

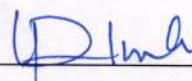
**Savitribai Phule Pune University**  
**Faculty of Science & Technology**



**Curriculum**  
**For**  
**First Year**  
**Bachelor of Engineering**  
**(Choice Based Credit System)**  
**(2019 Course)**

**(With Effect from Academic Year 2019-20)**



  
PRINCIPAL  
Dr. Vithalrao Vikhe Patil  
College of Engineering  
Ahmednagar



| 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/<br>107009                                    | Engineering Physics /<br>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 /<br>104010                                   | Basic Electrical Engineering / Basic Electronics Engineering | 03                           | 02                      | --       | 30                           | 70  | -- | 25  | -- | 125   | 03      | 01 | --  | 04    |
| 110005/<br>101011                                    | Programming and Problem Solving /<br>Engineering Mechanics   | 03                           | 02                      | --       | 30                           | 70  | -- | 25  | -- | 125   | 03      | 01 | --  | 04    |
| 111006                                               | Workshop <sup>@</sup>                                        | --                           | 02                      | --       | --                           | --  | -- | 25  | -- | 25    | --      | 01 | --  | 01    |
| Total                                                |                                                              | 16                           | 10                      | 01       | 150                          | 350 | 25 | 125 | -- | 650   | 16      | 05 | 01  | 22    |
| 101007                                               | Audit Course 1 <sup>&amp;</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/<br>107009                                     | Engineering Physics/<br>Engineering Chemistry                | 04                           | 02                                               | --       | 30                           | 70  | -- | 25  | -- | 125   | 04      | 01 | --  | 05    |
| 103004 /<br>104010                                    | Basic Electrical Engineering / Basic Electronics Engineering | 03                           | 02                                               | --       | 30                           | 70  | -- | 25  | -- | 125   | 03      | 01 | --  | 04    |
| 110005/<br>101011                                     | Programming and Problem Solving /<br>Engineering Mechanics   | 03                           | 02                                               | --       | 30                           | 70  | -- | 25  | -- | 125   | 03      | 01 | --  | 04    |
| 102012                                                | Engineering Graphics <sup>^</sup>                            | 01                           | 02                                               | 01       | --                           | 50  | 25 | --  | -- | 75    | 01      | 01 | --  | 02    |
| 110013                                                | Project Based Learning <sup>§</sup>                          | --                           | 04                                               | --       | --                           | --  | 25 | 50  | -- | 75    | --      | 02 | --  | 02    |
| Total                                                 |                                                              | 15                           | 12                                               | 02       | 120                          | 330 | 75 | 125 | -- | 650   | 15      | 05 | 02  | 22    |
| 101014                                                | Audit Course 2 <sup>&amp;</sup>                              | 02                           | Environmental Studies-II                         |          |                              |     |    |     |    |       |         |    |     |       |
| 107015                                                |                                                              | --                           | Physical Education-Exercise and Field Activities |          |                              |     |    |     |    |       |         |    |     |       |



*(Signature)*  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



## SE Civil

### Savitribai Phule Pune University, Pune SE (Civil Engineering) 2019 Course (With effect from Academic Year 2020-21)

#### Semester-III

| Course Code  | Course Name                                                                                                     | Teaching Scheme (Hours/Week) |           |          | Examination Scheme and Marks |         |     |    |     |       | Credit |    |     |       |
|--------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|-----------|----------|------------------------------|---------|-----|----|-----|-------|--------|----|-----|-------|
|              |                                                                                                                 | Theory                       | Practical | Tutorial | IN-Sem                       | End-Sem | TW  | PR | OR  | Total | TH     | PR | TUT | Total |
| 201001       | Building Technology and Architectural Planning                                                                  | 03                           | -         | -        | 30                           | 70      | --  | -  | -   | 100   | 03     | -  | -   | 03    |
| 201002       | Mechanics of structure                                                                                          | 03                           | -         | -        | 30                           | 70      | -   | -  | -   | 100   | 03     | -  | -   | 03    |
| 201003       | Fluid Mechanics                                                                                                 | 03                           | -         | -        | 30                           | 70      | -   | -  | -   | 100   | 03     | -  | -   | 03    |
| 207001       | Engineering Mathematics III                                                                                     | 03                           | -         | 01       | 30                           | 70      | 25  | -  | -   | 125   | 03     | -  | 01  | 04    |
| 207009       | Engineering Geology                                                                                             | 03                           | -         | -        | 30                           | 70      | -   | -  | -   | 100   | 03     | -  | -   | 03    |
| 201004       | Building Technology and Architectural Planning Lab                                                              | -                            | 04        | -        | -                            | -       | 50  | -  | -   | 50    | -      | 02 | -   | 02    |
| 201005       | Mechanics of structure Lab                                                                                      | -                            | 04        | -        | -                            | -       | -   | -  | 50  | 50    | -      | 02 | -   | 02    |
| 201006       | Fluid Mechanics Lab                                                                                             | -                            | 02        | -        | -                            | -       | -   | -  | 50  | 50    | -      | 01 | -   | 01    |
| 207010       | Engineering Geology Lab                                                                                         | -                            | 02        | -        | -                            | -       | 25  | -  | -   | 25    | -      | 01 | -   | 01    |
| 201007       | Audit Course 1<br>Awareness to civil<br>Engineering Practices / Road<br>Safety Management<br>/ Foreign Language | -                            | 01        | -        | -                            | Grade   | -   | -  | -   | Grade | -      | -  | -   | -     |
| <b>Total</b> |                                                                                                                 | 15                           | 13        | 01       | 150                          | 350     | 100 | -  | 100 | 700   | 15     | 06 | 01  | 22    |

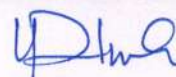
#### Abbreviations:

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

**Note:** Interested students of S.E. (Civil) can opt any one of the audit courses from the list of audit courses prescribed by BoS (Civil Engineering)

**Note for all the courses:** The Underlined portion of the syllabus will be covered by video lectures/ on-line lectures/ flip classroom, self-study, NPTEL course lecture and/or using relevant ICT technique



  
PRINCIPAL  
Dr. Vithalrao Vikhe Patil  
College of Engineering  
Ahmednagar

| Semester-IV |                                      |                              |           |          |                              |         |     |    |    |       |        |    |     |       |
|-------------|--------------------------------------|------------------------------|-----------|----------|------------------------------|---------|-----|----|----|-------|--------|----|-----|-------|
| Course Code | Course Name                          | Teaching Scheme (Hours/Week) |           |          | Examination Scheme and Marks |         |     |    |    |       | Credit |    |     |       |
|             |                                      | Theory                       | Practical | Tutorial | IN-Sem                       | End-Sem | TW  | PR | OR | Total | TH     | PR | TUT | Total |
| 201008      | Geotechnical Engineering             | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03     | -  | -   | 03    |
| 201009      | Survey                               | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03     | -  | -   | 03    |
| 201010      | Concrete Technology                  | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03     | -  | -   | 03    |
| 201011      | Structural Analysis                  | 03                           | -         | 01       | 30                           | 70      | 25  | -  | -  | 125   | 03     | -  | 01  | 04    |
| 201012      | Project management                   | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03     | -  | -   | 03    |
| 201013      | Geotechnical Engineering Lab         | -                            | 02        | -        | -                            | -       | -   | -  | 50 | 50    | -      | 01 | -   | 01    |
| 201014      | Survey Lab                           | -                            | 04        | -        | -                            | -       | -   | 50 | -  | 50    | -      | 02 | -   | 02    |
| 201015      | Concrete Technology Lab              | -                            | 02        | -        | -                            | -       | 25  | -  | -  | 25    | -      | 01 | -   | 01    |
| 201017      | Project Based Learning               | -                            | 04        | -        | -                            | -       | 50  | -  | -  | 50    | -      | 02 | -   | 02    |
| 201018      | Audit Course II: Disaster Management | -                            | 01        | -        | -                            | Grade   | -   | -  | -  | Grade | -      | -  | -   | -     |
| Total       |                                      | 15                           | 13        | 01       | 150                          | 350     | 100 | 50 | 50 | 700   | 15     | 06 | 01  | 22    |

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

**Note for all the courses: The Underlined portion of the syllabus will be covered by video lectures/ on-line lectures/ flip classroom, self-study, NPTEL course lectures and/or using relevant ICT technique**



*(Signature)*

**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



# Savitribai Phule Pune University

## Syllabus: Second Year (SE) Electrical Engineering (2019 Course) w.e.f. AY:2020-2021

### SEMESTER-I

| Course Code  | Courses Name                                          | Teaching Scheme |           |           | Examination Scheme and Marks |            |            |           |           |            | Credits      |           |           |           |
|--------------|-------------------------------------------------------|-----------------|-----------|-----------|------------------------------|------------|------------|-----------|-----------|------------|--------------|-----------|-----------|-----------|
|              |                                                       | TH              | PR        | TUT       | ISE                          | ESE        | TW         | PR        | OR        | Total      | TH           | PR        | TUT       | Total     |
| 207006       | Engineering Mathematics-III                           | 03              | --        | --        | 30                           | 70         | --         | --        | --        | 100        | 03           | --        | --        | 03        |
| 203141       | Power Generation Technologies                         | 03              | --        | --        | 30                           | 70         | --         | --        | --        | 100        | 03           | --        | --        | 03        |
| 203142       | Material Science                                      | 03              | 04#       | --        | 30                           | 70         | 25         | --        | 25        | 150        | 03           | 02        | --        | 05        |
| 203143       | Analog and Digital Electronics                        | 03              | 02        | --        | 30                           | 70         | --         | 50        | --        | 150        | 03           | 01        | --        | 04        |
| 203144       | Electrical Measurement & Instrumentation              | 03              | 04#       | --        | 30                           | 70         | 25         | 25        | --        | 150        | 03           | 02        | --        | 05        |
| 203150       | Applications of Mathematics in Electrical Engineering | --              | 02*       | --        | --                           | --         | 25         | --        | --        | 25         | --           | 01        | --        | 01        |
| 203151       | Soft Skill                                            | --              | 02        | --        | --                           | --         | 25         | --        | --        | 25         | --           | 01        | --        | 01        |
| 203152       | Audit Course-III                                      | --              | --        | --        | --                           | --         | --         | --        | --        | --         | Grade: PP/NP |           |           |           |
| <b>Total</b> |                                                       | <b>15</b>       | <b>14</b> | <b>--</b> | <b>150</b>                   | <b>350</b> | <b>100</b> | <b>75</b> | <b>25</b> | <b>700</b> | <b>15</b>    | <b>07</b> | <b>--</b> | <b>22</b> |

### SEMESTER-II

| Course Code  | Courses Name                                    | Teaching Scheme |           |           | Examination Scheme and Marks |            |            |           |           |            | Credits      |           |           |           |
|--------------|-------------------------------------------------|-----------------|-----------|-----------|------------------------------|------------|------------|-----------|-----------|------------|--------------|-----------|-----------|-----------|
|              |                                                 | TH              | PR        | TUT       | ISE                          | ESE        | TW         | PR        | OR        | Total      | TH           | PR        | TUT       | Total     |
| 203145       | Power System-I                                  | 03              | --        | --        | 30                           | 70         | --         | --        | --        | 100        | 03           | --        | --        | 03        |
| 203146       | Electrical Machines-I                           | 03              | 02        | --        | 30                           | 70         | --         | 50        | --        | 150        | 03           | 01        | --        | 04        |
| 203147       | Network Analysis                                | 03              | 02        | --        | 30                           | 70         | 25         | --        | --        | 125        | 03           | 01        | --        | 04        |
| 203148       | Numerical Methods & Computer Programming        | 03              | 02        | --        | 30                           | 70         | --         | 25        | --        | 125        | 03           | 01        | --        | 04        |
| 203149       | Fundamental of Microcontroller and Applications | 03              | 04\$      | --        | 30                           | 70         | 25         | --        | 25        | 150        | 03           | 02        | --        | 05        |
| 203152       | Project Based Learning                          | --              | 04        | --        | --                           | --         | 50         | --        | --        | --         | --           | 02        | --        | --        |
| 203153       | Audit Course-IV                                 | --              | --        | --        | --                           | --         | --         | --        | --        | --         | Grade: PP/NP |           |           |           |
| <b>Total</b> |                                                 | <b>15</b>       | <b>14</b> | <b>--</b> | <b>150</b>                   | <b>350</b> | <b>100</b> | <b>75</b> | <b>25</b> | <b>700</b> | <b>15</b>    | <b>07</b> | <b>--</b> | <b>22</b> |

\* - Lab sessions on application of Mathematics in Electrical Engineering using professional software.

# - Practical section will comprises of two Part : a) PART A : 2 hours per week : Regular curriculum listed practical total 12 numbers out of which conduction of 8 numbers will be mandatory b) PART B : 2 Hours a week : Practical/case studies/assignments to enable active learning based on advances related to subject to bridge gap between curriculum and enhance practical knowledge required in field .

\$ - Practical section will comprises of two Part : a) PART A : 2 hours per week : Regular curriculum listed practical total 12 numbers out of which conduction of 8 numbers will be mandatory b) PART B : 2 Hours a week : IOT application in Electrical Engineering using microcontroller and GSM module to bridge gap between curriculum and enhance application knowledge.

**Abbreviation:** TH: Theory, PR: Practical, TUT:Tutorial, ISE: Insem Exam, ESE: End Sem Exam, TW: Term Work, OR: Oral



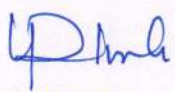


**Savitribai Phule Pune University, Pune**  
**S.E. (Electronics / E&TC Engineering) 2019 Course**  
 (With effect from Academic Year 2020-21)

**Semester-III**

| Course Code  | Course Name                  | Teaching Scheme (Hours/Week) |           |           | Examination Scheme and Marks |            |           |            |           |            | Credit    |           |           |           |
|--------------|------------------------------|------------------------------|-----------|-----------|------------------------------|------------|-----------|------------|-----------|------------|-----------|-----------|-----------|-----------|
|              |                              | Theory                       | Practical | Tutorial  | In-Sem                       | End-Sem    | TW        | PR         | OR        | Total      | TH        | PR        | TUT       | Total     |
| 207005       | Engineering Mathematics III  | 04                           | -         | 01        | 30                           | 70         | 25        | -          | -         | 125        | 04        | -         | 01        | 05        |
| 204181       | Electronic Circuits          | 03                           | -         | -         | 30                           | 70         | -         | -          | -         | 100        | 03        | -         | -         | 03        |
| 204182       | Digital Circuits             | 03                           | -         | -         | 30                           | 70         | -         | -          | -         | 100        | 03        | -         | -         | 03        |
| 204183       | Electrical Circuits          | 03                           | -         | -         | 30                           | 70         | -         | -          | -         | 100        | 03        | -         | -         | 03        |
| 204184       | Data structures              | 03                           | -         | -         | 30                           | 70         | -         | -          | -         | 100        | 03        | -         | -         | 03        |
| 204185       | Electronic Circuit Lab       | -                            | 02        | -         | -                            | -          | -         | 50         | -         | 50         | -         | 01        | -         | 01        |
| 204186       | Digital circuits Lab         | -                            | 02        | -         | -                            | -          | -         | 50         | -         | 50         | -         | 01        | -         | 01        |
| 204187       | Electrical Circuit Lab       | -                            | 02        | -         | -                            | -          | 25        | -          | -         | 25         | -         | 01        | -         | 01        |
| 204188       | Data Structures Lab          | -                            | 02        | -         | -                            | -          | -         | -          | 25        | 25         | -         | 01        | -         | 01        |
| 204189       | Electronic Skill Development | -                            | 02        | -         | -                            | -          | 25        | -          | -         | 25         | -         | 01        | -         | 01        |
| 204190       | Mandatory Audit Course 3 &   | -                            | -         | -         | -                            | -          | -         | -          | -         | -          | -         | -         | -         | -         |
| <b>Total</b> |                              | <b>16</b>                    | <b>10</b> | <b>01</b> | <b>150</b>                   | <b>350</b> | <b>75</b> | <b>100</b> | <b>25</b> | <b>700</b> | <b>16</b> | <b>05</b> | <b>01</b> | <b>22</b> |



  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar

**Savitribai Phule Pune University, Pune**  
**S.E. (Electronics / E&TC Engineering) 2019 Course**  
 (With effect from Academic Year 2020-21)

**Semester-IV**

| Course Code | Course Name                               | Teaching Scheme (Hours/Week) |           |          | Examination Scheme and Marks |         |     |    |    |       | Credit |    |     |       |
|-------------|-------------------------------------------|------------------------------|-----------|----------|------------------------------|---------|-----|----|----|-------|--------|----|-----|-------|
|             |                                           | Theory                       | Practical | Tutorial | In-Sem                       | End-Sem | TW  | PR | OR | Total | TH     | PR | TUT | Total |
| 204191      | Signals & Systems                         | 03                           | -         | 01       | 30                           | 70      | 25  | -  | -  | 125   | 03     | -  | 01  | 04    |
| 204192      | Control Systems                           | 03                           | -         |          | 30                           | 70      |     | -  | -  | 100   | 03     | -  | -   | 03    |
| 204193      | Principles of Communication Systems       | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03     | -  | -   | 03    |
| 204194      | Object Oriented Programming               | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03     | -  | -   | 03    |
| 204195      | Signals & Control System Lab              |                              | 02        |          |                              |         | 50  |    |    | 50    |        | 01 |     | 01    |
| 204196      | Principle of Communication Systems Lab    | -                            | 02        | -        | -                            | -       | -   | 50 | -  | 50    | -      | 01 | -   | 01    |
| 204197      | Object Oriented Programming Lab           | -                            | 02        | -        | -                            | -       | -   | -  | 50 | 50    | -      | 01 | -   | 01    |
| 204198      | Data Analytics Lab                        |                              | 02        |          |                              |         | -   |    | 25 | 25    |        | 01 |     | 01    |
| 204199      | Employability Skill Development           | 02                           | 02        | -        | -                            | -       | 50  | -  | -  | 50    | 02     | 01 | -   | 03    |
| 204200      | Project Based Learning <sup>η</sup>       | -                            | 04        |          |                              |         | 50  |    | -  | 50    |        | 02 |     | 02    |
| 204201      | Mandatory Audit Course 4 <sup>&amp;</sup> | -                            | -         | -        | -                            | -       | -   | -  | -  | -     | -      | -  | -   | -     |
| Total       |                                           | 14                           | 14        | 01       | 120                          | 280     | 175 | 50 | 75 | 700   | 14     | 07 | 01  | 22    |

**Abbreviations:**

In-Sem: In semester

PR : Practical

End-sem: End semester

OR : Oral

TH : Theory

TUT : Tutorial

TW : Term Work

**Note:** Interested students of S.E. (Electronics/E&TC) can opt any one of the audit course from the list of audit courses prescribed by BoS (Electronics & Telecommunications Engineering)



*V. R. Patil*  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



| Savitribai Phule Pune University                               |                                        |                              |           |          |                              |         |     |    |    |       |            |    |     |       |
|----------------------------------------------------------------|----------------------------------------|------------------------------|-----------|----------|------------------------------|---------|-----|----|----|-------|------------|----|-----|-------|
| Second Year of Information Technology Engineering(2019 Course) |                                        |                              |           |          |                              |         |     |    |    |       |            |    |     |       |
| (With effect from Academic Year 2020-21)                       |                                        |                              |           |          |                              |         |     |    |    |       |            |    |     |       |
| Semester-III                                                   |                                        |                              |           |          |                              |         |     |    |    |       |            |    |     |       |
| Course Code                                                    | Course Name                            | Teaching Scheme (Hours/Week) |           |          | Examination Scheme and Marks |         |     |    |    |       | Credit     |    |     |       |
|                                                                |                                        | Theory                       | Practical | Tutorial | IN-Sem                       | End-Sem | TW  | PR | OR | Total | TH         | PR | TUT | Total |
| <u>214441</u>                                                  | Discrete Mathematics                   | 03                           | -         | 01       | 30                           | 70      | 25  | -  | -  | 125   | 03         | -  | 01  | 04    |
| <u>214442</u>                                                  | Logic Design and Computer Organization | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214443</u>                                                  | Data Structures and Algorithms         | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214444</u>                                                  | Object Oriented Programming            | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214445</u>                                                  | Basics of Computer Network             | 03                           | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214446</u>                                                  | Logic Design Computer Organization Lab | -                            | 02        | -        | -                            | -       | 25  | 25 | -  | 50    | -          | 01 | -   | 01    |
| <u>214447</u>                                                  | Data Structures and Algorithms Lab     | -                            | 04        | -        | -                            | -       | 25  | 25 | -  | 50    | -          | 02 | -   | 02    |
| <u>214448</u>                                                  | Object Oriented Programming Lab        | -                            | 04        | -        | -                            | -       | 25  | 25 | -  | 50    | -          | 02 | -   | 02    |
| <u>214449</u>                                                  | Soft Skill Lab                         | -                            | 02        | -        | -                            | -       | 25  | -  | -  | 25    | -          | 01 | -   | 01    |
| <u>214450</u>                                                  | Mandatory Audit Course 3               | -                            | -         | -        | -                            | -       | -   | -  | -  | -     | Non Credit |    |     | -     |
| Total                                                          |                                        | 15                           | 12        | 01       | 150                          | 350     | 125 | 75 | -- | 700   | 15         | 06 | 01  | 22    |

## Abbreviations:

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

Note: Students of S.E. (Information Technology) can opt any one of the audit course from the list of audit courses prescribed by BoS (Information Technology)

#Mandatory Audit Course 3:

214450A- Ethics and values in IT

214450B - Quantitative Aptitude and Logical Reasoning

214450C- Language Study- Japanese- Module

214450D-Cyber Security and Law





| Savitribai Phule Pune University, Pune                          |                                   |                                 |           |          |                              |         |     |    |    |       |            |    |     |       |
|-----------------------------------------------------------------|-----------------------------------|---------------------------------|-----------|----------|------------------------------|---------|-----|----|----|-------|------------|----|-----|-------|
| Second Year of Information Technology Engineering (2019 Course) |                                   |                                 |           |          |                              |         |     |    |    |       |            |    |     |       |
| (With effect from Academic Year 2020-21)                        |                                   |                                 |           |          |                              |         |     |    |    |       |            |    |     |       |
| Semester-IV                                                     |                                   |                                 |           |          |                              |         |     |    |    |       |            |    |     |       |
| Course Code                                                     | Course Name                       | Teaching Scheme<br>(Hours/Week) |           |          | Examination Scheme and Marks |         |     |    |    |       | Credit     |    |     |       |
|                                                                 |                                   | Theory                          | Practical | Tutorial | IN-Sem                       | End-Sem | TW  | PR | OR | Total | TH         | PR | TUT | Total |
| <u>207003</u>                                                   | Engineering Mathematics- III      | 03                              | -         | 01       | 30                           | 70      | 25  | -  | -  | 125   | 03         | -  | 01  | 04    |
| <u>214451</u>                                                   | Processor Architecture            | 03                              | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214452</u>                                                   | Database Management System        | 03                              | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214453</u>                                                   | Computer Graphics                 | 03                              | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214454</u>                                                   | Software Engineering              | 03                              | -         | -        | 30                           | 70      | -   | -  | -  | 100   | 03         | -  | -   | 03    |
| <u>214455</u>                                                   | Programming Skill Development Lab | -                               | 02        | -        | -                            | -       | 25  | 25 | -  | 50    | -          | 01 | -   | 01    |
| <u>214456</u>                                                   | Database Management System Lab    | -                               | 04        | -        | -                            | -       | 25  | 25 | -  | 50    | -          | 02 | -   | 02    |
| <u>214457</u>                                                   | Computer Graphics Lab             | -                               | 02        | -        | -                            | -       | -   | 25 | -  | 25    | -          | 01 | -   | 01    |
| <u>214458</u>                                                   | Project Based Learning            | -                               | 04        | -        | -                            | -       | 50  | -  | -  | 50    | -          | 02 | -   | 02    |
| <u>214459</u>                                                   | Mandatory Audit Course 4          | -                               | -         | -        | -                            | -       | -   | -  | -  | -     | Non Credit |    |     | -     |
| Total                                                           |                                   | 15                              | 12        | 01       | 150                          | 350     | 125 | 75 | -  | 700   | 15         | 06 | 01  | 22    |

**Abbreviations:**

TH: Theory      TW: Term Work      PR: Practical

OR: Oral      TUT: Tutorial

**Note:** Students of S.E. (Information Technology) can opt any one of the audit course from the list of audit courses prescribed by BoS ( Information Technology)

**#Mandatory Audit Course 4:**214459A - Water Supply and Treatment214459B - Language Study- Japanese- Module II214459C - Waste Management and Pollution Control214459D - Intellectual Property Rights



**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 |
| Semester-III |                                            |                              |    |     |                              |     |     |     |    |       |        |    |     |       |
| 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                         | -                            | -  | -   | -                            | -   | -   | -   | -  | -     | -      | -  | -   | -     |
|              | Total                                      | 16                           | 12 | -   | 150                          | 350 | 75  | 100 | 25 | 700   | 16     | 6  | -   | 22    |
| Semester-IV  |                                            |                              |    |     |                              |     |     |     |    |       |        |    |     |       |
| 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                          | -                            | -  | -   | -                            | -   | -   | -   | -  | -     | -      | -  | -   | -     |
|              | Total                                      | 15                           | 12 | 1   | 150                          | 350 | 125 | -   | 75 | 700   | 15     | 6  | 1   | 22    |

**Abbreviations:** TH: Theory, PR: Practical, TUT: Tutorial, ISE: In-Semester Exam, ESE: End-Semester Exam, TW: Term Work, OR: Oral

**Note:** 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)

**Instructions**

- Practical/Tutorial must be conducted in three batches per division only.
- Minimum number of required Experiments/Assignments in PR/ Tutorial shall be carried out as mentioned in the syllabi of respective subjects.
- 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.
- 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.
- 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 & CGPA.



*(Signature)*  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



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

**Semester I**

| Course Code | Course                                                 | Teaching Scheme<br>hour/week |          |           | Semester Examination<br>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   | 03     | 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   | 03     | --       |
| 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   | 18     | 05       |



  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



### Semester II

| Course Code | Course                                       | Teaching Scheme<br>hour/week |          |           | Semester Examination<br>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   | 03     | 01       |
| 301008      | Project Management and Engineering Economics | 04                           | --       | --        | 30                                      | 70      | --  | --  | -- | 100   | 04     | --       |
| 301009      | Foundation Engineering                       | 03                           | --       | --        | 30                                      | 70      | --  | --  | -- | 100   | 03     | --       |
| 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   | 18     | 05       |



  
 PRINCIPAL  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



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

| (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       | <u>Industrial and Technology Management</u>             | 03              | --  | --  | 30                 | 70      | --  | --  | -- | 100         | 03     | --    |
| 2                  | 303141       | <u>Advance Microcontroller and its Applications</u>     | 04              | 02  | --  | 30                 | 70      | --  | --  | 50 | 150         | 04     | 01    |
| 3                  | 303142       | <u>Electrical Machines II</u>                           | 04              | 02  | --  | 30                 | 70      | --  | 50  | -- | 150         | 04     | 01    |
| 4                  | 303143       | <u>Power Electronics</u>                                | 04              | 02  | --  | 30                 | 70      | --  | 50  | -- | 150         | 04     | 01    |
| 5                  | 303144       | <u>Electrical Installation, Maintenance and Testing</u> | 03              | 02  | --  | 30                 | 70      | 50  | --  | -- | 150         | 03     | 01    |
| 6                  | 303145       | <u>Seminar and Technical Communication</u>              | --              | 02  | --  | --                 | --      | 50  | --  | -- | 50          | --     | 01    |
|                    | 303152       | <u>Audit Course III</u>                                 |                 |     |     |                    |         |     |     |    |             |        |       |
| 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       | <u>Power System II</u>                  | 04              | 02  | -- | 30                 | 70      | --  | 50 | --  | 150         | 04     | 01    |
| 2.          | 303147       | <u>Control System I</u>                 | 04              | 02  | -- | 30                 | 70      | -   | -- | 50  | 150         | 04     | 01    |
| 3.          | 303148       | <u>Utilization of Electrical Energy</u> | 03              | --  | -- | 30                 | 70      | --  | -- | --  | 100         | 03     | --    |
| 4.          | 303149       | <u>Design of Electrical Machines</u>    | 04              | 02  | -- | 30                 | 70      | 25  | -- | 50  | 175         | 04     | 01    |
| 5.          | 303150       | <u>Energy Audit and Management</u>      | 03              | 02  | -- | 30                 | 70      | 25  | -- | --  | 125         | 03     | 01    |
| 6.          | 303151       | <u>Electrical Workshop</u>              | --              | 02  | -- | --                 | --      | 50  | -- | --  | 50          | --     | 01    |
|             | 303153       | <u>Audit Course IV</u>                  |                 |     |    |                    |         |     |    |     |             |        |       |
| 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



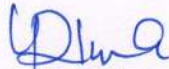


**Savitribai Phule University of Pune, Pune**  
**Third Year E&TC Engineering (2015 Course)**

(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+Tut    | PR/OR/TW |
| 304181               | Digital Communication                             | 3               | --        | --         | 30                             | 70      | --  | --  | -- | 100   | 3         | --       |
| 304182               | Digital Signal Processing                         | 3               | --        | --         | 30                             | 70      | --  | --  | -- | 100   | 3         | --       |
| 304183               | Electromagnetics                                  | 3               | 1         | --         | 30                             | 70      | --  | --  | -- | 100   | 4         | --       |
| 304184               | Microcontrollers                                  | 3               | --        | --         | 30                             | 70      | --  | --  | -- | 100   | 3         | --       |
| 304185               | Mechatronics                                      | 3               | --        | --         | 30                             | 70      | --  | --  | -- | 100   | 3         | --       |
| 304191               | Signal Processing and Communications Lab (DC/DSP) | --              | --        | 4          | --                             | --      | 50  | 50  |    | 100   | --        | 2        |
| 304192               | Microcontrollers and Mechatronics Lab             | --              | --        | 4          | --                             | --      | 50  | 50  |    | 100   | -         | 2        |
| 304193               | Electronics System Design                         | 2               | --        | 2          | --                             | --      | -   | --  | 50 | 50    | 2         | 1        |
|                      | Audit Course 3                                    | --              | --        | --         | --                             | --      | --  | --  | -- | --    | ----      |          |
|                      | <b>Total</b>                                      | 17              | 01        | 10         | 150                            | 350     | 100 | 100 | 50 | 750   | 18        | 5        |
| <b>Total Credits</b> |                                                   |                 |           |            |                                |         |     |     |    |       | <b>23</b> |          |



  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



### Third Year E&TC Engineering (2015 Course)

(With effect from Academic Year 2017-18)

| Semester II          |                                                       |                 |        |           |                                |        |         |     |    |     |       |           |          |
|----------------------|-------------------------------------------------------|-----------------|--------|-----------|--------------------------------|--------|---------|-----|----|-----|-------|-----------|----------|
| Course Code          | Course                                                | Teaching Scheme |        |           | Semester Examination Scheme of |        |         |     |    |     |       | Credit    |          |
|                      |                                                       | Hours / Week    | Theory | Tutorials | Practicals                     | In-Sem | End-Sem | TW  | PR | OR  | Total | Th+Tut    | PR/OR/TW |
| 304186               | Power Electronics                                     | 3               | --     | --        | --                             | 30     | 70      | --  | -- | --  | 100   | 3         | --       |
| 304187               | Information Theory, Coding and Communication Networks | 4               | --     | --        | --                             | 30     | 70      | --  | -- | --  | 100   | 4         | --       |
| 304188               | Business Management                                   | 3               | --     | --        | --                             | 30     | 70      | --  | -- | --  | 100   | 3         | --       |
| 306189               | Advanced Processors                                   | 3               | --     | --        | --                             | 30     | 70      | --  | -- | --  | 100   | 3         | --       |
| 304190               | System Programming and Operating Systems              | 3               | --     | --        | --                             | 30     | 70      | --  | -- | --  | 100   | 3         | --       |
| 304194               | Power and ITCT Lab                                    | --              | --     | --        | 4                              | --     | --      | 50  | 50 | --  | 100   | --        | 2        |
| 304195               | Advanced Processors and System Programming Lab        | --              | --     | --        | 4                              | --     | --      | 50  | 50 | --  | 100   | --        | 2        |
| 304196               | Employability Skills and Mini Project                 | 2               | --     | --        | 2                              | --     | --      | --  | -- | 50  | 50    | 2         | 1        |
|                      | <b>Audit Course 4</b>                                 | --              | --     | --        | --                             | --     | --      | --  | -- | --  | --    |           |          |
| <b>Total</b>         |                                                       | 18              | ---    | 10        | 150                            | 350    | 100     | 100 | 50 | 750 | 18    | 5         |          |
| <b>Total Credits</b> |                                                       |                 |        |           |                                |        |         |     |    |     |       | <b>23</b> |          |



  
 PRINCIPAL  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



## 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                |                |     |    |    |             |         |





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

| Code   | Subject                                    | Teaching Scheme<br>Hrs / week |     |       | Examination Scheme |     |     |    |    | Total<br>Marks | Credits |                 |
|--------|--------------------------------------------|-------------------------------|-----|-------|--------------------|-----|-----|----|----|----------------|---------|-----------------|
|        |                                            | Lecture                       | Tut | Pract | In-Sem             | ESE | TW  | PR | OR |                | Th      | TW /<br>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 <sup>s</sup>         | 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 <sup>s</sup> | 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<br>Hrs / week |     |       | Examination Scheme |     |     |    |     | Total<br>Marks | Credits |                 |
|--------|-----------------------------------------|-------------------------------|-----|-------|--------------------|-----|-----|----|-----|----------------|---------|-----------------|
|        |                                         | Lecture                       | Tut | Pract | In-Sem             | ESE | TW  | PR | OR  |                | Th      | TW /<br>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 <sup>s</sup> | 3                             | -   | -     | 30                 | 70  | -   | -  | -   | 100            | 3       | -               |
| 302052 | Machine Shop-II <sup>s</sup>            | -                             | -   | 2     | -                  | -   | 50  | -  | -   | 50             | -       | 1               |
| 302053 | Seminar <sup>s</sup>                    | -                             | -   | 2     | -                  | -   | 25  | -  | 25# | 50             | -       | 1               |
| 302054 | Audit Course*                           | --                            | --  | --    | --                 | --  | -   | -  | -   | -              | -       | -               |
| Total  |                                         | 17                            | 1   | 10    | 150                | 350 | 100 | 50 | 100 | 750            | 17      | 6               |
|        |                                         |                               |     |       |                    |     |     |    |     |                | 23      |                 |

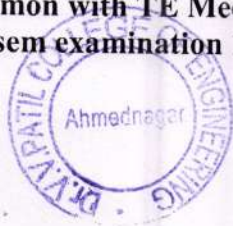
# Though it is under Oral head Internal Panel to be appointed by Principal and HOD. Examination schedule will not be prepared at University level.

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

<sup>s</sup> 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.



(Signature)  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



# SAVITRIBAI PHULE PUNE UNIVERSITY



## Board of Studies in Civil Engineering

Structure and Syllabus for B.E. Civil 2015 Course (w. e. f. June, 2018)





**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 Hrs/Week |    |    | In-Semester Assessment | TW  | Pract /Or | End-Semester Exam | Total | Credit            |     |
|                |                                   | Lect                     | Tu | Pr |                        |     |           |                   |       | Th                | Lab |
| 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   |
| <b>Total :</b> |                                   | 16                       | 2  | 8  | 150                    | 150 | 100       | 350               | 750   | 16                | 6   |
|                |                                   |                          |    |    |                        |     |           |                   |       | <b>22 Credits</b> |     |

| Semester-II    |                                           |                          |    |    |                        |     |     |                   |       |                   |    |
|----------------|-------------------------------------------|--------------------------|----|----|------------------------|-----|-----|-------------------|-------|-------------------|----|
| Subject code   | Subject                                   | Teaching Scheme Hrs/Week |    |    | In-Semester Assessment | TW  | Or  | End-Semester Exam | Total | Credit            |    |
|                |                                           | Lect                     | Tu | Pr |                        |     |     |                   |       | Th                | 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  |
| <b>Total :</b> |                                           | 12                       | 6  | 8  | 120                    | 150 | 200 | 280               | 750   | 12                | 10 |
|                |                                           |                          |    |    |                        |     |     |                   |       | <b>22 Credits</b> |    |



**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       | <u>Power System Operation and Control</u> | 03                         | 02 | -- | 30                         | 70      | 25  | -- | 25  | 150         | 03      | 01      |
| 2           | 403142       | <u>PLC and SCADA Applications</u>         | 04                         | 02 | -- | 30                         | 70      | 25  | 50 | --  | 175         | 04      | 01      |
| 3           | 403143       | <u>Elective I</u>                         | 03                         | 02 | -- | 30                         | 70      | 25  | -- | --  | 125         | 03      | 01      |
| 4           | 403144       | <u>Elective II</u>                        | 03                         | -- | -- | 30                         | 70      | --  | -- | --  | 100         | 03      | --      |
| 5           | 403145       | <u>Control System II</u>                  | 03                         | 02 | -- | 30                         | 70      | 25  | -- | 25  | 150         | 03      | 01      |
| 6           | 403146       | <u>Project I</u>                          | --                         | -- | 02 | --                         | --      | --  | -- | 50  | 50          | 02      | --      |
|             | 403152       | <u>Audit Course V</u>                     |                            |    |    |                            |         |     |    |     |             |         |         |
| 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       | <u>Switchgear and Protection</u>          | 03                         | 02 | -- | 30                         | 70      | 50  | -- | 25  | 175         | 03      | 01      |
| 2           | 403148       | <u>Power Electronic Controlled Drives</u> | 04                         | 02 | -- | 30                         | 70      | 25  | 50 | --  | 175         | 04      | 01      |
| 3           | 403149       | <u>Elective III</u>                       | 03                         | 02 | -- | 30                         | 70      | 25  | -- | 25  | 150         | 03      | 01      |
| 4           | 403150       | <u>Elective IV</u>                        | 03                         | -- | -- | 30                         | 70      | --  | -- | --  | 100         | 03      | --      |
| 5           | 403151       | <u>Project II</u>                         | --                         | -- | 06 | --                         | --      | 50  | -- | 100 | 150         | 06      | --      |
|             | 403153       | <u>Audit Course VI</u>                    |                            |    |    |                            |         |     |    |     |             |         |         |
| TOTAL       |              |                                           | 13                         | 06 | 06 | 120                        | 280     | 150 | 50 | 150 | 750         | 19      | 03      |





**Savitribai PhulePune 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   | --      | TW 01 + OR 01 |
| 404187                                | Lab Practice -II ( VLSI + Elective I) | --                           | --  | 4                             | --                                   | --      | 50  | 50                    |     | 100   | --      | TW01 + PR 01  |
| 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      |               |
| <u>Elective I</u>                     |                                       |                              |     | <u>Elective II</u>            |                                      |         |     | <u>Audit Course 5</u> |     |       |         |               |
| 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 |                                      |         |     |                       |     |       |         |               |



*(Signature)*  
**PRINCIPAL**  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



# 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                          |         |     |                                                                                                                      |     |       |        |               |  |
|                                                                                                                                                                    |                                  | Theory          | Tut | Pract                                                                                                                                             | In-Sem                         | End-Sem | TW  | PR                                                                                                                   | OR  | Total | TH/TW  | PR+OR         |  |
| 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   | --     | TW 01 + PR 01 |  |
| 404194                                                                                                                                                             | Lab Practice –IV ( Elective III) | --              | --  | 2                                                                                                                                                 | --                             | --      | --  | --                                                                                                                   | 50  | 50    | --     | 1             |  |
| 404195                                                                                                                                                             | Project Stage II                 | --              | 6   | -                                                                                                                                                 | --                             | --      |     | 150                                                                                                                  | 50  | 200   | --     | TW 04 + OR 02 |  |
|                                                                                                                                                                    | Audit Course 6                   | --              | --  | --                                                                                                                                                | --                             | --      | --  | --                                                                                                                   | --  | --    |        |               |  |
| Total                                                                                                                                                              |                                  | 13              | 6   | 6                                                                                                                                                 | 120                            | 280     | 200 | 50                                                                                                                   | 100 | 750   | 13     | 9             |  |
| Total Credits                                                                                                                                                      |                                  |                 |     |                                                                                                                                                   |                                |         |     |                                                                                                                      |     |       | 22     |               |  |
| <b>Elective III</b><br>1. Machine Learning<br>2. PLC s and Automation<br>3. Audio and Speech Processing<br>4. Software Defined Radio<br>5. Audio Video Engineering |                                  |                 |     | <b>Elective-IV</b><br>1. Robotics<br>2. Biomedical Electronics<br>3. Wireless Sensor Networks<br>4. Renewable Energy Systems<br>5. Open Elective* |                                |         |     | <b>Audit Course 6</b><br>1. Team Building, Leadership and Fitness<br>2. Environmental issues and Disaster Management |     |       |        |               |  |



*Dr. V. Patil*  
PRINCIPAL  
Dr. Vithalrao Vikhe Patil  
College of Engineering  
Ahmednagar



## 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. |



*V. Patil*  
 PRINCIPAL  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



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

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



*[Signature]*  
 PRINCIPAL  
 Dr. Vithalrao Vikhe Patil  
 College of Engineering  
 Ahmednagar



**Savitribai Phule Pune University, Pune**  
**BE (Mechanical Engineering) (2015 Course) Semester – VII**

| Code   | Subject                   | Teaching Scheme<br>Hrs / week |     |       | Examination Scheme |         |     |    |    | Total<br>Marks | Credits |    |       |
|--------|---------------------------|-------------------------------|-----|-------|--------------------|---------|-----|----|----|----------------|---------|----|-------|
|        |                           | Lect                          | Tut | Pract | In-Sem             | End-Sem | TW  | PR | OR |                | TH      | TW | OR/PR |
| 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 Stage-I           | -                             | -   | 4     | -                  | -       | 25  | -  | 25 | 50             | -       | 1  | 1     |
| Total  |                           | 16                            | -   | 12    | 150                | 350     | 125 | 50 | 75 | 750            | 16      | 2  | 4     |
|        |                           |                               |     |       |                    |         |     |    |    |                | 22      |    |       |

**B. E. (Mechanical Engineering) (2015 Course) Semester – VIII**

| Code   | Subject                  | Teaching Scheme<br>Hrs / week |     |       | Examination Scheme |               |     |    |     | Total<br>Marks | Credits |    |       |
|--------|--------------------------|-------------------------------|-----|-------|--------------------|---------------|-----|----|-----|----------------|---------|----|-------|
|        |                          | Lect                          | Tut | Pract | In-Sem             | End-Sem       | TW  | PR | OR  |                | TH      | TW | OR/PR |
| 402047 | Energy Engineering       | 3                             | -   | 2     | 30                 | 70            | 25  | -  | 25  | 150            | 3       | -  | 1     |
| 402048 | Mechanical System Design | 4                             | -   | 2     | 30<br>(1.5 hrs)    | 70<br>(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 Stage-II         | -                             | -   | 12    | -                  | -             | 100 | -  | 100 | 200            | -       | 3  | 3     |
| Total  |                          | 13                            | -   | 18    | 120                | 280           | 175 | -  | 175 | 750            | 13      | 4  | 5     |
|        |                          |                               |     |       |                    |               |     |    |     |                | 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 |                                  |
| 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**                  |

