04 | 02 | -- | 30 | 70 | -- | 50 | -- | 150 | 04 | 01 |
| 4 | 303143 | Power Electronics | 04 | 02 | -- | 30 | 70 | -- | 50 | -- | 150 | 04 | 01 |
| 5 | 303144 | Electrical Installation, Maintenance and Testing | 03 | 02 | -- | 30 | 70 | 50 | -- | -- | 150 | 03 | 01 |
| 6 | 303145 | Seminar and Technical Communication | -- | 02 | -- | -- | -- | 50 | -- | -- | 50 | -- | 01 |
| | 303152 | Audit Course III | | | | | | | | | | | |
| TOTAL | | | 18 | 10 | -- | 150 | 350 | 100 | 100 | 50 | 750 | 18 | 05 |

| SEMESTER-II | | | | | | | | | | | | | |
|--------------|--------------|----------------------------------|-----------------|-----------|-----------|--------------------|------------|------------|-----------|------------|-------------|-----------|-----------|
| Sr. No. | Subject Code | Subject Title | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credit | |
| | | | Th. | Pr. | Tu. | PP | | TW | PR | OR | | TH/TU | PR+OR |
| | | | | | | In Sem | End Sem | | | | | | |
| 1. | 303146 | Power System II | 04 | 02 | -- | 30 | 70 | -- | 50 | -- | 150 | 04 | 01 |
| 2. | 303147 | Control System I | 04 | 02 | -- | 30 | 70 | -- | -- | 50 | 150 | 04 | 01 |
| 3. | 303148 | Utilization of Electrical Energy | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- |
| 4. | 303149 | Design of Electrical Machines | 04 | 02 | -- | 30 | 70 | 25 | -- | 50 | 175 | 04 | 01 |
| 5. | 303150 | Energy Audit and Management | 03 | 02 | -- | 30 | 70 | 25 | -- | -- | 125 | 03 | 01 |
| 6. | 303151 | Electrical Workshop | -- | 02 | -- | -- | -- | 50 | -- | -- | 50 | -- | 01 |
| | 303153 | Audit Course IV | | | | | | | | | | | |
| Total | | | 18 | 10 | -- | 150 | 350 | 100 | 50 | 100 | 750 | 18 | 05 |

Th: Theory lectures hours/week
Pr: Practical hours/week
Tu: Tutorial hours/week

TW: Term work
PR: Theory
OR: Oral
PP: Paper- In semester and End Semester

ATTESTED


PRINCIPAL

**Matoshri College of Engineering
& Research Centre, Eklnhara,
Nashik - 422 105**

Savitribai Phule Pune University
FACULTY OF ENGINEERING

B.E. Electrical Engineering (2015 Course)
(w.e.f. 2018-2019)

| SEMESTER-I | | | | | | | | | | | | | |
|--------------|--------------|------------------------------------|----------------------------|----|----|----------------------------|---------|-----|----|-----|-------------|---------|---------|
| Sr No | Subject Code | Subject Title | Teaching Scheme (Hrs/Week) | | | Examination Scheme (Marks) | | | | | Total Marks | Credit | |
| | | | TH | PR | TU | PP | | TW | PR | OR | | TH / TU | PR + OR |
| | | | | | | In Sem | End Sem | | | | | | |
| 1 | 403141 | Power System Operation and Control | 03 | 02 | -- | 30 | 70 | 25 | -- | 25 | 150 | 03 | 01 |
| 2 | 403142 | PLC and SCADA Applications | 04 | 02 | -- | 30 | 70 | 25 | 50 | -- | 175 | 04 | 01 |
| 3 | 403143 | Elective I | 03 | 02 | -- | 30 | 70 | 25 | -- | -- | 125 | 03 | 01 |
| 4 | 403144 | Elective II | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- |
| 5 | 403145 | Control System II | 03 | 02 | -- | 30 | 70 | 25 | -- | 25 | 150 | 03 | 01 |
| 6 | 403146 | Project I | -- | -- | 02 | -- | -- | -- | -- | 50 | 50 | 02 | -- |
| | 403152 | Audit Course V | | | | | | | | | | | |
| TOTAL | | | 16 | 08 | 02 | 150 | 350 | 100 | 50 | 100 | 750 | 18 | 04 |
| SEMESTER-II | | | | | | | | | | | | | |
| Sr No | Subject Code | Subject Title | Teaching Scheme (Hrs/Week) | | | Examination Scheme (Marks) | | | | | Total Marks | Credit | |
| | | | TH | PR | TU | PP | | TW | PR | OR | | TH / TU | PR + OR |
| | | | | | | In Sem | End Sem | | | | | | |
| 1 | 403147 | Switchgear and Protection | 03 | 02 | -- | 30 | 70 | 50 | -- | 25 | 175 | 03 | 01 |
| 2 | 403148 | Power Electronic Controlled Drives | 04 | 02 | -- | 30 | 70 | 25 | 50 | -- | 175 | 04 | 01 |
| 3 | 403149 | Elective III | 03 | 02 | -- | 30 | 70 | 25 | -- | 25 | 150 | 03 | 01 |
| 4 | 403150 | Elective IV | 03 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 03 | -- |
| 5 | 403151 | Project II | -- | -- | 06 | -- | -- | 50 | -- | 100 | 150 | 06 | -- |
| | 403153 | Audit Course VI | | | | | | | | | | | |
| TOTAL | | | 13 | 06 | 06 | 120 | 280 | 150 | 50 | 150 | 750 | 19 | 03 |

ATTESTED



PRINCIPAL
Matoshri College of Engineering
& Research Centre, Hindole,
Nashik

Structure of M.E.(Electrical)- Power Systems (2008 Course)

ELECTRICAL ENGINEERING BOARD

University of Pune

| Subject Code no. | Subject | Teaching Scheme | | Examination Scheme | | | Total marks | Credits |
|------------------|---------|-----------------|-------|--------------------|----|----|-------------|---------|
| | | Lect | Pract | paper | Tw | Or | | |

Semester- I

| | | | | | | | | |
|--------|--|-----------|-----------|------------|------------|-------------|------------|-----------|
| 503201 | Computer Applications in Power Systems | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503202 | Power Sector Economics, Management and Restructuring | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503203 | Power System Modeling | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503204 | Elective - I | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503205 | Elective -II | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503206 | Lab-Practice - I | ---- | 6 | --- | 50 | --- | 50 | 3 |
| 503207 | Seminar-I | ---- | 4 | --- | 50 | --- | 50 | 2 |
| | Total | 15 | 10 | 500 | 100 | ---- | 600 | 20 |

Semester- II

| Subject Code no. | Subject | Teaching Scheme | | Examination Scheme | | | Total marks | Credits |
|------------------|-------------------------------------|-----------------|-----------|--------------------|------------|------------|-------------|-----------|
| | | Lect | Pract | paper | Tw | Or | | |
| 503208 | Power System Dynamics | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503209 | Power System Planning & Reliability | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503210 | High Voltage Power Transmission | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503211 | Elective - III | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503212 | Elective - IV | 3 | --- | 100 | --- | --- | 100 | 3 |
| 503213 | Lab-Practice - II | --- | 6 | --- | 50 | --- | 50 | 3 |
| 503214 | Seminar - II | --- | 4 | --- | 50 | --- | 50 | 2 |
| | Total | 15 | 10 | 500 | 100 | --- | 600 | 20 |

Semester- III

| Subject Code no. | Subject | Teaching Scheme | | Examination Scheme | | | Total marks | Credits |
|------------------|------------------|-----------------|-----------|--------------------|------------|-----|-------------|----------|
| | | Lect | Pract | paper | Tw | Or | | |
| 603201 | Seminar III | --- | 4 | --- | 50 | --- | 50 | 2 |
| 603202 | Project stage -I | --- | 18 | --- | 50 | --- | 50 | 6 |
| | Total | | 22 | | 100 | | 100 | 8 |

Semester- IV

| Subject Code no. | Subject | Teaching Scheme | | Examination Scheme | | | Total marks | Credits |
|------------------|------------------|-----------------|-----------|--------------------|------------|-----------|-------------|-----------|
| | | Lect | Pract | paper | Tw | Or | | |
| 603202 | Project stage-II | -- | 18 | --- | 150 | 50 | 200 | 12 |
| | Total | | 18 | ---- | 150 | 50 | 200 | 12 |

Note: The contact hours for the calculation of load of teacher

Seminar - 01 Hr/Week/student

Project - 02 Hrs/Week/Student



PRINCIPAL
 Matoshri College of Engineering &
 Research Centre, Eklahare, Nashik

Contd...2

Continue, Structure of M.E. (Electrical) - Power System (2008 Course)

- **Lab- Practice- I & Lab. Practice - II** will have minimum 10 experiments each.
- **Seminar III** will be based on the Project Work.
- The Term Work of Project stage II of semester IV should be assessed jointly by the pair of internal and external examiners, along with the oral examination of the same.

Elective - I

- i) Digital Signal Processing and its Applications
- ii) Advanced Power Electronics

Elective - II

- i) Artificial Intelligence and its Applications in Power Systems .
- ii) Renewable Energy Sources

Elective - III

- i) Digital Power System Protection
- ii) Power Electronics Applications in Power Systems

Elective - IV

- i) Power Quality Assessment and Mitigation
- ii) Partial Discharges in Electrical Power Apparatus
- iii) Open *

* Candidate will have option for any one of the elective subject from the existing Pune University PG programmes, either from the same Board or from any other Board, with the consent of his guide.

PROF. M. G. UNDE

Date: 08-02-2008

**CHAIRMAN
B.O.S.
ELECTRICAL
ENGG.
UNIVERSITY OF
PUNE**




PRINCIPAL
Matoshri College of Engineering &
Research Centre, Eklahare, Nashik

Savitribai Phule Pune University, Pune
SE(E&TC/Electronics Engineering) 2015 Course

(With effect from Academic Year 2016-17)

Semester I

| Course Code | Course | Teaching Scheme Hours / Week | | | Semester Examination Scheme of Marks | | | | | | Credit | |
|----------------------|--|---------------------------------|-----------|------------|--------------------------------------|---------------------|-----|-----|----|-------|-----------|-------|
| | | Theory | Tutorials | Practicals | In-Sem (On line) | End-Sem (Theory) | TW | PR | OR | Total | TH/TUT | PR+OR |
| 204181 | Signals & Systems | 3 | 1 | - | 50 | 50 | 25 | - | - | 125 | 4 | - |
| 204182 | Electronic Devices & Circuits | 4 | - | 2 | 50 | 50 | - | 50 | - | 150 | 4 | 1 |
| 204183 | Electrical Circuits and Machines | 3 | - | 2 | 50 | 50 | 25 | - | - | 125 | 3 | 1 |
| 204184 | Data Structures and Algorithms | 4 | - | 2 | 50 | 50 | - | - | 50 | 150 | 4 | 1 |
| 204185 | Digital Electronics | 4 | - | 2 | 50 | 50 | - | 50 | - | 150 | 4 | 1 |
| 204186 | Electronic Measuring Instruments & Tools | 1 | - | 2 | - | - | 50 | - | - | 50 | 1 | 1 |
| 204192 | Audit Course 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| Total | | 19 | 1 | 10 | 250 | 250 | 100 | 100 | 50 | 750 | 20 | 05 |
| Total Credits | | | | | | | | | | | 25 | |

Abbreviations:

Th : Theory

TW: Term Work

OR: Oral

TUT : Tutorial

PR : Practical

ATTESTED


PRINCIPAL
 Matoshri College of Engineering
 & Research Centre, Eklnhane,
 Nashik - 422 105

Note: Interested students of S.E. (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

SE(E&TC/Electronics Engineering) 2015 Course**(With effect from Academic Year 2016-17)**

| Semester II | | | | | | | | | | | | |
|----------------------|---------------------------------|------------------------------|-----------|------------|--------------------------------------|------------------|-----|-----|----|-------|-----------|-------|
| Course Code | Course | Teaching Scheme Hours / Week | | | Semester Examination Scheme of Marks | | | | | | Credit | |
| | | Theory | Tutorials | Practicals | In-Sem (on line) | End-Sem (Theory) | TW | PR | OR | Total | TH/TUT | PR+OR |
| 207005 | Engineering Mathematics III | 4 | 1 | - | 50 | 50 | 25 | - | - | 125 | 5 | - |
| 204187 | Integrated Circuits | 4 | - | 2 | 50 | 50 | 25 | 50 | - | 175 | 4 | 1 |
| 204188 | Control Systems | 3 | - | - | 50 | 50 | - | - | - | 100 | 3 | - |
| 204189 | Analog Communication | 3 | - | 2 | 50 | 50 | - | 50 | - | 150 | 3 | 1 |
| 204190 | Object Oriented Programming | 3 | - | 4 | 50 | 50 | - | - | 50 | 150 | 3 | 2 |
| 204191 | Employability Skill Development | 2 | - | 2 | - | - | 50 | - | - | 50 | 2 | 1 |
| 204193 | Audit Course 2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| Total | | 19 | 1 | 10 | 250 | 250 | 100 | 100 | 50 | 750 | 20 | 05 |
| Total Credits | | | | | | | | | | | 25 | |

Abbreviations:

TH: Theory
 TW: Term Work
 OR: Oral

TUT: Tutorial
 PR: Practical

ATTESTED

*** PRINCIPAL**

**Matoshri College of Engineering
 & Research Centre, Eklundre,
 Nashik - 422 105**

Note: Interested students of S.E (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

Third Engineering-E&TC (2015 Course)

(With effect from Academic Year 2017-18)

| Semester I | | | | | | | | | | | | |
|----------------------|---|-----------------|-----------|------------|--------------------------------|---------|-----|-----|----|-------|-----------|-------|
| Course Code | Course | Teaching Scheme | | | Semester Examination Scheme of | | | | | | Credits | |
| | | Hours / Week | | | Marks | | | | | | | |
| | | Theory | Tutorials | Practicals | In-Sem | End-Sem | TW | PR | OR | Total | TH/TW | PR+OR |
| 304181 | Digital Communication | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 | -- |
| 304182 | Digital Signal Processing | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 | -- |
| 304183 | Electromagnetics | 3 | 1 | -- | 30 | 70 | -- | -- | -- | 100 | 4 | -- |
| 304184 | Microcontrollers | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | 1 |
| 304185 | Mechatronics | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | 1 |
| 304191 | Signal Processing and Communications Lab (DC/DSP) | -- | -- | 4 | -- | -- | 50 | 50 | | 100 | -- | 2 |
| 304192 | Microcontrollers and Mechatronics Lab | -- | -- | 4 | -- | -- | 50 | 50 | | 100 | | |
| 304193 | Electronics System Design | 2 | -- | 2 | -- | -- | - | -- | 50 | 50 | 2 | 1 |
| | Audit Course 3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | ---- | |
| | Total | 19 | 1 | 10 | 150 | 350 | 100 | 100 | 50 | 750 | | |
| Total Credits | | | | | | | | | | | 25 | |

Abbreviations:

TH: Theory

TW: Term Work

OR: Oral

PR: Practical

Note: Interested students of T.E (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

ATTESTED


PRINCIPAL

Matoshri College of Engineering
& Research Centre, Eklahare,
Nashik - 422 105

Third Engineering-E&TC (2015 Course)

(With effect from Academic Year 2017-18)

| Semester II | | | | | | | | | | | | |
|----------------------|---|-----------------|-----------|------------|-----------------------------|---------|-----|-----|----|-------|-----------|-----|
| Course Code | Course | Teaching Scheme | | | Semester Examination Scheme | | | | | | Credit | |
| | | Hours / Week | | | of Marks | | | | | | TH/T | PR |
| | | Theory | Tutorials | Practicals | In-Sem | End-Sem | TW | PR | OR | Total | W | +OR |
| 304186 | Power Electronics | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 | -- |
| 304187 | Information Theory, Coding and Communication Networks | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 | -- |
| 304188 | Business Management | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | -- |
| 306189 | Advanced Processors | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 | 1 |
| 304190 | System Programming and Operating Systems | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | 1 |
| 304194 | Power and ITCT Lab | -- | -- | 4 | -- | -- | 50 | 50 | -- | 100 | -- | 2 |
| 304195 | Advanced Processors and System Programming Lab | -- | -- | 4 | -- | -- | 50 | 50 | -- | 100 | | |
| 304196 | Employability Skills and Mini Project | 2 | -- | 2 | -- | -- | -- | -- | 50 | 50 | 2 | 1 |
| | Audit Course 4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| Total | | 20 | --- | 10 | 150 | 350 | 100 | 100 | 50 | 750 | | |
| Total Credits | | | | | | | | | | | 25 | |

Abbreviations:

TH: Theory
TW: Term Work

OR: Oral
PR: Practical

Note: Interested students of T.E (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

ATTESTED




PRINCIPAL
Matoshri College of Engineering
& Research Centre, Eklhara,
Nashik - 422 105

Savitribai Phule Pune University
Final Year E&TC Engineering (2015 Course)
 (With effect from Academic Year 2018-19)

| Semester I | | | | | | | | | | | | |
|--------------------------------------|--------------------------------------|------------------------------|-----|-------------------------------|--------------------------------------|---------|-----|----|-----------------------|-------|-----------|-------|
| Course Code | Course | Teaching Scheme Hours / Week | | | Semester Examination Scheme of Marks | | | | | | Credits | |
| | | Theor y | Tut | Pract | In-Sem | End-Sem | TW | PR | OR | Total | TH/TW | PR+OR |
| 404181 | VLSI Design & Technology | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | -- |
| 404182 | Computer Networks & Security | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 | -- |
| 404183 | Radiation & Microwave Techniques | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | -- |
| 404184 | Elective I | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | -- |
| 404185 | Elective II | 3 | | | 30 | 70 | -- | -- | -- | 100 | 3 | -- |
| 404186 | Lab Practice -I (CNS+ RMT) | -- | -- | 4 | -- | -- | 50 | -- | 50 | 100 | -- | 2 |
| 404187 | Lab Practice -II (VLSI + Elective I) | -- | -- | 4 | -- | -- | 50 | 50 | | 100 | -- | 2 |
| 404188 | Project Stage I | - | 2 | -- | -- | -- | - | -- | 50 | 50 | -- | 2 |
| | Audit Course 5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | ---- | |
| | Total | 16 | 2 | 8 | 150 | 350 | 100 | 50 | 100 | 750 | 16 | 6 |
| Total Credits | | | | | | | | | | | 22 | |
| Elective I | | | | Elective II | | | | | Audit Course 5 | | | |
| 1 Digital Image and Video Processing | | | | 1. Wavelets | | | | | 1. Green Energy | | | |
| 2. Industrial Drives and Control | | | | 2. Electronics Product Design | | | | | 2. Human Behaviour | | | |
| 3. Embedded Systems & RTOS | | | | 3. Optimization Techniques | | | | | | | | |
| 4. Internet of Things | | | | 4. Artificial Intelligence | | | | | | | | |
| | | | | 5. Electronics in agriculture | | | | | | | | |

ATTESTED


PRINCIPAL
 Matoshri College of Engineering
 & Research Centre, Eklhane,
 Nashik - 422 105

Final Year E&TC Engineering (2015 Course)

(With effect from Academic Year 2018-19)

Semester II

| Course Code | Course | Teaching Scheme | | | Semester Examination Scheme of | | | | | | Credit | | |
|---|----------------------------------|-----------------|-----|---|--------------------------------|---------|-----|---|-----|-------|-----------|-------|--|
| | | Hours / Week | | | Marks | | | | | | TH/TW | PR+OR | |
| | | Theory | Tut | Pract | In-Sem | End-Sem | TW | PR | OR | Total | | | |
| 404189 | Mobile Communication | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | -- | |
| 404190 | Broadband Communication Systems | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 | -- | |
| 404191 | Elective III | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | -- | |
| 404192 | Elective IV | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 | -- | |
| 404193 | Lab Practice -III (MC+BCS) | -- | -- | 4 | -- | -- | 50 | 50 | -- | 100 | -- | 2 | |
| 404194 | Lab Practice -IV (Elective III) | -- | -- | 2 | -- | -- | -- | -- | 50 | 50 | -- | 1 | |
| 404195 | Project Stage II | -- | 6 | - | -- | -- | 150 | -- | 50 | 200 | -- | 6 | |
| | Audit Course 6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| Total | | 13 | 6 | 6 | 120 | 280 | 200 | 50 | 100 | 750 | 13 | 9 | |
| Total Credits | | | | | | | | | | | 22 | | |
| Elective III | | | | Elective-IV | | | | Audit Course 6 | | | | | |
| 1. Machine Learning 2. PLC s and Automation 3. Audio and Speech Processing 4. Software Defined Radio 5. Audio Video Engineering | | | | 1. Robotics 2. Biomedical Electronics 3. Wireless Sensor Networks 4. Renewable Energy Systems 5. Open Elective* | | | | 1. Team Building, Leadership and Fitness 2. Environmental issues and Disaster Management | | | | | |

*Any one course from the list of Elective IV of computer/IT/Electrical/Instrumentation or Institute can offer elective IV based on any industry need with prior approval from BoS(Electronics & Telecommunication). Repetition of course or topics should be avoided.

ATTESTED



PRINCIPAL

Matoshri College of Engineering
& Research Centre, Ekshare,
Nashik - 422 105

COURSE STRUCTURE FOR M.E. (E & TC/ELECTRONICS)- (VLSI and Embedded Systems)

(For 2008 course) (w.e.f. June – 2008)

SEMESTER I

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|----------------------------|--|-----------------|-----|--------------------|-----|------|----|-------|---------|
| | | Lect. | Pr. | Paper | TW | Oral | Pr | Total | |
| 504181 | Analog and Digital CMOS IC Design | 3 | - | 100 | - | - | - | 100 | 3 |
| 504182 | Principles and Practices for IT Management | 3 | - | 100 | - | - | - | 100 | 3 |
| 504183 | Embedded System Design | 3 | - | 100 | - | - | - | 100 | 3 |
| 504184 | Elective I | 3 | - | 100 | - | - | - | 100 | 3 |
| 504185 | Elective II | 3 | - | 100 | - | - | - | 100 | 3 |
| 504186 | VLSI Embedded Practice I | - | 6 | - | 50 | - | - | 50 | 3 |
| 504187 | Seminar I | - | 4 | - | 50 | - | - | 50 | 2 |
| Total of First Term | | 15 | 10 | 500 | 100 | - | - | 600 | 20 |

SEMESTER II

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|-----------------------------|-----------------------------|-----------------|-----|--------------------|-----|------|----|-------|---------|
| | | Lect. | Pr. | Paper | TW | Oral | Pr | Total | |
| 504188 | Real Time Operating Systems | 3 | - | 100 | - | - | - | 100 | 3 |
| 504189 | Embedded Signal Processing | 3 | - | 100 | - | - | - | 100 | 3 |
| 504190 | RF IC Design | 3 | - | 100 | - | - | - | 100 | 3 |
| 504191 | Elective III | 3 | - | 100 | - | - | - | 100 | 3 |
| 504192 | Elective IV (Open) | 3 | - | 100 | - | - | - | 100 | 3 |
| 504193 | VLSI Embedded Practice II | - | 6 | - | 50 | - | - | 50 | 3 |
| 504194 | Seminar II | - | 4 | - | 50 | - | - | 50 | 2 |
| Total of Second Term | | 15 | 10 | 500 | 100 | - | - | 600 | 20 |

ME (E&TC) VLSI



SEMESTER III

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|----------------------------|-----------------|-----------------|-----|--------------------|-----|------|----|-------|---------|
| | | Lect. | Pr. | Paper | TW | Oral | Pr | Total | |
| 604181 | Seminar III | - | 4 | - | 50 | - | - | 50 | 2 |
| 604182 | Project Stage I | - | 18 | - | 50 | - | - | 50 | 6 |
| Total of Third Term | | - | 22 | - | 100 | - | - | 100 | 8 |

SEMESTER IV

| CODE | SUBJECT | TEACHING SCHEME | | EXAMINATION SCHEME | | | | | CREDITS |
|-----------------------------|------------------|-----------------|-----|--------------------|----|------|----|-------|---------|
| | | Lect. | Pr. | Project | TW | Oral | Pr | Total | |
| 604183 | Project Stage II | - | 18 | 150* | - | 50 | - | 200 | 12 |
| Total of Fourth Term | | - | 18 | 150 | - | 50 | - | 200 | 12 |

* The Term Work of Project stage II of semester IV should be assessed jointly by the pair of internal and external examiners. along with the oral examination of the same.

Note : The Contact Hours for the calculation of load of teacher Seminar – 1Hr / week / student & Project – 2Hr / week / student

Elective I:

1. ASIC Design and Modeling
2. Nanotechnology
3. Machine Intelligence

Elective II:

1. Reconfigurable Computing
2. Memory Technologies
3. VLSI EDA Tools

Elective III:

1. Fault Tolerant System Design
2. Biomedical Signals and Systems
3. Advanced Digital System Design

Elective IV (OPEN):

1. Embedded Automotive Systems
2. System-on-Chip (SoC)
3. Software Defined Radio

Or any one subject of Elective IV from the following branches

1. Computer Engineering
2. Information Technology



S.E. (Information Technology) 2015 Course to be implemented from June 2016

SEMESTER – I

| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits |
|--------------|---|-----------------|-----------|-----------|--------------------|---------------|------------|------------|-----------|-------------|-----------|
| | | Lecture | Tutorial | Practical | Theory Paper | Theory Online | TW | PR | OR | | |
| 214441 | Discrete Structures | 4 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 4 |
| 214442 | Computer Organization & Architecture | 4 | -- | -- | 50 | 50 | | | | 100 | 4 |
| 214443 | Digital Electronics and Logic Design | 4 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 4 |
| 214444 | Fundamentals of Data Structures | 4 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 4 |
| 214445 | Problem Solving and Object Oriented programming | 4 | -- | -- | 50 | 50 | -- | -- | -- | 100 | 4 |
| 214446 | Digital Laboratory | -- | -- | 2 | -- | -- | 25 | 50 | -- | 75 | 1 |
| 214447 | Programming Laboratory | -- | -- | 4 | -- | -- | 25 | 50 | -- | 75 | 2 |
| 214448 | Object Oriented programming Lab. | -- | -- | 2 | -- | -- | 25 | 50 | | 75 | 1 |
| 214449 | Communication Skills | -- | -- | 2 | -- | -- | 25 | -- | -- | 25 | 1 |
| | Audit Course | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| | Total | 20 | -- | 10 | 250 | 250 | 100 | 150 | -- | 750 | 25 |
| | Total of Part-I | 30 Hours | | | 750 | | | | | | |

SEMESTER – II


| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits |
|--------------|---|-----------------|-----------|-----------|--------------------|---------------|------------|------------|-----------|-------------|-----------|
| | | Lecture | Tutorial | Practical | Theory Paper | Theory Online | TW | PR | OR | | |
| 207003 | Engineering Mathematics -III | 4 | 1 | -- | 50 | 50 | 25 | -- | -- | 125 | 5 |
| 214450 | Computer Graphics | 3 | - | -- | 50 | 50 | -- | -- | -- | 100 | 3 |
| 214451 | Processor Architecture and Interfacing | 4 | - | - | 50 | 50 | -- | -- | -- | 100 | 4 |
| 214452 | Data Structures & Files | 4 | - | - | 50 | 50 | -- | -- | -- | 100 | 4 |
| 214453 | Foundations of Communication and Computer Network | 4 | - | - | 50 | 50 | -- | -- | -- | 100 | 4 |
| 214454 | Processor Interfacing Laboratory | -- | -- | 4 | -- | -- | 25 | 50 | -- | 75 | 2 |
| 214455 | Data Structure and Files Laboratory | -- | -- | 4 | -- | -- | 25 | 50 | -- | 75 | 2 |
| 214456 | Computer Graphics Laboratory | -- | -- | 2 | -- | -- | 25 | 50 | -- | 75 | 1 |
| | Audit Course | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| | Total | 19 | 01 | 10 | 250 | 250 | 100 | 150 | -- | 750 | 25 |
| | Total of Part-II | 30 Hours | | | 750 | | | | | | |

TW: Term Work

PR: Practical

OR: Oral

ATTESTED


PRINCIPAL
 Matoshri College of Engineering
 & Research Centre, Eklhara,
 Nashik - 422 105

T.E. (Information Technology) 2015 Course to be implemented from June 2017

SYLLABUS STRUCTURE

SEMESTER – I

| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits |
|-----------------|---|-----------------|----------|-----------|--------------------|----------------|-----|-----|----|-------------|---------|
| | | Lecture | Tutorial | Practical | In-Sem. Paper | End-Sem. Paper | TW | PR | OR | | |
| 314441 | Theory of Computation | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 |
| 314442 | Database Management Systems | 4 | -- | -- | 30 | 70 | | | | 100 | 4 |
| 314443 | Software Engineering & Project Management | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 |
| 314444 | Operating System | 4 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 4 |
| 314445 | Human-Computer Interaction | 3 | -- | -- | 30 | 70 | -- | -- | -- | 100 | 3 |
| 314446 | Software Laboratory-I | -- | -- | 4 | -- | -- | 25 | 50 | 50 | 125 | 2 |
| 314447 | Software Laboratory-II | -- | -- | 4 | -- | -- | 25 | 50 | -- | 75 | 2 |
| 314448 | Software Laboratory-III | -- | -- | 2 | -- | -- | 50 | -- | -- | 50 | 1 |
| 314449 | Audit Course 3 | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| Total | | 18 | -- | 10 | 150 | 350 | 100 | 100 | 50 | 750 | 23 |
| Total of Part-I | | 28 Hours | | | 750 | | | | | | |

SEMESTER – II

| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits |
|------------------|-----------------------------------|-----------------|----------|-----------|--------------------|----------------|-----|----|----|-------------|---------|
| | | Lecture | Tutorial | Practical | In-Sem. Paper | End-Sem. Paper | TW | PR | OR | | |
| 314450 | Computer Network Technology | 3 | - | -- | 30 | 70 | -- | -- | -- | 100 | 3 |
| 314451 | Systems Programming | 4 | - | -- | 30 | 70 | -- | -- | -- | 100 | 4 |
| 314452 | Design and Analysis of Algorithms | 4 | - | - | 30 | 70 | -- | -- | -- | 100 | 4 |
| 314453 | Cloud Computing | 3 | - | - | 30 | 70 | -- | -- | -- | 100 | 3 |
| 314454 | Data Science & Big Data Analytics | 4 | - | - | 30 | 70 | -- | -- | -- | 100 | 4 |
| 314455 | Software Laboratory-IV | -- | -- | 2 | -- | -- | 25 | -- | 25 | 50 | 1 |
| 314456 | Software Laboratory-V | -- | -- | 4 | -- | -- | 50 | 50 | -- | 100 | 2 |
| 314457 | Software Laboratory-VI | -- | -- | 2 | -- | -- | 25 | 25 | -- | 50 | 1 |
| 314458 | Project Based Seminar | -- | 01 | -- | -- | -- | -- | -- | 50 | 50 | 1 |
| 314459 | Audit Course 4 | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| Total | | 18 | 01 | 08 | 150 | 350 | 100 | 75 | 75 | 750 | 23 |
| Total of Part-II | | 27 Hours | | | 750 | | | | | | |

ATTESTED



PRINCIPAL

Matoshri College of Engineering
& Research Centre Ekinhare,
Nashik - 422 105

B.E. (Information Technology) 2015 Course to be implemented from Academic Year 2018-19

SEMESTER-I

| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits |
|-----------------|-----------------------------------|-----------------|-----------|----------|--------------------|-----|----|-----|---------|-------------|---------|
| | | Lecture | Practical | Tutorial | In-Sem | TW | PR | OR | End-Sem | | |
| 414453 | Information and Cyber Security | 3 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 3 |
| 414454 | Machine Learning and Applications | 4 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 4 |
| 414455 | Software Design and Modeling | 3 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 3 |
| 414456 | Elective-I | 3 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 3 |
| 414457 | Elective -II | 3 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 3 |
| 414458 | Computer Laboratory-VII | -- | 4 | -- | -- | 50 | 50 | -- | -- | 100 | 2 |
| 414459 | Computer Laboratory-VIII | -- | 4 | -- | -- | 50 | -- | 50 | -- | 100 | 2 |
| 414460 | Project Phase-I | -- | -- | 2 | -- | -- | -- | 50 | -- | 50 | 2 |
| 414461 | Audit Course-V | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| Total | | 16 | 8 | 2 | 150 | 100 | 50 | 100 | 350 | 750 | 22 |
| Total of Part-I | | 26 | | | 750 | | | | | | |

Abbreviations: TW: Term Work TH: Theory OR: Oral PR: Practical Sem: Semester

Computer Laboratory-VII (Information and Cyber Security+ Machine Learning and Application)

Computer Laboratory-VIII (Software Design and Modeling)

| Elective I | | Elective II | |
|------------|--|-------------|---|
| 414456 A | 1. Wireless Communications | 414457A | 1. Software Defined Networks |
| 414456B | 2. Natural Language Processing | 414457B | 2. Soft Computing |
| 414456C | 3. Usability Engineering | 414457C | 3. Software Testing and Quality Assurance |
| 414456D | 4. Multicore and Concurrent Systems | 414457D | 4. Compiler Construction |
| 414456E | 5. Business Analytics and Intelligence | 414457E | 5. Gamification |

| Audit Course-V | |
|----------------|--|
| 414461A | 1. Emotional Intelligence |
| 414461B | 2. Green Computing |
| 414461C | 3. Critical Thinking |
| 414461D | 4. Statistical Learning model using R. |

ATTESTED


PRINCIPAL

SEMESTER –II

| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits |
|------------------|------------------------------|-----------------|-----------|----------|--------------------|-----|----|-----|---------|-------------|---------|
| | | Lecture | Practical | Tutorial | In-Sem | TW | PR | OR | End-Sem | | |
| 414462 | Distributed Computing System | 3 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 3 |
| 414463 | Ubiquitous Computing | 3 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 3 |
| 414464 | Elective-III | 3 | 2 | -- | 30 | 25 | -- | 25 | 70 | 150 | 4 |
| 414465 | Elective-IV | 3 | -- | -- | 30 | -- | -- | -- | 70 | 100 | 3 |
| 414466 | Computer Laboratory-IX | -- | 4 | -- | -- | 50 | 50 | -- | -- | 100 | 2 |
| 414467 | Computer Laboratory-X | -- | 2 | -- | -- | 25 | -- | 25 | -- | 50 | 1 |
| 414468 | Project Work | -- | -- | 6 | -- | 50 | -- | 100 | -- | 150 | 6 |
| 414469 | Audit Course-VI | -- | -- | -- | -- | -- | -- | -- | -- | Grade | |
| Total | | 12 | 8 | 6 | 120 | 150 | 50 | 150 | 280 | 750 | 22 |
| Total of Part-II | | 26 | | | 750 | | | | | | |

Abbreviations: TW: Term Work TH: Theory OR: Oral PR: Practical Sem: Semester
 Computer Laboratory-IX (Distributed Computing System)
 Computer Laboratory-X (Ubiquitous Computing)

| Elective III | | Elective IV | |
|--------------|--------------------------------------|-------------|---|
| 414464A | 1. Internet of Things (IoT) | 414465A | 1. Rural Technologies and Community Development |
| 414464B | 2. Information storage and retrieval | 414465B | 2. Parallel Computing |
| 414464C | 3. Multimedia Techniques | 414465C | 3. Computer Vision |
| 414464D | 4. Internet and Web Programming | 414464D | 4. Social Media Analytics |
| 414464E | 5. Computational Optimization | 414465E | 5. Open Elective |

| Audit Course-VI | |
|-----------------|---|
| 414469A | 1. IoT – Application in Engineering field |
| 414469B | 2. Entrepreneurship |
| 414469C | 3. Cognitive Computing |
| 414469D | 4. AI and Robotics |

ATTESTED



**Structure of S.E. (Mechanical Engineering/ Automobile Engineering)
2015 Course**

Semester-I

| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits | |
|--------------|--------------------------------|-----------------|-----------|-----------|--------------------|------------|------------|-----------|------------|-------------|-----------|-----------|
| | | Hours/Week | | | In-Sem (online) | End-Sem | TW | PR. | Oral | | Lect/Tut | PR/OR |
| | | L | Tut. | PR | | | | | | | | |
| 207002 | Engineering Mathematics – III | 04 | 01 | - | 50 | 50 | 25 | - | - | 125 | 05 | - |
| 202041 | Manufacturing Process-I | 03 | - | 02 | 50 | 50 | 50 | - | - | 150 | 03 | 01 |
| 202042 | Computer Aided Machine Drawing | 01 | - | 02 | -- | -- | | | 50 | 50 | 01 | 01 |
| 202043 | Thermodynamics | 04 | - | 02 | 50 | 50 | - | - | 50 | 150 | 04 | 01 |
| 202044 | Material Science | 03 | 01 | - | 50 | 50 | 25 | - | - | 125 | 03 | 01 |
| 202051 | Strength of Materials | 04 | - | 02 | 50 | 50 | - | - | 50 | 150 | 04 | 01 |
| 202055 | Audit course | | | | | | | | | | | |
| | Total | 19 | 02 | 08 | 250 | 250 | 100 | 50 | 100 | 750 | 20 | 05 |
| | Total of Part-I | 29 Hrs | | | 750 | | | | | 25 | | |

Note: Material Science and Engineering Mathematics-III practical may be carried out fortnightly for two hours, so that the tutorial hours may be used as practical.

Semester-II

| Subject Code | Subject | Teaching Scheme | | | Examination Scheme | | | | | Total Marks | Credits | |
|--------------|--|-----------------|-----------|-----------|--------------------|------------|------------|------------|-----------|-------------|-----------|-----------|
| | | Hours/Week | | | In-Sem (online) | End-Sem | TW | PR. | Oral | | Lect/Tut | PR/OR |
| | | L | Tut. | PR | | | | | | | | |
| 202045 | Fluid Mechanics | 04 | - | 02 | 50 | 50 | - | 50 | - | 150 | 04 | 01 |
| 202047 | Soft Skills | - | - | 02 | -- | -- | 25 | - | - | 25 | - | 01 |
| 202048 | Theory of Machines – I | 04 | 01 | - | 50 | 50 | 25 | - | 25 | 150 | 04 | 01 |
| 202049 | Engineering Metallurgy | 03 | 01 | - | 50 | 50 | - | - | 25 | 125 | 03 | 01 |
| 202050 | Applied Thermodynamics | 04 | - | 02 | 50 | 50 | - | 50 | - | 150 | 04 | 01 |
| 203152 | Electrical and Electronics Engineering | 03 | - | 02 | 50 | 50 | 25 | - | - | 125 | 03 | 01 |
| 202053 | Machine Shop – I | - | - | 02 | -- | -- | 25 | - | - | 25 | - | 01 |
| | Total | 18 | 02 | 10 | 250 | 250 | 100 | 100 | 50 | 750 | 18 | 07 |
| | Total of Part-II | 30 Hrs | | | 750 | | | | | 25 | | |

Note: Theory of Machine-I and Engineering Metallurgy practical may be carried out fortnightly for two hours, so that the tutorial hours may be used as practical.

ATTESTED



PRINCIPAL
Matoshri College of Engineering
& Research Centre, Eklahare,
Nashik - 422 105

Savitribai Phule Pune University
T.E. Mechanical Engineering 2015 – Course
T. E. (Mechanical) (2015 Course) Semester – I

| Code | Subject | Teaching Scheme Hrs / week | | | Examination Scheme | | | | | Total Marks | Credits | |
|--------|--|-------------------------------|-----|-------|--------------------|-----|-----|----|----|----------------|---------|-----------------|
| | | Lecture | Tut | Pract | In-Sem | ESE | TW | PR | OR | | Th | TW / PR / OR |
| 302041 | Design of Machine Elements-I | 4 | - | 2 | 30@ | 70@ | 50 | - | - | 150 | 4 | 1 |
| 302042 | Heat Transfer* | 4 | - | 2 | 30 | 70 | - | 50 | - | 150 | 4 | 1 |
| 302043 | Theory of Machines-II ^s | 3 | 1 | - | 30 | 70 | 25 | - | 25 | 150 | 3 | 1 |
| 302044 | Turbo Machines | 3 | - | 2 | 30 | 70 | - | - | 25 | 125 | 3 | 1 |
| 302045 | Metrology and Quality Control ^s | 3 | - | 2 | 30 | 70 | - | - | 25 | 125 | 3 | 1 |
| 302046 | Skill Development | - | - | 2 | - | - | 25 | 25 | - | 50 | - | 1 |
| Total | | 17 | 1 | 10 | 150 | 350 | 100 | 75 | 75 | 750 | 17 | 6 |
| | | | | | | | | | | | 23 | |

T. E. (Mechanical) (2015 Course) Semester – II

| Code | Subject | Teaching Scheme Hrs / week | | | Examination Scheme | | | | | Total Marks | Credits | |
|--------|---|-------------------------------|-----|-------|--------------------|-----|-----|----|-----|----------------|---------|-----------------|
| | | Lecture | Tut | Pract | In-Sem | ESE | TW | PR | OR | | Th | TW / PR / OR |
| 302047 | Numerical Methods and Optimization* | 4 | - | 2 | 30 | 70 | - | 50 | - | 150 | 4 | 1 |
| 302048 | Design of Machine Elements-II | 4 | - | 2 | 30@ | 70@ | 25 | - | 25 | 150 | 4 | 1 |
| 302049 | Refrigeration and Air Conditioning | 3 | - | 2 | 30 | 70 | - | - | 25 | 125 | 3 | 1 |
| 302050 | Mechatronics [%] | 3 | 1 | - | 30 | 70 | - | - | 25 | 125 | 3 | 1 |
| 302051 | Manufacturing - Process-II ^s | 3 | - | - | 30 | 70 | - | - | - | 100 | 3 | - |
| 302052 | Machine Shop-II ^s | - | - | 2 | - | - | 50 | - | - | 50 | - | 1 |
| 302053 | Seminar ^s | - | - | 2 | - | - | 25 | - | 25# | 50 | - | 1 |
| 302054 | Audit Course* | -- | -- | -- | -- | -- | - | - | - | - | - | - |
| Total | | 17 | 1 | 10 | 150 | 350 | 100 | 50 | 100 | 750 | 17 | 6 |
| | | | | | | | | | | | 23 | |

Though it is under Oral head Internal Panel to be appointed by Principal and HOD.

Examination schedule will not be prepared at University level.

* Marked subjects are common with TE (Auto. Engg.) and TE Mech. Sandwich

^s Marked subjects are common with TE (Auto. Engg.) only

[%] Marked subjects are common with TE Mech. Sandwich only

@ Examination time for Insem examination 1 Hr 30 Min. and Endsem examination 3Hrs.

ATTESTED


PRINCIPAL

Matoshri College of Engineering
 & Research Centre, Ekmalgaon,
 Nashik - 422 005

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 |
| Total | | 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 |
| Total | | 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** |

Program Structure for
M.E. Mechanical (Heat Power Engineering)
(For 2008 Course) (w.e.f. June – 2008)

| Subject Code | Subject | Teaching Scheme | | Examination Scheme | | | | Credits |
|-----------------|--|-----------------|-----------|--------------------|------------|----------|------------|-----------|
| | | Lect. | Pract. | Paper | TW | Or | Total | |
| Sem – I | | | | | | | | |
| 502101 | Numerical Methods in Thermal and Fluid Engineering | 03 | - | 100 | - | - | 100 | 03 |
| 502102 | Advanced Thermodynamics | 03 | - | 100 | - | - | 100 | 03 |
| 502103 | Technology and Financial Management | 03 | - | 100 | - | - | 100 | 03 |
| 502104 | Elective – I | 03 | - | 100 | - | - | 100 | 03 |
| 502105 | Elective – II | 03 | - | 100 | - | - | 100 | 03 |
| 502106 | Lab. Practice – I | - | 06 | - | 50 | - | 50 | 03 |
| 502107 | Seminar- I | - | 04 | - | 50 | - | 50 | 02 |
| | Total | 15 | 10 | 500 | 100 | - | 600 | 20 |
| Sem – II | | | | | | | | |
| 502108 | Advanced Heat Transfer | 03 | - | 100 | - | - | 100 | 03 |
| 502109 | Measurement Techniques and Data Analysis | 03 | - | 100 | - | - | 100 | 03 |
| 502110 | Advanced Fluid Mechanics | 03 | - | 100 | - | - | 100 | 03 |
| 502111 | Elective – III | 03 | - | 100 | - | - | 100 | 03 |
| 502112 | Elective – IV | 03 | - | 100 | - | - | 100 | 03 |
| 502113 | Lab. Practice – II | - | 06 | - | 50 | - | 50 | 03 |
| 502114 | Seminar – II | - | 04 | - | 50 | - | 50 | 02 |
| | Total | 15 | 10 | 500 | 100 | - | 600 | 20 |

Sem – III

| Subject Code | Subject | Teaching Scheme | | Examination Scheme | | | | Credits |
|--------------|-------------------|-----------------|-----------|--------------------|------------|----------|------------|-----------|
| | | Lect. | Pract. | Paper | TW | Or | Total | |
| 602115 | Seminar – III | - | 04 | - | 50 | - | 50 | 02 |
| 602116 | Project Stage – 1 | - | 18 | - | 50 | - | 50 | 06 |
| | Total | - | 22 | - | 100 | - | 100 | 08 |

Sem- IV

| Subject Code | Subject | Teaching Scheme | | Examination Scheme | | | | Credits |
|--------------|--------------------|-----------------|-----------|--------------------|------------|-----------|-------------|-----------|
| | | Lect. | Pract. | Paper | TW | Or | Total | |
| 602117 | Project Stage – II | - | 18 | - | 150* | 50 | 200 | 12 |
| | Total | | 18 | - | 150 | 50 | 200 | 12 |
| | Grand Total | | | | | | 1500 | 60 |



*The term work of project stage II of semester IV should be assessed jointly by the pair of internal and external examiners, along with oral examination of the same.

Note- The Contact Hours for the calculation of load of teacher

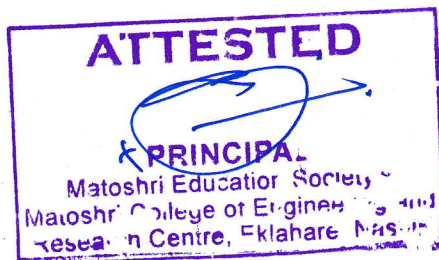
Seminar- 1 Hr/week/student &

Project - 2 Hr / week / student

| CODE | Elective – I | CODE | Elective – II |
|----------|---|----------|---|
| 502104 A | Performance Assessment of Mechanical Equipments | 502105A | Internal Combustion Engines |
| 502104 B | Refrigeration Technology | 502105 B | Advanced Air conditioning and Heating and Ventilation |
| 502104 C | Energy Conservation and management | 502105C | Conventional Power Plants |
| 502104 D | Convective Heat Transfer Analysis | 502105 D | Advanced Gas Dynamics |

| CODE | Elective – III | CODE | Elective – IV |
|----------|-------------------------------------|----------|--|
| 502111 A | Internal Combustion Engines – fuels | 502112 A | Heat Exchanger System Design and Performance |
| 502111 B | Cryogenic Engineering | 502112 B | Computational Fluid Dynamics |
| 502111 C | Non Conventional Power Plants | 502112 C | OPEN (SELF STUDY)** |

** Open elective subjects- BOS Mechanical Engineering will declare the list of subjects which can be taken under open elective.



Savitribai Phule Pune University
Second Year of Artificial Intelligence and Data Science (2020 Course)
 (With effect from Academic Year 2021-22)

Semester-III

| Course Code | Course Name | Teaching Scheme (Hours/Week) | | | Examination Scheme and Marks | | | | | | Credit Scheme | | | |
|---------------------|--------------------------------------|------------------------------|-----------|-----------|------------------------------|------------|------------|-----------|----------|------------|---------------|-----------|-----------|-----------|
| | | Lecture | Practical | Tutorial | Mid-Sem | End-Sem | Term work | Practical | Oral | Total | Lecture | Practical | Tutorial | Total |
| 210241 | Discrete Mathematics | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 210242 | Fundamentals of Data Structures | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 210243 | Object Oriented Programming (OOP) | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 210244 | Computer Graphics | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 217521 | Operating Systems | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 217522 | Data Structures Laboratory | - | 04 | - | - | - | 25 | 50 | - | 75 | - | 02 | - | 02 |
| 217523 | OOP and Computer Graphics Laboratory | - | 04 | - | - | - | 25 | 25 | - | 50 | - | 02 | - | 02 |
| 217524 | Operating Systems Laboratory | - | 02 | - | - | - | 25 | - | - | 25 | - | 01 | - | 01 |
| 217525 | Business Communication Skills | - | 02 | - | - | - | 25 | - | - | 25 | - | 01 | - | 01 |
| 217526 | Humanity and Social Science | - | - | 01 | - | - | 25 | - | - | 25 | - | - | 01 | 01 |
| 217527 | Audit Course 3 | Grade | | | | | | | | | | | | |
| Total | | 15 | 12 | 01 | 150 | 350 | 125 | 75 | - | 700 | - | - | - | - |
| Total Credit | | | | | | | | | | | 15 | 06 | 01 | 22 |

217526: Options for Audit Course 3

| Audit Course Code | Audit Course Title |
|-------------------|---|
| 217527-I | Green Construction and Design |
| 217527-II | Social Awareness and Governance Program |
| 217527-III | Environmental Studies |
| 217527-IV | Smart Cities |
| 217527-V | Foreign Language (one of Japanese/Spanish/French/German). Course contents for Japanese(Module 1) are provided. For other languages institute may design suitably. |


Savitribai Phule Pune University
Second Year of Artificial Intelligence and Data Science (2020 Course)
(With effect from Academic Year 2021-22)

Semester-IV

| Course Code | Course Name | Teaching Scheme (Hours/Week) | | | Examination Scheme and Marks | | | | | | Credit Scheme | | | |
|---------------------|---|---------------------------------|-----------|-----------|------------------------------|------------|------------|-----------|----------|------------|---------------|-----------|-----------|-----------|
| | | Lecture | Practical | Tutorial | Mid-Sem | End-Sem | Term work | Practical | Oral | Total | Lecture | Practical | Tutorial | Total |
| 217528 | Statistics | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 217529 | Internet of Things | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 210252 | Data Structures and Algorithms | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 210253 | Software Engineering | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 217530 | Management Information System | 03 | - | - | 30 | 70 | - | - | - | 100 | 03 | - | - | 03 |
| 217531 | Internet of Things Laboratory | - | 04 | - | - | - | 50 | 25 | - | 75 | - | 02 | - | 02 |
| 217532 | Data Structures and Algorithms Laboratory | - | 04 | - | - | - | 25 | 25 | - | 50 | - | 02 | - | 02 |
| 217533 | Project Based Learning II | - | 04 | - | - | - | 50 | - | - | 50 | - | 02 | - | 02 |
| 217534 | Code of Conduct | - | - | 01 | - | - | 25 | - | - | 25 | - | - | 01 | 01 |
| 217535 | Audit Course 4 | Grade | | | | | | | | | | | | |
| Total | | 15 | 12 | 01 | 150 | 350 | 150 | 50 | - | 700 | - | - | - | - |
| Total Credit | | | | | | | | | | | 15 | 06 | 01 | 22 |

217535: Options for Audit Course 4

| Audit Course Code | Audit Course Title |
|-------------------|--|
| 217535-I | Water Management |
| 217535-II | Intellectual Property Rights and Patents |
| 217535-III | The Science of Happiness |
| 217535-IV | Stress Relief: Yoga and Meditation |
| 217535-V | Foreign Language (one of Japanese/Spanish/French/German) Course contents for Japanese(Module 2) are provided. For other languages institute may design suitably. |


PRINCIPAL
 Matoshri College of Engineering &
 Research Centre, Eklahare, Nashik

