Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Mechanical Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968339 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1 | F.E. Mechanical Engineering | Yes (CBCS) | 2016-17 |
| 2 | S.E. Mechanical Engineering | Yes (CBCS & Elective) | 2017-18 |
| 3 | T.E. Mechanical Engineering | Yes (CBCS & Elective) | 2018-19 |
| 4 | B.E. Mechanical Engineering | Yes (CBCS & Elective) | 2019-2020 |
| 5 | F. Y. B.Tech. Mechanical Engineering | Yes (CBCS) | 2018-19 |
| 6 | S. Y. B.Tech. Mechanical Engineering | Yes (CBCS & Elective) | 2019-2020 |

COLLEGE OF ENGINEERING

PRINCIPAL,
College of Engineering,
PANDHARPUR

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

**CBCS Syllabus for**

**F.E. (All Branches) w.e.f. Academic Year 2016-17**

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year (All Branches)
## WEF 2016-17

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Applied Mechanics | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Basic Electrical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Applied Mechanics | | | 2 | 1 | | | 25 | 25 |
| C114 | Basic Electrical Engineering | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **18** | **1** | **12** | **25** | **350** | **175** | **175** | **700** |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Computer Programming | 2 | | | 2 | | 25 | | 25 |
| C126 | Basic Electronics | 2 | | | 2 | 35 | 15 | | 50 |
| C127 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 315 | 185 | | 500 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics | | | 4 | 2 | | | 25 | 25 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Computer Programming | | | 2 | 1 | 25# | | 25 | 50 |
| C126 | Basic Electronics | | | 2* | 1 | | | 25 | 25 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| C128 | Audit Course- Workshop for Skill Development | | | @ | AU | Audit Course | | | |
| | Total | | 1 | 13 | 8 | 25 | | 175 | 200 |
| | **Grand Total** | **18** | **1** | **13** | **26** | **340** | **185** | **175** | **700** |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. * - Indicates the subject 'Basic Electronics' shall have lab session every alternate week

3. # - Indicates the subject 'Computer Programming' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

4. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

5. Audit Course 'Workshop for Skill Development' intends to develop few basic skills amongst student related to any one engineering discipline of student's choice (irrespective of his discipline of admission). There is no separate laboratory hours specified for this course. Student can use some of the respective laboratory sessions in the semester for this course as indicated below. If required, student can work beyond regular engagement hours under supervision of the concerned teacher to complete this course.

| *Sr.* | *Skill Development in* | *Course of which some laboratory hours can be used* |
|---|---|---|
| 1 | Electronics, Electronics & Telecommunication, Electrical, Electrical & Electronics, Biomedical Engineering | Basic Electronics |
| 2 | Computer Science & Engineering, Information Technology | Computer Programming |
| 3 | Mechanical Engineering, Biomedical Engineering | Engineering Graphics |
| 4 | Civil Engineering | Basic Civil Engineering |

Each institute is at liberty to decide content to be delivered under this course by an apt teacher. However it is desirable that this course shall nurture individual and team working skills of the student. Some of the exemplary skills (but not limited to) are listed in curriculum of this course.

The summative assessment of this course shall be carried out at institute level and the institute shall certify successful completion of this audit course by student.

6. @- indicates there is no separate laboratory hours for Audit Course- Workshop for Skill Development


# SOLAPURUNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## MECHANICAL ENGINEERING

## Syllabus Structure for

**S.E. (Mechanical Engineering) w.e.f. Academic Year 2017-18**
**T.E. (Mechanical Engineering) w.e.f. Academic Year 2018-19**
**B.E. (Mechanical Engineering) w.e.f. Academic Year 2019-20**

## Choice Based Credit System

9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## *C. Program Specific Outcomes (PSOs)*

1. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
2. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental consideration
3. **Self Learning:** Graduate with his sound fundamentals is prepared to comprehend applications of the Mechanical engineering through self learning mode.

# SOLAPUR UNIVERSITY, SOLAPUR

## Faculty of Engineering & Technology

**Structure of CBCS Curriculum for Second Year (Mechanical Engineering)wef 2017-18**

**Semester I : Theory Courses**

| Course code | Name of Theory Course | Hrs./week | | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| ME211 | Analysis of Mechanical Elements | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME212 | Applied Thermodynamics | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME213 | Engineering Mathematics -III | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME214 | Manufacturing Processes | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME215 | Machine Drawing | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| | **Sub Total** | **16** | **-** | **-** | **-** | **16** | **150** | **350** | **-** | **500** |
| MEV21 | Environmental Sciences | 1 | - | - | - | - | - | - | - | - |

**Semester I: Laboratory / Tutorial Courses**

| Course code | Name of Laboratory /Tutorial Course | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | | ICA | Total |
| | | | | | | | | POE | OE | | |
| ME211 | Analysis of Mechanical Elements | - | 1 | - | - | 1 | - | - | - | 25 | 25 |
| ME212 | Applied Thermodynamics | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME213 | Engineering Mathematics -III | - | 1 | - | - | 1 | - | - | - | 25 | 25 |
| ME214 | Manufacturing Processes | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME215 | Machine Drawing | - | - | - | 4 | 2 | - | - | 25 | 50 | 75 |
| ME216 | Professional Elective-I | 1 | - | 2 | - | 2 | - | 25 | - | 25 | 50 |
| ME217 | Workshop Practices -II | - | - | 2 | - | 1 | - | - | - | 50 | 50 |
| | **Sub Total** | - | - | - | - | 8 | - | 25 | 50 | 225 | 300 |
| | **Grand Total** | **16** | **02** | **08** | **04** | **24** | **150** | **425** | | **225** | **800** |

***Abbreviations:*** *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral),ICA - Internal Continuous Assessment.*

**Professional Elective-I:**Computer Programming in C ++, Dot Net, General Proficiency.

# SOLAPUR UNIVERSITY, SOLAPUR

## Faculty of Engineering & Technology

**Structure of CBCS Curriculum for Second Year (Mechanical Engineering) wef 2017-18**

**Semester II : Theory Courses**

| *Course code* | *Name of Theory Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| ME221 | Theory of Machine-I | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME222 | Machine Tools & Processes | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME223 | Fluid Mechanics | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME224 | Electrical and Electronic Technology | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME225 | Professional Elective-II | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| | **Sub Total** | **16** | **-** | **-** | **-** | **16** | **150** | **350** | **-** | **500** |
| MEV22 | Environmental Sciences | 1 | - | - | | - | - | - | - | - |

**Semester II: Laboratory / Tutorial Courses**

| *Course code* | *Name of Laboratory /Tutorial Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | D | | *ISE* | *ESE* | | *ICA* | *Total* |
| | | | | | | | | *POE* | *OE* | | |
| ME221 | Theory of Machine-I | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME222 | Machine Tools & Processes | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME223 | Fluid Mechanics | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME224 | Electrical Technology and Electronics | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME225 | Professional Elective-II | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME226 | Computer Aided Machine Drawing | 1 | - | 2 | - | 2 | - | 50 | - | 50 | 100 |
| ME 227 | Workshop Practices -III | - | - | 2 | - | 1 | - | - | - | 50 | 50 |
| | **Sub Total** | **-** | **-** | **14** | **-** | **07** | **-** | **75** | | **225** | **300** |
| | **Grand Total** | **16** | **-** | **14** | **-** | **23** | **150** | **425** | | **225** | **800** |

***Abbreviations:*** *L - Lectures, P –Practical, T- Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

**Professional Elective-II**: Computational Techniques & Numerical Methods, Simulation Techniques


# SOLAPURUNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## MECHANICAL ENGINEERING

## Syllabus Structure for

**S.E. (Mechanical Engineering) w.e.f. Academic Year 2017-18**
**T.E. (Mechanical Engineering) w.e.f. Academic Year 2018-19**
**B.E. (Mechanical Engineering) w.e.f. Academic Year 2019-20**

## Choice Based Credit System

# SOLAPURUNIVERSITY, SOLAPUR

**FACULTY OF ENGINEERING & TECHNOLOGY**

**MECHANICAL ENGINEERING**

**Syllabus Structure for**

# T.E. (Mechanical Engineering)
# w. e. f. Academic Year 2018-19

# Choice Based Credit System

# SOLAPUR UNIVERSITY, SOLAPUR

## Faculty of Engineering & Technology

**Structure of CBCS Curriculum for Third Year (Mechanical Engineering) wef 2018-19**

**Semester I : Theory Courses**

| Course code | *Name of Theory Course* | Hrs./week | | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| ME311 | Theory of Machine -II | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME312 | Metrology and Mechanical Measurement | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME313 | Metallurgy | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME314 | Machine Design -I | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME315 | Professional Elective -III | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME316 | Advanced Computer Programming -I | 1 | - | - | - | 1 | - | - | - | - |
| | Workshop Practices -IV | - | - | - | - | - | - | - | - | - |
| SLH31 | Self Learning(HSS) | - | - | - | - | 2 | - | 50 | | 50 |
| | **Sub Total** | **16** | **-** | **-** | **-** | **18** | **150** | **400** | | **550** |

**Semester I : Laboratory / Tutorial Courses**

| *Course code* | *Name of Laboratory /Tutorial Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | D | | *ISE* | *ESE* | | *ICA* | *Total* |
| | | | | | | | | *POE* | *OE* | | |
| ME311 | Theory of Machine -II | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME312 | Metrology and Mechanical Measurement | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME313 | Metallurgy | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME314 | Machine Design -I | - | 1 | - | - | 1 | - | - | - | 25 | 25 |
| ME315 | Professional Elective -III | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME316 | Advanced Computer Programming -I | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME317 | Workshop Practices -IV | - | - | 2 | - | 1 | - | - | - | 50 | 50 |
| | **Sub Total** | - | 01 | 12 | - | 7 | - | - | 50 | 200 | 250 |
| | **Grand Total** | **16** | **01** | **12** | **-** | **25** | **150** | **450** | | **200** | **800** |

***Abbreviations:****L - Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

**Professional Elective –III:** Machine Tool Design, Material Handling System, Fluid Machinery & Fluid Power

# SOLAPUR UNIVERSITY, SOLAPUR

## Faculty of Engineering & Technology

**Structure of CBCS Curriculum for Third Year (Mechanical Engineering) wef 2018-19**

**Semester II : Theory Courses**

| Course code | *Name of Theory Course* | Hrs./week | | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| ME321 | Heat and Mass Transfer | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME322 | Internal Combustion Engine | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME323 | CAD-CAM & CAE | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME324 | Machine Design -II | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME325 | Professional Elective -IV | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME326 | Advanced Computing Techniques'-II | 1 | - | - | - | 1 | - | - | - | - |
| | **Sub Total** | **16** | **-** | **-** | **-** | **16** | **150** | **350** | **-** | **500** |

**Semester II : Laboratory / Tutorial Courses**

| *Course code* | *Name of Laboratory / Tutorial Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | D | | *ISE* | *ESE* | | *ICA* | *Total* |
| | | | | | | | | *POE* | *OE* | | |
| ME321 | Heat and Mass Transfer | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| ME322 | Internal Combustion Engine | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME323 | CAD-CAM & CAE | - | - | 2 | - | 1 | - | - | - | 25 | 50 |
| ME324 | Machine Design -II | - | 01 | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME325 | Professional Elective - IV | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME326 | Advanced Computing Techniques'-II | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME327 | Workshop Practice –V | - | - | 2 | - | 1 | - | 25# | - | 25 | 75 |
| SLH32 | Self Learning (Technical) | - | - | - | - | - | - | - | - | 50 | - |
| | **Sub Total** | **-** | **01** | **14** | **-** | **7** | **-** | **75** | | **225** | **300** |
| | **Grand Total** | **16** | 01 | **14** | **-** | **23** | **150** | **425** | | **225** | **800** |

***Abbreviations:*** *L - Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

**Professional Elective – IV:** Experimental Stress Analysis, Mechanical Vibration, Tool Engineering # Indicates practical Examination only.

- **Note –**

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 07, then a new batch shall be formed.
2. Industrial Training (evaluated at B.E. Sem.-I) of minimum 30 days shall be completed in any vacation after S.E. Sem.-II, may be Maximum in two slots but before B.E. Sem.-I & the report shall be submitted and evaluated in B.E. Sem.-I.
3. Students shall select one Self Learning Module at T.E. Sem. I and T.E. Sem. II each from Humanities and Social Sciences and Technical Groups with at least one Self Learning Module from the Humanities and Social Sciences Group.
4. Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes of faculty of Engineering and Technology.
5. Minimum four assignments for Self Learning Modules at T.E. Sem. I be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department.
6. Self learning (Technical)T.E. Sem. II shall be containing of Mini Project(30-Marks) and Paper Presentation or Seminar(20-Marks).This will be assessed by respective Project guide at T.E. Level and Project group for T.E.(Mechanical) Sem. II (Mini Project )shall not be of more than **two** students.
7. ICA assessment shall be a continuous process based on student's performance in class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and laboratory sessions as applicable.

# SOLAPURUNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## MECHANICAL ENGINEERING

## Syllabus Structure for

**S.E. (Mechanical Engineering) w.e.f. Academic Year 2017-18**
**T.E. (Mechanical Engineering) w.e.f. Academic Year 2018-19**
**B.E. (Mechanical Engineering) w.e.f. Academic Year 2019-20**

## Choice Based Credit System

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ
।। विद्यया संपन्नता ।।

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

## Syllabus: Mechanical Engineering

## Name of the Course: B.E. IV (Sem.–VII & VIII)

**(Syllabus to be implemented from w.e.f. June 2019)**

# SOLAPUR UNIVERSITY, SOLAPUR

## Faculty of Engineering & Technology

**Structure of CBCS Curriculum for Third Year (Mechanical Engineering) wef 2019-20**

**Semester I : Theory Courses**

| Course code | Name of Theory Course | Hrs./week | | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| ME411 | Automatic Control Engineering | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME412 | Refrigeration and Air Conditioning | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME413 | Operations Research | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME414 | Professional Elective-V | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME415 | Free Elective-I | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME416 | Project Work -I | - | - | - | - | - | - | - | - | - |
| ME417 | Industrial Training | - | - | - | - | - | - | - | - | - |
| | **Sub Total** | **15** | **-** | **-** | **-** | **15** | **150** | **350** | **-** | **500** |

**Semester I : Laboratory / Tutorial Courses**

| Course code | Name of Laboratory / Tutorial Course | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | | ICA | Total |
| | | | | | | | | POE | OE | | |
| ME411 | Automatic Control Engineering | - | - | 2 | - | 1 | - | - | - | 25 | 50 |
| ME412 | Refrigeration and Air Conditioning | - | - | 2 | - | 1 | - | - | 25 | 25 | 25 |
| ME413 | Operations Research | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME414 | Professional Elective-V | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME415 | Free Elective-I | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME416 | Project Work -I | - | - | 6 | - | 3 | - | - | - | 25 | 25 |
| ME417 | Industrial Training | - | - | 1 | - | 1 | - | - | 50 | 25 | 75 |
| | **Sub Total** | - | - | 17 | - | 09 | - | - | 125 | - | 300 |
| | **Grand Total** | **16** | **-** | **17** | **-** | **24** | **150** | **475** | | **175** | **800** |

***Abbreviations:*** *L - Lectures, P –Practical, T- Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

**Professional Elective-V:** Finite Element Method, Piping Engineering, Production and Operational Management, Automobile Engineering, Costing and Cost Control

**Free Elective-I:** Industrial Robotics, Sugar Technology, Textile Engineering, Entrepreneurship Development, Process Equipments Design

# SOLAPUR UNIVERSITY, SOLAPUR

## Faculty of Engineering & Technology

**Structure of CBCS Curriculum for Third Year (Mechanical Engineering) wef 2019-20**

**Semester II : Theory Courses**

| Course code | *Name of Theory Course* | Hrs./week | | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| ME421 | Industrial Engineering | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME422 | Industrial and Quality Management | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME423 | Professional Elective -VI | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME424 | Free Elective-II | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME425 | Project Work -II | - | - | - | - | - | - | - | - | |
| | **Sub Total** | 12 | - | - | - | 12 | 120 | 280 | - | 400 |

**Semester II: Laboratory / Tutorial Courses**

| *Course code* | *Name of Laboratory / Tutorial Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | D | | *ISE* | *ESE* | | *ICA* | *Total* |
| | | | | | | | | *POE* | *OE* | | |
| ME421 | Industrial Engineering | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME422 | Industrial and Quality Management | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME423 | Professional Elective -VI | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| ME424 | Free Elective-II | - | - | 2 | - | 1 | - | 25 | 25 | 25 | 75 |
| ME425 | Project Work -II | - | - | 10 | - | 5 | - | - | 100 | 100 | 200 |
| | **Sub Total** | - | - | 18 | - | 9 | - | 200 | | 200 | 400 |
| | **Grand Total** | **12** | **-** | **18** | **-** | **21** | **120** | **480** | | **200** | **800** |

***Abbreviations:*** *L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA - Internal Continuous Assessment.*

***Professional Elective VI:*** *Unconventional Machining, Mechatronics, Computational Fluid dynamics, Marketing Management, Process Engineering*

***Free Elective II:*** *Software Engineering & Cyber Security, Agro Machine Engineering, Plastic Engineering, Economics for Engineers, Project Management.*

- **Note**:

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining students exceeds 07, then a new batch shall be formed.
2. Industrial Training (evaluated at B.E. Sem.-I) of minimum 30 days shall be completed in any vacation after S.E. Sem.-II, may be Maximum in two slots but before B.E. Sem.-I & the report shall be submitted and evaluated in B.E. Sem.-I
3. Appropriate subjects under Elective I & II may be added as per the requirement.
4. Project group for B.E. (Mechanical) Sem. I and Sem. II shall not be of more than **four** students.
5. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, and laboratory books and their interaction and attendance for theory and lab sessions as applicable.


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

## CBCS Syllabus for

## First Year B.Tech. (All Branches)
## w.e.f. Academic Year 2018-19

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year B.Tech. (All Branches)
## WEF 2018-19

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Basic Electrical & Electronics Engineering | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Engineering Mechanics | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 17 | | | 17 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Basic Electrical & Electronics Engineering | | | 2 | 1 | | | 25 | 25 |
| C114 | Engineering Mechanics | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **17** | **1** | **12** | **24** | **350** | **175** | **175** | **700** |
| C118 | Induction Program | *# (Please see note below)* | | | | | | | |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics & Design | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Programming for Problem Solving | 2 | | | 2 | | 25 | | 25 |
| C126 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 15 | | | 15 | 280 | 170 | | 450 |
| C127 | Democracy, Elections and Good Governance | | | | | 30 | | | 30 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE (POE)* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics & Design | | | 4 | 2 | | | 50 | 50 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Programming for Problem Solving | | | 4 | 2 | 50# | | 50 | 100 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 14 | 8 | 50 | | 200 | 250 |
| | **Grand Total** | **15** | **1** | **14** | **23** | **330** | **170** | **200** | **700** |
| C128 | Democracy, Elections and Good Governance | | | | | | | 20 | |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. # - Indicates the subject 'Programming for Problem Solving' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

3. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

4. Democracy, Elections & Good Governance is mandatory course. The marks earned by student with this course shall not be considered for calculation of SGPA/CGPA. However student must complete ICA of 20 marks and End Semester Examination (ESE) of 30 marks (as prescribed by university, time to time) for fulfillment of this course. This course is not considered as a passing head for counting passing heads for ATKT. However, student must pass this subject for award of the degree

5. Student must complete induction program of minimum five days before commencement of the regular academic schedule at the first semester.

# GUIDELINES FOR INDUCTION PROGRAM (C128)

New entrants into an Engineering program come with diverse thoughts, mind set and different social, economical, regional and cultural backgrounds. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

A **Five day** induction program for the new UG entrant students is proposed at the commencement of the first semester. It is expected to complete this induction program before commencement of the regular academic schedule.

Its purpose is to make new entrants comfortable in their new environment, open them up, set a healthy daily routine for them, create bonding amongst the peers as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature.

The Induction Program shall encompass (but not limited to) below activity –

1. Physical Activities
2. Creative Arts
3. Exposure to Universal Human Values
4. Literary Activities
5. Proficiency Modules
6. Lectures by Experts / Eminent Persons
7. Visit to Local Establishments like Hospital / Orphanage
8. Familiarization to Department

Induction Program Course do not have any marks or credits however performance of students for Induction Program is assessed at institute level using below mandatory criteria –

1. Attendance and active participation
2. Report writing

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**


**NAAC Accredited-2015**
**'B' Grade (CGPA 2.62)**

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

## Syllabus Structure: B. Tech. (Mechanical Engineering)

**S.Y. B. Tech (Mechanical Engineering) w.e.f. Academic Year 2019-20**
**T.Y. B. Tech (Mechanical Engineering) w.e.f. Academic Year 2020-21**
**Final Year B. Tech (Mechanical Engineering) w.e.f. Academic Year 2021-22**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur
## Faculty of Science & Technology

*Credit System structure of S.Y. B. Tech.* ***Mechanical Engineering*** *W.E.F. 2019-20*

**Semester -III**

**Theory Courses**

| *Course code* | *Name of Theory Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | D | | *ISE* | *ESE* | *ICA* | *Total* |
| ME211 | Applied Thermodynamics | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME212 | Mechanics of Materials | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME213 | Manufacturing Processes | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME214 | Machine Drawing & CAD | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME215 | Professional Elective-I | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| | **Sub Total** | **15** | **-** | **-** | - | **15** | **150** | **350** | **-** | **500** |
| MEV21 | Environmental Sciences | 1 | - | - | - | - | - | - | - | - |

**Semester 3: Laboratory / Tutorial Courses**

| *Course code* | *Name of Laboratory / Tutorial Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | D | | *ISE* | *ESE* | | *ICA* | *Total* |
| | | | | | | | | *POE* | *OE* | | |
| ME211 | Applied Thermodynamics | - | - | - | - | - | - | - | - | - | - |
| ME212 | Mechanics of Materials | - | 1 | - | - | 1 | - | - | - | 25 | 25 |
| ME213 | Manufacturing Processes | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME214 | Machine Drawing & CAD | - | - | - | 4 | 2 | - | 50 | - | 50 | 100 |
| ME215 | Professional Elective-I | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| | **Sub Total** | **-** | **-** | **-** | **-** | **5** | **-** | **50** | **25** | **125** | **200** |
| | **Grand Total** | **15** | **01** | **04** | **04** | **20** | **150** | **425** | | **125** | **700** |

***Abbreviations:*** *L- Lectures, P –Practical, T- Tutorial, ISE-In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

**Professional Elective-I: A**. Microprocessors in Automations **B**. Internal Combustion Engines **C**. Composite Materials

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## Faculty of Science & Technology

**Semester -IV**

*Credit System Structure of S.Y. B. Tech.* ***Mechanical Engineering*** *W.E.F. 2019-20*

| *Course code* | *Name of Theory Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| ME221 | Engineering Mathematics –III | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME222 | Manufacturing Technology | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME223 | Fluid Mechanics & Fluid Machines | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME224 | Kinematics & Theory of Machines | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| ME225 | Professional Elective-II | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| | **Sub Total** | **15** | **-** | **-** | **-** | **15** | **150** | **350** | **-** | **500** |
| MEV22 | Environmental Sciences | 1 | - | - | | - | - | - | - | - |

**Semester 4: Laboratory / Tutorial Courses**

| *Course code* | *Name of Laboratory / Tutorial Course* | *Hrs./week* | | | | *Credits* | *Examination Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | D | | *ISE* | *ESE* | | *ICA* | *Total* |
| | | | | | | | | *POE* | *OE* | | |
| ME221 | Engineering Mathematics –III | - | 1 | - | - | 1 | - | - | - | 25 | 25 |
| ME222 | Manufacturing Technology | - | | 2 | - | 1 | - | - | - | 25 | 25 |
| ME223 | Fluid Mechanics & Fluid Machines | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME224 | Kinematics & Theory of Machines | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| ME225 | Professional Elective-II | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| ME 226 | Mechanical Workshop-I | - | - | 2 | - | 1 | - | - | - | 50 | 50 |
| ME 227 | Electrical Technology | - | - | 2 | | 1 | - | - | 25 | 25 | 50 |
| | **Sub Total** | **-** | **01** | **12** | **-** | **07** | **-** | **50** | | **200** | **250** |
| | **Grand Total** | **15** | **01** | **12** | **-** | **22** | **150** | **400** | | **200** | **750** |

***Abbreviations:*** *L- Lectures, P –Practical, T- Tutorial, ISE- in Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.*

**Professional Elective-II**: **A**. Mechatronic Systems **B.** Power Plant Engineering **C.** Solid Mechanics

- **Note** :

1. Batch size for the practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining student exceeds 9, then a new batch shall be formed.
2. Student is required to study and pass Environmental Science subject in Second Year to become eligible for award of degree.
3. Industrial Training (evaluated at B. Tech Sem.-7) of minimum 30 days shall be completed in any vacation after B. Tech. Sem.-3, but before B. Tech. Sem.-7 & the report shall be submitted and get evaluated in B. Tech. Sem.-7
4. Term work assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, and laboratory books and their interaction and attendance for theory and laboratory sessions as applicable.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Computer Science & Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968327 | | | |
| Sr. No. | Class Name | Status of implementation of CBCS / elective course system (Yes/No) | Year of implementation of CBCS / elective course system |
| 1 | F.E. Computer Science & Engineering | Yes (CBCS) | 2016-17 |
| 2 | S.E. Computer Science & Engineering | Yes (CBCS) | 2017-18 |
| 3 | T.E. Computer Science & Engineering | Yes (CBCS) | 2018-19 |
| 4 | B.E. Computer Science & Engineering | Yes (CBCS & Elective) | 2019-2020 |
| 5 | F. Y. B.Tech. Computer Science & Engineering | Yes (CBCS) | 2018-19 |
| 6 | S. Y. B.Tech. Computer Science & Engineering | Yes (CBCS) | 2019-2020 |

COLLEGE OF ENGINEERING PANDHARPUR

B.Range
PRINCIPAL,
College of Engineering
PANDHARPUR

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

**CBCS Syllabus for**

**F.E. (All Branches) w.e.f. Academic Year 2016-17**

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year (All Branches)
## WEF 2016-17

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Applied Mechanics | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Basic Electrical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Applied Mechanics | | | 2 | 1 | | | 25 | 25 |
| C114 | Basic Electrical Engineering | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **18** | **1** | **12** | **25** | **350** | **175** | **175** | **700** |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Computer Programming | 2 | | | 2 | | 25 | | 25 |
| C126 | Basic Electronics | 2 | | | 2 | 35 | 15 | | 50 |
| C127 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 315 | 185 | | 500 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics | | | 4 | 2 | | | 25 | 25 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Computer Programming | | | 2 | 1 | 25# | | 25 | 50 |
| C126 | Basic Electronics | | | 2* | 1 | | | 25 | 25 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| C128 | Audit Course- Workshop for Skill Development | | | @ | AU | Audit Course | | | |
| | Total | | 1 | 13 | 8 | 25 | | 175 | 200 |
| | **Grand Total** | **18** | **1** | **13** | **26** | **340** | **185** | **175** | **700** |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. * - Indicates the subject 'Basic Electronics' shall have lab session every alternate week

3. # - Indicates the subject 'Computer Programming' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

4. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

5. Audit Course 'Workshop for Skill Development' intends to develop few basic skills amongst student related to any one engineering discipline of student's choice (irrespective of his discipline of admission). There is no separate laboratory hours specified for this course. Student can use some of the respective laboratory sessions in the semester for this course as indicated below. If required, student can work beyond regular engagement hours under supervision of the concerned teacher to complete this course.

| *Sr.* | *Skill Development in* | *Course of which some laboratory hours can be used* |
|---|---|---|
| 1 | Electronics, Electronics & Telecommunication, Electrical, Electrical & Electronics, Biomedical Engineering | Basic Electronics |
| 2 | Computer Science & Engineering, Information Technology | Computer Programming |
| 3 | Mechanical Engineering, Biomedical Engineering | Engineering Graphics |
| 4 | Civil Engineering | Basic Civil Engineering |

Each institute is at liberty to decide content to be delivered under this course by an apt teacher. However it is desirable that this course shall nurture individual and team working skills of the student. Some of the exemplary skills (but not limited to) are listed in curriculum of this course.

The summative assessment of this course shall be carried out at institute level and the institute shall certify successful completion of this audit course by student.

6. @- indicates there is no separate laboratory hours for Audit Course- Workshop for Skill Development

# SOLAPUR UNIVERSITY, SOLAPUR
## Faculty of Engineering & Technology
## Second Year Computer Science and Engineering

*Choice Based Credit System Syllabus Structure of S.E.Computer Science and EngineeringW.E.F. 2017-2018* ***Semester I***

| ***Course Code*** | ***Theory Course Name*** | ***Hrs./week*** | | | ***Credits*** | ***Examination Scheme*** | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ***L*** | ***T*** | ***P*** | | ***ISE*** | ***ESE*** | ***ICA*** | ***Total*** |
| CS 211 | Applied Mathematics - I | 3 | 1 | _ | 4 | 30 | 70 | 25 | 125 |
| CS 212 | Discrete Mathematical Structures | 3 | 1 | _ | 4 | 30 | 70 | 25 | 125 |
| CS 213 | Data Communication | 3 | - | _ | 3 | 30 | 70 | - | 100 |
| CS 214 | Digital Techniques | 3 | - | _ | 3 | 30 | 70 | - | 100 |
| CS 215 | Computer Graphics | 3 | _ | _ | 3 | 30 | 70 | - | 100 |
| CS 216 | Advanced C Concepts | 3 | _ | _ | 3 | -- | -- | - | -- |
| | **Sub Total** | 18 | 2 | _ | 20 | 150 | 350 | 50 | 550 |
| ENV 21 | Environmental Studies | 1 | | | | | | | |
| | **Laboratory** | | | | | | | | |
| | | | | | | | ***ESE*** | | |
| | | | | | | | ***POE*** | ***OE*** | |
| CS 213 | Data Communication | _ | _ | 2 | 1 | _ | 50 | -- | 25 | 75 |
| CS 214 | Digital Techniques | _ | _ | 2 | 1 | _ | 50 | _ | 25 | 75 |
| CS 215 | Computer Graphics | -- | -- | 2 | 1 | -- | | -- | 25 | 25 |
| CS 216 | Advanced C Concepts | _ | _ | 4 | 2 | _ | 50 | _ | 25 | 75 |
| | **Sub Total** | -- | - | 10 | 5 | _ | 150 | | 100 | 250 |
| | **Grand Total** | **18** | **2** | **10** | **25** | **150** | **500** | | **150** | **800** |

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE End Semester Exam,ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

**SOLAPUR UNIVERSITY, SOLAPUR**

# Faculty of Engineering & Technology

## Second Year Computer Science and Engineering

*Choice Based Credit System Structure of S.E. Computer Science and Engineering W.E.F. 2017-2018* ***Semester II***

| ***Course Code*** | ***Theory Course Name*** | ***Hrs./week*** | | | ***Credits*** | ***Examination Scheme*** | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ***L*** | ***T*** | ***P*** | | ***ISE*** | ***ESE*** | ***ICA*** | ***Total*** |
| CS 221 | Applied Mathematics – II | 3 | 1 | _ | 4 | 30 | 70 | 25 | 125 |
| CS 222 | Theory of Computation | 3 | 1 | _ | 4 | 30 | 70 | 25 | 125 |
| CS 223 | Microprocessors | 3 | _ | _ | 3 | 30 | 70 | - | 100 |
| CS 224 | Data Structures | 3 | _ | _ | 3 | 30 | 70 | - | 100 |
| CS 225 | Computer Networks | 3 | _ | _ | 3 | 30 | 70 | _ | 100 |
| CS 226 | Object Oriented Programming through C++ | 3 | _ | _ | 3 | -- | - | -- | -- |
| | **Sub Total** | 18 | 2 | _ | 20 | 150 | 350 | 50 | 550 |
| | **Environmental Studies** | 1 | | | | | | | |
| | **Laboratory** | | | | | | | | |
| | | | | | | | ***ESE*** | | |
| | | | | | | | ***POE*** | ***OE*** | |
| CS 223 | Microprocessors | _ | _ | 2 | 1 | _ | 50 | _ | 25 | 75 |
| CS 224 | Data Structures | _ | _ | 4 | 2 | _ | 50 | | 25 | 75 |
| CS 225 | Computer Networks | _ | _ | 2 | 1 | _ | - | _ | 25 | 25 |
| CS 226 | Object Oriented Programming through C++ | _ | _ | 2 | 1 | _ | 50 | _ | 25 | 75 |
| | **Sub Total** | | _ | 10 | 5 | _ | 150 | | 100 | 250 |
| | **Grand Total** | **18** | **2** | **10** | **25** | **150** | **500** | | **150** | **800** |

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam,ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

**Note** –

- Batch size for the practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining student exceeds 9, then a new batch shall be formed.

- Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I

- Term work assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable

# P.A.H. SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## COMPUTER SCIENCE & ENGINEERING

**Structure for**

**F.E. (All Branches) w.e.f. Academic Year 2016-17**
**S.E. (Computer Science & Engineering) w.e.f. Academic Year 2017-18**
**T.E. (Computer Science & Engineering) w.e.f. Academic Year 2018-19**
**B.E. (Computer Science & Engineering) w.e.f. Academic Year 2019-20**

**Choice Based Credit System**

*Choice Based Credit System Syllabus Structure of T.E.Computer Science and Engineering W.E.F. 2018-2019* ***Semester I***

| *Course Code* | *Theory Course / Name* | *Hrs./Week* | | | *Credits* | *Examination Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| CS311 | Operating System Concepts | \3 | -- | --- | 3 | 30 | 70 | -- | 100 |
| CS312 | System Programming | 3 | -- | --- | 3 | 30 | 70 | -- | 100 |
| CS313 | Database Engineering | 3 | -- | --- | 3 | 30 | 70 | - | 100 |
| CS314 | Design and Analysis of Algorithms | 3 | 1 | --- | 4 | 30 | 70 | 25 | 125 |
| CS315 | Computer Organization | 3 | 1 | --- | 4 | 30 | 70 | 25 | 125 |
| CS316 | Java Programming | 2 | --- | --- | 2 | 25 | -- | -- | 25 |
| SLH31 | Self Learning Module 1 | -- | --- | --- | 2 | -- | 50 | -- | 50 |
| | **Sub Total** | **18** | **02** | | **22** | **175** | **400** | **50** | **625** |
| | **Laboratory** | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | OE | |
| CS311 | Operating System Concepts | --- | | 2 | 1 | --- | 50 | -- | 25 | 75 |
| CS312 | System Programming | --- | | 2 | 1 | --- | --- | -- | 25 | 25 |
| CS313 | Database Engineering | --- | | 2 | 1 | --- | 50 | -- | 25 | 75 |
| CS316 | Java Programming | --- | | 4 | 2 | --- | 50 | -- | 25 | 75 |
| | **Sub Total** | **18** | **02** | **10** | **5** | **150** | **150** | | **100** | **250** |
| | **Grand Total** | | | | **27** | | **550** | | **150** | **875** |

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam,ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

*Choice Based Credit System Syllabus Structure of T.E.Computer Science and Engineering W.E.F. 2018-2019* ***Semester II***

| *Course Code* | *Theory Course / Name* | *Hrs./Week* | | | *Credits* | *Examination Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| CS321 | Compiler Construction | 4 | -- | -- | 4 | 30 | 70 | -- | 100 |
| CS322 | Unix Operating System | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS323 | Mobile Computing | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS324 | Software Engineering | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS325 | Mobile Application Development | 3 | -- | _ | 3 | 30 | 70 | -- | 100 |
| CS 326 | Programming in C# net | 2 | -- | -- | 2 | 25 | --- | -- | 25 |
| SLH 32 | Self Learning Module 2 | -- | -- | -- | 2 | | 50 | -- | 50 |
| | **Sub Total** | **18** | **02** | | **22** | **175** | **400** | **50** | **625** |
| | **Laboratory** | | | | | | | | |
| | | | | | | | **ESE** | | |
| | | | | | | | **POE** | **OE** | |
| CS321 | Compiler Construction | -- | -- | 2 | 1 | --- | -- | --- | 25 | 25 |
| CS322 | Unix Operating System | -- | -- | 2 | 1 | --- | --- | --- | 25 | 25 |
| CS325 | Mobile Application Development | -- | -- | 2 | 1 | --- | 50 | --- | 25 | 75 |
| CS326 | Programming in C# net | -- | -- | 2 | 1 | --- | 50 | --- | 25 | 75 |
| CS327 | Mini Project | -- | -- | 2 | 1 | --- | 50 | --- | --- | 50 |
| | **Sub Total** | **18** | **--** | **10** | **5** | **---** | **150** | | **100** | **250** |
| | **Grand Total** | **18** | **02** | **10** | **27** | **150** | **550** | | **150** | **875** |

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam,ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

| Self Learning Module 1 | Self Learning Module 2 |
|---|---|
| Subjects for Humanities and Social Sciences (HSS)<br>1. Economics<br>2. Psychology<br>3. Philosophy<br>4. Sociology<br>5. Humanities | Subjects for Self Learning for Technical Subjects<br>1. Computer Modeling and Simulation<br>2. Software licenses and practices<br>3. Network set up & management tools<br>4. Ethical Hacking<br>5. Data Science<br>6. UI Technologies |

**Note:**

1. The Internal Continuous Assessment (ICA) will be assessed based on continuous internal evaluation including class tests, assignments, performance in laboratories, Interaction in class, quizzes and group discussions as applicable.
2. The batch size for practical/tutorials be of 15 students. On forming the batches, if the strength of remaining students exceeds 7 students, then a new batch may be formed.
3. Mini Project shall consist of developing small software based on tools & technologies learnt in SE and TE.
4. Student shall select one Self Learning Course at T.E. Part I and T.E. Part II each from 'Humanities & Social Sciences (HSS) ' and 'Technical' Group respectively.
5. For TE Part I -
   A. Student can select a Self Learning Course from Solapur University, Solapur HSS Course List and appear for its examination as and when conducted by Solapur University, Solapur.

   **OR**

   B. Student can enroll for National Programme on Technology Enhanced Learning (NPTEL) course, complete its assignments and appear for certificate examination as and when conducted by NPTEL.

   *For more details about Self Learning Course (HSS), please refer to separate rule document available from P.A.H. Solapur University, Solapur*
   *More details about NPTEL are available at http://nptel.ac.in*
6. Project group for T.E.(CSE) Part II Mini Project shall be of 4 / 5 students
7. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I
8. Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes of faculty of Engineering and Technology.


# P.A.H. SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## COMPUTER SCIENCE & ENGINEERING

**Structure for**

**F.E. (All Branches) w.e.f. Academic Year 2016-17**
**S.E. (Computer Science & Engineering) w.e.f. Academic Year 2017-18**
**T.E. (Computer Science & Engineering) w.e.f. Academic Year 2018-19**
**B.E. (Computer Science & Engineering) w.e.f. Academic Year 2019-20**

## Choice Based Credit System

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**

**Faculty of Engineering & Technology**

***Structure of B.E.Computer Science and Engineering wef. 2019-2020***

*Choice Based Credit System Syllabus*

***Semester I***

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| CS411 | Advanced Computer Architecture | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS412 | Distributed Systems | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS413 | Modern Database Systems | 4 | -- | -- | 4 | 30 | 70 | -- | 100 |
| CS 414A to CS 414C | Elective –I | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS 415A to CS 415C | Elective-II | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS416 | # Programming with Python | 2 | -- | -- | 2 | -- | -- | 25 | 25 |
| | **Sub Total** | **18** | **02** | | **20** | **150** | **350** | **75** | **575** |
| | **Laboratory** | | | | | | **POE** **OE** | | |
| CS412 | Distributed Systems | -- | -- | 2 | 1 | -- | -- -- | 25 | 25 |
| CS413 | Modern Database Systems | -- | -- | 2 | 1 | -- | 50 -- | 25 | 75 |
| CS416 | Programming with Python | -- | -- | 2 | 1 | -- | 50 -- | -- | 50 |
| CS417 | Project Phase-I | -- | -- | 4 | 2 | -- | 50 -- | 25 | 75 |
| CS418 | Vocational Training | -- | -- | | 1 | -- | -- -- | 25 | 25 |
| | **Sub Total** | | | | 6 | | **150** **--** | **100** | **250** |
| | **Grand Total** | **18** | **02** | **10** | **26** | **150** | **500** | **175** | **825** |

*Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

***Semester II***

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| CS421 | Management Information System | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS422 | Information and Cyber Security | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS423A to CS423C | Elective-III | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS424A to CS424C | Elective-IV | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS425 | # Web Technology | 2 | -- | -- | 2 | 25 | -- | -- | 25 |
| | **Sub Total** | **14** | **02** | **--** | **16** | **145** | **280** | **50** | **475** |
| | **Laboratory** | | | | | | **POE** **OE** | | |
| CS422 | Information and Cyber Security | -- | -- | 2 | 1 | -- | 50 -- | 25 | 75 |
| CS425 | Web Technology | -- | -- | 4 | 2 | -- | 50 -- | 25 | 75 |
| CS424 | Elective-IV | -- | -- | 2 | 1 | | -- -- | 25 | 25 |
| CS426 | Project Phase-II | -- | -- | 6 | 3 | -- | 100 -- | 75 | 175 |
| | **Sub Total** | | -- | | **7** | | **200** | **150** | **350** |
| | **Grand Total** | **14** | **02** | **14** | **23** | **145** | **480** | **200** | **825** |

*Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

| | |
|---|---|
| **Elective I**<br>CS414A : Internet of Things<br>CS414B : Wireless Adhoc Networks<br>CS414C : Artificial Intelligence | **Elective II**<br>CS415A : Business Intelligence<br>CS415B : Data Mining<br>CS415C : Object Oriented Modeling and Design |
| **Elective III**<br>CS423A : Big data Analytics<br>CS423B : Human Computer Interaction<br>CS423C : Artificial Neural Network | **Elective IV**<br>CS424A : Software Testing and Quality Assurance<br>CS424B : Cloud Computing<br>CS424C : Machine Learning |

**Note:** Appropriate electives may be added or deleted as and when required.

**Note :**

- Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining student exceeds 7, then a new batch shall be formed.
- Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I
- Appropriate Elective I & II Subjects may be added when required.
- Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes of faculty of Engineering and Technology
- Project group for B.E.(CSE) Part I and Part II shall be of size 4 to 5 students
- Term work assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable


# P.A.H. SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## COMPUTER SCIENCE & ENGINEERING

**Syllabus for**

**B.E. (Computer Science & Engineering) w.e.f. Academic Year 2019-20**

**Choice Based Credit System**


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

## CBCS Syllabus for

## First Year B.Tech. (All Branches)
## w.e.f. Academic Year 2018-19

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year B.Tech. (All Branches)
## WEF 2018-19

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Basic Electrical & Electronics Engineering | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Engineering Mechanics | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 17 | | | 17 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Basic Electrical & Electronics Engineering | | | 2 | 1 | | | 25 | 25 |
| C114 | Engineering Mechanics | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **17** | **1** | **12** | **24** | **350** | **175** | **175** | **700** |
| C118 | Induction Program | *# (Please see note below)* | | | | | | | |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics & Design | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Programming for Problem Solving | 2 | | | 2 | | 25 | | 25 |
| C126 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 15 | | | 15 | 280 | 170 | | 450 |
| C127 | Democracy, Elections and Good Governance | | | | | 30 | | | 30 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE (POE)* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics & Design | | | 4 | 2 | | | 50 | 50 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Programming for Problem Solving | | | 4 | 2 | 50# | | 50 | 100 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 14 | 8 | 50 | | 200 | 250 |
| | **Grand Total** | **15** | **1** | **14** | **23** | **330** | **170** | **200** | **700** |
| C128 | Democracy, Elections and Good Governance | | | | | | | 20 | |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. # - Indicates the subject 'Programming for Problem Solving' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

3. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

4. Democracy, Elections & Good Governance is mandatory course. The marks earned by student with this course shall not be considered for calculation of SGPA/CGPA. However student must complete ICA of 20 marks and End Semester Examination (ESE) of 30 marks (as prescribed by university, time to time) for fulfillment of this course. This course is not considered as a passing head for counting passing heads for ATKT. However, student must pass this subject for award of the degree

5. Student must complete induction program of minimum five days before commencement of the regular academic schedule at the first semester.

# GUIDELINES FOR INDUCTION PROGRAM (C128)

New entrants into an Engineering program come with diverse thoughts, mind set and different social, economical, regional and cultural backgrounds. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

A **Five day** induction program for the new UG entrant students is proposed at the commencement of the first semester. It is expected to complete this induction program before commencement of the regular academic schedule.

Its purpose is to make new entrants comfortable in their new environment, open them up, set a healthy daily routine for them, create bonding amongst the peers as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature.

The Induction Program shall encompass (but not limited to) below activity –

1. Physical Activities
2. Creative Arts
3. Exposure to Universal Human Values
4. Literary Activities
5. Proficiency Modules
6. Lectures by Experts / Eminent Persons
7. Visit to Local Establishments like Hospital / Orphanage
8. Familiarization to Department

Induction Program Course do not have any marks or credits however performance of students for Induction Program is assessed at institute level using below mandatory criteria –

1. Attendance and active participation
2. Report writing

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## FACULTY OF SCIENCE & TECHNOLOGY

## COMPUTER SCIENCE & ENGINEERING

## Syllabus Structure for

**First Year B.Tech. (All Branches) w.e.f. Academic Year 2018-19**

**Second Year B.Tech.(Computer Science & Engineering) w.e.f. Academic Year 2019-20**

**Third Year B.Tech.(Computer Science & Engineering)w.e.f. Academic Year 2020-21**

**Final Year B.Tech.(Computer Science & Engineering) w.e.f. Academic Year 2021-22**



## Choice Based Credit System

# PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF SCIENCE & TECHNOLOGY
## Structure of Second Year B.Tech. (CSE) wef. 2019-2020

### Semester – III

| Course Code | Theory Course Name | Hrs./Week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| CS211 | Applied Mathematics-I | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS212 | Discrete Mathematical Structures | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS213 | Data Communication | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS214 | Digital Techniques | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS215 | Computer Graphics | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS216 | Advanced C Concepts | 2 | -- | -- | 2 | 25 | -- | -- | 25 |
| | **Sub Total** | 18 | 2 | -- | 20 | 175 | 350 | 50 | 575 |
| | **Laboratory / Workshop** | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | | |
| CS213 | Data Communication | -- | -- | 2 | 1 | -- | 50 | 25 | 75 |
| CS214 | Digital Techniques | -- | -- | 2 | 1 | -- | 50 | 25 | 75 |
| CS215 | Computer Graphics | -- | -- | 2 | 1 | -- | -- | 25 | 25 |
| CS216 | Advanced C Concepts | -- | -- | 4 | 2 | -- | 50 | 25 | 75 |
| | **Sub Total** | -- | -- | 10 | 5 | -- | 150 | 100 | 250 |
| | **Grand Total** | **18** | **2** | **10** | **25** | **175** | **500** | **150** | **825** |
| **ENV21** | **Environmental Studies** | 1 | -- | -- | -- | -- | -- | -- | -- |

### Semester – IV

| Course Code | Theory Course Name | Hrs./Week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| CS221 | Applied Mathematics-II | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| CS222 | Theory of Computation | 4 | 1 | -- | 5 | 30 | 70 | 25 | 125 |
| CS223 | Microprocessors | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS224 | Data Structures | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS225 | Computer Networks | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| CS226 | Object Oriented Programming through C++ | 2 | -- | -- | 2 | 25 | -- | -- | 25 |
| | **Sub Total** | **18** | **2** | **--** | **20** | **175** | **350** | **50** | **575** |
| | **Laboratory / Workshop** | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | | |
| CS223 | Microprocessors | -- | -- | 2 | 1 | -- | 50 | 25 | 75 |
| CS224 | Data Structures | -- | -- | 4 | 2 | -- | 50 | 25 | 75 |
| CS225 | Computer Networks | -- | -- | 2 | 1 | -- | -- | 25 | 25 |
| CS226 | Object Oriented Programming through C++ | -- | -- | 2 | 1 | -- | 50 | 25 | 75 |
| | **Sub Total** | **--** | **--** | **10** | **5** | **--** | **150** | **100** | **250** |
| | **Grand Total** | **18** | **2** | **10** | **25** | **175** | **500** | **150** | **825** |
| **ENV22** | **Environmental Studies** | 1 | -- | -- | -- | | | | |

Abbreviations: L - Lectures, P –Practical, T - Tutorial, ISE - In Semester Exam.,
ESE- End Semester Exam, ICA - Internal Continuous Assessment, ISE - Internal Tests,
ESE - University Examination (Theory &/ POE &/Oral examination)
Note: '#' indicates Practical exam only.

## Note :

**Semester III and Semester IV – The Structure of S.Y. B.Tech (CSE) and S.Y. B.Tech (IT) is same. Therefore, paper will be common for both the programs.**

1. Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.
2. Batch size for the practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining students exceeds 9, then a new batch shall be formed.
3. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I
4. Student shall select one Self Learning Module at Third year Semester V and Semester VI.
5. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable.
6. Appropriate Professional Electives Subjects may be added when required.
7. Project group for B.E. (Computer Science and Engineering) Part I and Part II shall not be of more than **five** students.

पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ
।। विद्यया संपन्नता ।।

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

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## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Electronics & Tele-communication Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968324 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1 | F.E. Electronics & Tele-communication Engineering | Yes (CBCS) | 2016-17 |
| 2 | S.E. Electronics & Tele-communication Engineering | Yes (CBCS) | 2017-18 |
| 3 | T.E. Electronics & Tele-communication Engineering | Yes (CBCS) | 2018-19 |
| 4 | B.E. Electronics & Tele-communication Engineering | Yes (CBCS & Elective) | 2019-2020 |
| 5 | F. Y. B.Tech. Electronics & Tele-communication Engineering | Yes (CBCS) | 2018-19 |
| 6 | S. Y. B.Tech. Electronics & Tele-communication Engineering | Yes (CBCS) | 2019-2020 |

COLLEGE OF ENGINEERING PANDHARPUR

B. Range

PRINCIPAL,
College of Engineering
PANDHARPUR

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

**CBCS Syllabus for**

**F.E. (All Branches) w.e.f. Academic Year 2016-17**

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year (All Branches)
## WEF 2016-17

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Applied Mechanics | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Basic Electrical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Applied Mechanics | | | 2 | 1 | | | 25 | 25 |
| C114 | Basic Electrical Engineering | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **18** | **1** | **12** | **25** | **350** | **175** | **175** | **700** |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Computer Programming | 2 | | | 2 | | 25 | | 25 |
| C126 | Basic Electronics | 2 | | | 2 | 35 | 15 | | 50 |
| C127 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 315 | 185 | | 500 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics | | | 4 | 2 | | | 25 | 25 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Computer Programming | | | 2 | 1 | 25# | | 25 | 50 |
| C126 | Basic Electronics | | | 2* | 1 | | | 25 | 25 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| C128 | Audit Course- Workshop for Skill Development | | | @ | AU | Audit Course | | | |
| | Total | | 1 | 13 | 8 | 25 | | 175 | 200 |
| | **Grand Total** | **18** | **1** | **13** | **26** | **340** | **185** | **175** | **700** |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. * - Indicates the subject 'Basic Electronics' shall have lab session every alternate week

3. # - Indicates the subject 'Computer Programming' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

4. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

5. Audit Course 'Workshop for Skill Development' intends to develop few basic skills amongst student related to any one engineering discipline of student's choice (irrespective of his discipline of admission). There is no separate laboratory hours specified for this course. Student can use some of the respective laboratory sessions in the semester for this course as indicated below. If required, student can work beyond regular engagement hours under supervision of the concerned teacher to complete this course.

| *Sr.* | *Skill Development in* | *Course of which some laboratory hours can be used* |
|---|---|---|
| 1 | Electronics, Electronics & Telecommunication, Electrical, Electrical & Electronics, Biomedical Engineering | Basic Electronics |
| 2 | Computer Science & Engineering, Information Technology | Computer Programming |
| 3 | Mechanical Engineering, Biomedical Engineering | Engineering Graphics |
| 4 | Civil Engineering | Basic Civil Engineering |

Each institute is at liberty to decide content to be delivered under this course by an apt teacher. However it is desirable that this course shall nurture individual and team working skills of the student. Some of the exemplary skills (but not limited to) are listed in curriculum of this course.

The summative assessment of this course shall be carried out at institute level and the institute shall certify successful completion of this audit course by student.

6. @- indicates there is no separate laboratory hours for Audit Course- Workshop for Skill Development


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ELECTRONICS & TELECOMMUNICATION ENGINEERING

## Syllabus Structure for

**S.E. (Electronics & Telecommunication Engineering) w.e.f. Academic Year 2017-18**
**T.E. (Electronics & Telecommunication Engineering) w.e.f. Academic Year 2018-19**
**B.E. (Electronics & Telecommunication Engineering) w.e.f. Academic Year 2019-20**

## Choice Based Credit System

# SOLAPUR UNIVERSITY, SOLAPUR

## Faculty of Engineering & Technology

CBCS *structure of S.E. Electronics & Telecommunication Engineering*

*W.E.F. 2017-2018* *Semester I*

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| ET211 | Engineering Mathematics – III | 3 | 1 | _ | 4 | 30 | 70 | 25 | 125 |
| ET212 | Electronics Circuit Analysis and Design-I | 4 | _ | _ | 4 | 30 | 70 | - | 100 |
| ET213 | Network Theory & Analysis | 4 | - | _ | 4 | 30 | 70 | - | 100 |
| ET214 | Digital Techniques | 4 | _ | _ | 4 | 30 | 70 | - | 100 |
| ET215 | Analog Communication | 3 | _ | _ | 3 | 30 | 70 | - | 100 |
| | **Sub Total** | 18 | 1 | _ | 19 | 150 | 350 | 25 | 525 |
| | **Laboratory** | | | | | | | | |

| | | | | | | | ESE | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | POE | OE | | |
| ET212 | Electronics Circuit Analysis and Design-I | _ | _ | 2 | 1 | _ | 50* | -- | 25 | 75 |
| ET213 | Network Theory & Analysis | _ | _ | 2 | 1 | _ | _ | _ | 25 | 25 |
| ET214 | Digital Techniques | -- | -- | 2 | 1 | -- | 50 | -- | 25 | 75 |
| ET215 | Analog Communication | _ | _ | 2 | 1 | _ | 50 | _ | 25 | 75 |
| ET216 | Electronic Software Lab-I | -- | 1 | 2 | 2 | _ | -- | _ | 50 | 50 |
| ENV21 | Environmental Science-I | 1 | - | -- | -- | -- | -- | -- | -- | -- |
| | **Sub Total** | -- | 1 | 10 | 6 | _ | 150 | | 150 | 300 |
| | **Grand Total** | **18** | **2** | **10** | **25** | **150** | **500** | | **175** | **825** |

Note: Abbreviations: L- Lectures, P-Practical, T-Tutorial, ISE-In-Semester Exam, ESE-End Semester Exam, ICA- Internal Continuous Assessment,ESE - University Examination (Theory &/ POE &/Oral examination)

**Note:** 1) *- Practical and Oral Examination of Electronics Circuit Analysis and Design – I includes some of the practical from Network Theory and Analysis

2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

# SOLAPUR UNIVERSITY, SOLAPUR
## Faculty of Engineering & Technology

*CBCS structure of S.E. Electronics & Telecommunication Engineering*
*W.E.F. 2017-2018 Semester II*

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| ET221 | Electronics Circuit Analysis and Design – II | 4 | _ | _ | 4 | 30 | 70 | - | 100 |
| ET222 | Data Structure | 4 | _ | _ | 4 | 30 | 70 | - | 100 |
| ET223 | Control Systems | 3 | _ | _ | 3 | 30 | 70 | - | 100 |
| ET224 | Linear Integrated Circuits | 4 | _ | _ | 4 | 30 | 70 | - | 100 |
| ET225 | Signals and Systems | 3 | 1 | _ | 4 | 30 | 70 | 25 | 125 |
| | **Sub Total** | 18 | 1 | _ | 19 | 150 | 350 | 25 | 525 |
| | **Laboratory/Workshop** | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | OE | |
| ET221 | Electronics Circuit Analysis and Design – II | _ | _ | 2 | 1 | _ | 50$ | - | 25 | 75 |
| ET222 | Data Structure | _ | _ | 2 | 1 | _ | 50 | _ | 25 | 75 |
| ET223 | Control Systems | _ | _ | 2 | 1 | _ | _ | _ | 25 | 25 |
| ET224 | Linear Integrated Circuits | _ | _ | 2 | 1 | _ | 50 | _ | 25 | 75 |
| ET226 | Electronic Software Lab-II | _ | 1 | 2 | 2 | _ | _ | _ | 50 | 50 |
| ENV22 | Environmental Science-I | 1 | - | -- | -- | -- | -- | -- | -- | -- |
| | **Sub Total** | | 1 | 10 | 6 | -- | 150 | | 150 | 300 |
| | **Grand Total** | **18** | **2** | **10** | **25** | **150** | **500** | | **175** | **825** |

Note: Abbreviations: L-Lectures, P-Practical, T-Tutorial, ISE-In Semester Exam, ESE-End Semester Exam, ICA- Internal Continuous Assessment, ESE-University Examination (Theory &/ POE &/Oral examination)

Note: 1) $- Practical and Oral Examination of Electronics Circuit Analysis and Design – II includes Some of the simulation practical from Electronic Software Lab-II
2) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

**Note** –Batch size for the practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining students exceeds 9, then a new batch shall be formed.

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ELECTRONICS & TELECOMMUNICATION ENGINEERING

**Syllabus for**

**T.E. (Electronics & Telecommunication Engineering)**

**w.e.f. Academic Year 2018-19**

**Choice Based Credit System**

# SOLAPUR UNIVERSITY, SOLAPUR
## Faculty of Engineering & Technology

CBCS *structure of T.E. Electronics & Telecommunication Engineering W.E.F. 2018-19*

***Semester I***

| ***Course Code*** | ***Theory Course Name*** | ***Hrs./week*** | | | ***Credits*** | ***Examination Scheme*** | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ***L*** | ***T*** | ***P*** | | ***ISE*** | ***ESE*** | ***ICA*** | ***Total*** |
| ET311 | Electro Magnetic Engg. & Radiating System | 3 | 1 | -- | 4 | 30 | 70 | -- | 100 |
| ET312 | Principles of Digital Communication | 4 | -- | -- | 4 | 30 | 70 | -- | 100 |
| ET313 | Software Engineering & Project Management System | 3 | -- | -- | 3 | 30 | 70 | -- | 100 |
| ET314 | Digital Signal Processing | 4 | -- | -- | 4 | 30 | 70 | -- | 100 |
| ET315 | Microcontroller – I (8051) | 4 | -- | -- | 4 | 30 | 70 | -- | 100 |
| SLH31 | Self Learning Course I -HSS | -- | -- | -- | 2 | -- | 50 | -- | 50 |
| **Sub Total** | | 18 | 1 | -- | 21 | 150 | 400 | -- | 550 |
| ***Course Code*** | ***LaboratoryCourse Name*** | | | | | | | | |
| | | | | | | | ***ESE*** | | |
| | | | | | | | ***POE*** | ***OE*** | |
| ET311 | Electro Magnetic Engg. & Radiating System | -- | -- | 2 | 1 | -- | -- | -- | 25 | 25 |
| ET312 | Principles of Digital Communication | -- | -- | 2 | 1 | -- | 50 | -- | 25 | 75 |
| ET314 | Digital Signal Processing | -- | -- | 2 | 1 | -- | 25 | -- | 25 | 50 |
| ET315 | Microcontroller – I (8051) | -- | -- | 2 | 1 | -- | 50 | -- | 25 | 75 |
| ET316 | Electronic Software Lab-III | -- | 1 | 2 | 2 | -- | -- | -- | 50 | 50 |
| **Sub Total** | | -- | 2 | 10 | 6 | -- | 125 | | 150 | 275 |
| **Grand Total** | | **18** | **2** | **10** | **27** | **150** | **525** | | **150** | **825** |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE-In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment ESE - University Examination (Theory &/ POE &/Oral examination)

## SOLAPUR UNIVERSITY, SOLAPUR
## Faculty of Engineering & Technology

CBCS *structure of T.E. Electronics & Telecommunication Engineering W.E.F. 2018-19*

***Semester II***

| ***Course Code*** | ***Theory Course Name*** | ***Hrs./week*** | | | ***Credits*** | ***Examination Scheme*** | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ***L*** | ***T*** | ***P*** | | ***ISE*** | ***ESE*** | ***ICA*** | ***Total*** |
| ET321 | Radar & Microwave Engineering | 4 | _ | _ | 4 | 30 | 70 | - | 100 |
| ET322 | Microcontroller-II (PIC) | 4 | _ | _ | 4 | 30 | 70 | - | 100 |
| ET323 | Electronics Applications & System Design | 4 | 1 | _ | 5 | 30 | 70 | - | 100 |
| ET324 | Optical Communication | 3 | _ | _ | 3 | 30 | 70 | - | 100 |
| ET325 | Mobile Communication | 3 | 1 | _ | 4 | 30 | 70 | 25 | 125 |
| ET327 | Self Learning Course II- Technical | _ | _ | _ | 2 | -- | 50 | _ | 50 |
| **Sub Total** | | 18 | 2 | _ | 22 | 150 | 400 | -- | 575 |
| ***Course Code*** | ***LaboratoryCourse Name*** | | | | | | | | |
| | | | | | | | ***ESE*** | | |
| | | | | | | | ***POE*** | ***OE*** | |
| ET321 | Radar & Microwave Engineering | _ | _ | 2 | 1 | _ | _ | _ | 25 | 25 |
| ET322 | Microcontroller-II (PIC) | _ | _ | 2 | 1 | _ | 50 | _ | 25 | 75 |
| ET323 | Electronics Applications & System Design | _ | _ | 2 | 1 | _ | _ | #50 | 25 | 75 |
| ET324 | Optical Communication | _ | _ | 2 | 1 | _ | _ | 25 | 25 | 50 |
| ET327 | Mini Hardware Project | _ | _ | 2 | 1 | _ | _ | _ | 25 | 25 |
| **Sub Total** | | | _ | 10 | 5 | _ | 125 | | 150 | 250 |
| **Grand Total** | | **18** | 2 | **10** | **27** | **150** | **525** | | **150** | **825** |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE-In Semester Exam., ESE - End Semester Exam, ICA- Internal Continuous Assessment ESE - University Examination (Theory &/ POE &/Oral examination)

- **Note** –

1. Batch size for the practical /tutorial shall be of 15 students. On forming the batches, if the strength of remaining student exceeds 7, then a new batch shall be formed.

2. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I

3. Student shall select one Self Learning Course at T.E. Part I and T.E. Part II each from 'Humanities & Social Sciences (HSS) ' and 'Technical' Group respectively

4. Curriculum for Humanities and Social Sciences (HSS) Self Learning Courses is common for all under graduate programmes of faculty of Engineering and Technology

5. For TE Part I -

A. Student can select a Self Learning Course from Solapur University, Solapur HSS Course List and appear for its examination as and when conducted by Solapur University, Solapur

**OR**

B. Student can enroll for National Programme on Technology Enhanced Learning (NPTEL) course, complete its assignments and appear for certificate examination as and when conducted by NPTEL.

*For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur*

*More details about NPTEL are available at http://nptel.ac.in*

6. Minimum four assignments for Self Learning Modules at T.E. Part I and T.E. Part II shall be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department

7. Project group for T.E.(E&TC) Part II Mini Hardware Project shall not be of more than **three** student

8. Project group for B.E.(E&TC) Part I and Part II shall not be of more than **three** student.

9. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable.

10. # indicates Oral Examination of Electronics Applications & System Design is combined with Mini Hardware Project.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**


**NAAC Accredited-2015**
**'B' Grade (CGPA 2.62)**

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

# Syllabus: Electronics and Telecommunication Engineering

## Name of the Course: B.E.- IV (Sem. VII & VIII)

**(Syllabus to be implemented from w.e.f. June 2019)**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## Faculty of Engineering & Technology

*CBCS structure of B.E.Electronics & Telecommunication Engineering W.E.F. 2019-20*

### *Semester I*

| *Course Code* | *Theory Course Name* | *Hrs./week* | | | *Credits* | *Examination Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ISE* | *ESE* | *ICA* | *Total* |
| ET411 | Computer Communication Network | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET412 | Embedded System Design | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET413 | Satellite Communication | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| ET414 | Database Management System (DBMS) | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| ET415 | Elective - I | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET416 | Seminar & Project | -- | -- | -- | -- | -- | -- | 25 | 25 |
| ET417 | Vocational Training | -- | -- | -- | -- | -- | -- | 25 | 25 |
| **Sub Total** | | 18 | 2 | -- | 20 | 150 | 350 | 175 | 675 |
| *Course Code* | *Laboratory Course Name* | | | | | | | | |
| | | | | | | | *ESE* | | |
| | | | | | | | *POE* | *OE* | |
| ET411 | Computer Communication Network | -- | -- | 2 | 1 | -- | 50 | -- | -- | 50 |
| ET412 | Embedded System Design | -- | -- | 2 | 1 | -- | 50 | -- | -- | 50 |
| ET413 | Satellite Communication | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| ET414 | Database Management System (DBMS) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| ET415 | Elective - I | -- | -- | 2 | 1 | -- | -- | -- | -- | -- |
| ET416 | Seminar & Project | -- | -- | 4 | 2 | -- | -- | 50 | -- | 50 |
| ET417 | Vocational Training | -- | -- | -- | 1 | -- | -- | -- | -- | -- |
| **Sub Total** | | -- | -- | 10 | 6 | -- | 150 | | -- | 150 |
| **Grand Total** | | **18** | **2** | **10** | **26** | **150** | **500** | | **175** | **825** |

**Elective I**

**ET415A--- Image & Video Processing**

**ET415B---Optimization Techniques**

**ET415C---Electronic Product Design**

**ET415D---Advanced DSP**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## Faculty of Engineering & Technology (Revised from 2018-19)

*CBCS structure of B.E. Electronics & Telecommunication Engineering W.E.F. 2019-20*

*Semester II*

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| ET421 | Internet of Things (IoT) | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| ET422 | Multimedia Communication Technique | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET423 | VLSI Design | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET424 | Elective – II | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET425 | Project | -- | -- | -- | -- | -- | -- | 100 | 100 |
| **Sub Total** | | 15 | 1 | -- | 16 | 120 | 280 | 200 | 600 |
| **Course Code** | **Laboratory Course Name** | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | OE | |
| ET421 | Internet of Things (IoT) | -- | -- | -- | -- | -- | -- | 25 | -- | 25 |
| ET422 | Multimedia Communication Technique | -- | -- | 2 | 1 | -- | -- | 50 | -- | 50 |
| ET423 | VLSI Design | -- | -- | 2 | 1 | -- | 50 | -- | -- | 50 |
| ET424 | Elective – II | -- | -- | 2 | 1 | -- | -- | -- | -- | -- |
| ET425 | Project | -- | -- | 8 | 4 | -- | 100 | -- | -- | 100 |
| **Sub Total** | | -- | -- | 14 | 7 | -- | 225 | | -- | 225 |
| **Grand Total** | | **15** | **1** | **14** | **23** | **120** | **505** | | **200** | **825** |

**Elective – II**
**ET424A---Network Security**
**ET424B---Soft Computing**
**ET424C---DSP Processors & Application**
**ET424D---Data Analytics**

Note:

- Minimum strength of the students for Elective is 15.
- Term work assessment shall be a continuous process based on student's performance in class tests, assignments, homework, subject seminars, quizzes, and laboratory books and their interaction and attendance for theory and lab sessions as applicable.
- The batch size for the practical's/tutorials is of 15 students. On forming the batches, if the strength of remaining students exceeds 7 students, then a new batch be formed. For project the group shall be of three students.


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

## CBCS Syllabus for

## First Year B.Tech. (All Branches)
## w.e.f. Academic Year 2018-19

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year B.Tech. (All Branches)
## WEF 2018-19

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Basic Electrical & Electronics Engineering | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Engineering Mechanics | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 17 | | | 17 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Basic Electrical & Electronics Engineering | | | 2 | 1 | | | 25 | 25 |
| C114 | Engineering Mechanics | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **17** | **1** | **12** | **24** | **350** | **175** | **175** | **700** |
| C118 | Induction Program | *# (Please see note below)* | | | | | | | |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics & Design | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Programming for Problem Solving | 2 | | | 2 | | 25 | | 25 |
| C126 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 15 | | | 15 | 280 | 170 | | 450 |
| C127 | Democracy, Elections and Good Governance | | | | | 30 | | | 30 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE (POE)* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics & Design | | | 4 | 2 | | | 50 | 50 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Programming for Problem Solving | | | 4 | 2 | 50# | | 50 | 100 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 14 | 8 | 50 | | 200 | 250 |
| | **Grand Total** | **15** | **1** | **14** | **23** | **330** | **170** | **200** | **700** |
| C128 | Democracy, Elections and Good Governance | | | | | | | 20 | |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. # - Indicates the subject 'Programming for Problem Solving' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

3. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

4. Democracy, Elections & Good Governance is mandatory course. The marks earned by student with this course shall not be considered for calculation of SGPA/CGPA. However student must complete ICA of 20 marks and End Semester Examination (ESE) of 30 marks (as prescribed by university, time to time) for fulfillment of this course. This course is not considered as a passing head for counting passing heads for ATKT. However, student must pass this subject for award of the degree

5. Student must complete induction program of minimum five days before commencement of the regular academic schedule at the first semester.

# GUIDELINES FOR INDUCTION PROGRAM (C128)

New entrants into an Engineering program come with diverse thoughts, mind set and different social, economical, regional and cultural backgrounds. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

A **Five day** induction program for the new UG entrant students is proposed at the commencement of the first semester. It is expected to complete this induction program before commencement of the regular academic schedule.

Its purpose is to make new entrants comfortable in their new environment, open them up, set a healthy daily routine for them, create bonding amongst the peers as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature.

The Induction Program shall encompass (but not limited to) below activity –

1. Physical Activities
2. Creative Arts
3. Exposure to Universal Human Values
4. Literary Activities
5. Proficiency Modules
6. Lectures by Experts / Eminent Persons
7. Visit to Local Establishments like Hospital / Orphanage
8. Familiarization to Department

Induction Program Course do not have any marks or credits however performance of students for Induction Program is assessed at institute level using below mandatory criteria –

1. Attendance and active participation
2. Report writing

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**


NAAC Accredited-2015
'B' Grade (CGPA 2.62)

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

## Syllabus: ELECTRONICS & TELECOMMUNICATION ENGINEERING

## Name of the Course: S.Y. B. Tech. (Sem- III & IV )

**(Syllabus to be implemented from w.e.f. June 2019)**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## FACULTY OF SCIENCE & TECHNOLOGY

## ELECTRONICS & TELECOMMUNICATION ENGINEERING

# Syllabus Structure for

**S.Y. B.Tech. (Electronics & Telecommunication Engineering)**

**w.e.f. Academic Year 2019-20**

**T.Y. B.Tech. (Electronics & Telecommunication Engineering)**

**w.e.f. Academic Year 2020-21**

**Final Year B.Tech. (Electronics & Telecommunication Engineering)**

**w.e.f. Academic Year 2021-22**

# Choice Based Credit System

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## Faculty of Science & Technology

**(Revised from 2018-19)**

*C.B.C.S. Structure of S.Y. B.Tech. Electronics & Telecommunication Engineering W.E.F. 2019-20*

*Semester I*

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| ET211 | Engineering Mathematics – III | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| ET212 | Electronic Circuit Analysis and Design | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET213 | Network Theory and Analysis | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET214 | Digital Techniques | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET215 | Analog Communication | 3 | -- | -- | 3 | 30 | 70 | 25 | 125 |
| **Sub Total** | | 18 | 1 | -- | 19 | 150 | 350 | 125 | 625 |
| ENV21 | Environmental Science | 1 | -- | -- | -- | -- | -- | -- | -- |
| **Course Code** | **Laboratory Course Name** | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | OE | |
| ET212 | Electronic Circuit Analysis and Design | -- | -- | 2 | 1 | -- | 50* | -- | -- | 50 |
| ET213 | Network Theory and Analysis | -- | -- | 2 | 1 | -- | -- | -- | -- | -- |
| ET214 | Digital Techniques | -- | -- | 2 | 1 | -- | 50 | -- | -- | 50 |
| ET215 | Analog Communication | -- | -- | 2 | 1 | -- | 25 | -- | -- | 25 |
| E216 | Electronics Software Lab-I | -- | 1 | 2 | 2 | -- | -- | -- | 50 | 50 |
| **Sub Total** | | -- | 1 | 10 | 6 | -- | 125 | | 50 | 175 |
| **Grand Total** | | **19** | **2** | **10** | **25** | **150** | **475** | | **175** | **800** |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE-End Semester Exam, OE-Oral Examination, POE- Practical Oral Examination, ICA- Internal Continuous Assessment

**Note:** *

- Practical and Oral Examination of Electronics Circuit Analysis and Design includes some of the practical from subject of Network Theory and Analysis

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## Faculty of Science & Technology

**(Revised from 2018-19)**

*C.B.C.S. Structure of S.Y. B. Tech. Electronics & Telecommunication Engineering W.E.F. 2019-20*

*Semester II*

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| ET221 | Control System | 3 | -- | -- | 3 | 30 | 70 | 25 | 125 |
| ET222 | Analog Integrated Circuits | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET223 | Principles of Digital Communication | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| ET224 | Signals and Systems | 3 | 1 | -- | 4 | 30 | 70 | 25 | 125 |
| ET225 | Data Structures | 4 | -- | -- | 4 | 30 | 70 | 25 | 125 |
| **Sub Total** | | 18 | 1 | -- | 19 | 150 | 350 | 125 | 625 |
| ENV22 | Environmental Science | 1 | -- | -- | -- | -- | -- | -- | -- |
| **Course Code** | **Laboratory Course Name** | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | OE | |
| ET221 | Control System | -- | -- | 2 | 1 | -- | -- | -- | -- | -- |
| ET222 | Analog Integrated Circuits | -- | -- | 2 | 1 | -- | 50 | -- | -- | 50 |
| ET223 | Principles of Digital Communication | -- | -- | 2 | 1 | -- | 25 | -- | -- | 25 |
| ET225 | Data Structures | -- | -- | 2 | 1 | -- | 50 | -- | -- | 50 |
| ET226 | Electronic Software Lab-II | -- | 1 | 2 | 2 | -- | -- | -- | 50 | 50 |
| **Sub Total** | | -- | 1 | 10 | 6 | -- | 125 | | 50 | 175 |
| **Grand Total** | | **19** | **2** | **10** | **25** | **150** | **475** | | **175** | **800** |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, OE-Oral Examination, POE- Practical Oral Examination, ICA- Internal Continuous Assessment

 Note:

1. Student is required to study and pass Environmental Science subject in Second Year to become eligible for award of degree.

2. Batch size for the practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining students exceeds 9, then a new batch shall be formed.

3. Vocational Training (evaluated at Final Year Part-I) of minimum 15 days shall be completed in any vacation after S.Y. Part-II but before Final Year Part-I & the report shall be submitted and evaluated in Final Year Part-I

4. Student shall select one Self Learning Module at T.Y. Part I and T.Y. Part II each from Technical and Humanities and Social Sciences Group with at least one Self Learning Module from the Humanities and Social Sciences Group

5. Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes of faculty of Engineering and Technology

6. ICA assessment shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131, e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute, ISO 9001:2015 Certified Institute
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Civil Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968331 | | | |
| Sr. No. | Class Name | Status of implementation of CBCS / elective course system (Yes/No) | Year of implementation of CBCS / elective course system |
| 1 | F.E. Civil Engineering | Yes (CBCS) | 2016-17 |
| 2 | S.E. Civil Engineering | Yes (CBCS) | 2017-18 |
| 3 | T.E. Civil Engineering | Yes (CBCS & Elective) | 2018-19 |
| 4 | B.E. Civil Engineering | Yes (CBCS & Elective) | 2019-2020 |
| 5 | F. Y. B.Tech. Civil Engineering | Yes (CBCS) | 2018-19 |
| 6 | S. Y. B.Tech. Civil Engineering | Yes (CBCS & Elective) | 2019-2020 |

COLLEGE OF ENGINEERING PANDHARPUR

B.Range
PRINCIPAL,
College of Engineering,
PANDHARPUR

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

**CBCS Syllabus for**

**F.E. (All Branches) w.e.f. Academic Year 2016-17**

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year (All Branches)
## WEF 2016-17

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Applied Mechanics | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Basic Electrical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Applied Mechanics | | | 2 | 1 | | | 25 | 25 |
| C114 | Basic Electrical Engineering | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **18** | **1** | **12** | **25** | **350** | **175** | **175** | **700** |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 4 | | | 4 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Computer Programming | 2 | | | 2 | | 25 | | 25 |
| C126 | Basic Electronics | 2 | | | 2 | 35 | 15 | | 50 |
| C127 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 18 | | | 18 | 315 | 185 | | 500 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics | | | 4 | 2 | | | 25 | 25 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Computer Programming | | | 2 | 1 | 25# | | 25 | 50 |
| C126 | Basic Electronics | | | 2* | 1 | | | 25 | 25 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| C128 | Audit Course- Workshop for Skill Development | | | @ | AU | Audit Course | | | |
| | Total | | 1 | 13 | 8 | 25 | | 175 | 200 |
| | **Grand Total** | **18** | **1** | **13** | **26** | **340** | **185** | **175** | **700** |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. * - Indicates the subject 'Basic Electronics' shall have lab session every alternate week

3. # - Indicates the subject 'Computer Programming' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

4. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

5. Audit Course 'Workshop for Skill Development' intends to develop few basic skills amongst student related to any one engineering discipline of student's choice (irrespective of his discipline of admission). There is no separate laboratory hours specified for this course. Student can use some of the respective laboratory sessions in the semester for this course as indicated below. If required, student can work beyond regular engagement hours under supervision of the concerned teacher to complete this course.

| *Sr.* | *Skill Development in* | *Course of which some laboratory hours can be used* |
|---|---|---|
| 1 | Electronics, Electronics & Telecommunication, Electrical, Electrical & Electronics, Biomedical Engineering | Basic Electronics |
| 2 | Computer Science & Engineering, Information Technology | Computer Programming |
| 3 | Mechanical Engineering, Biomedical Engineering | Engineering Graphics |
| 4 | Civil Engineering | Basic Civil Engineering |

Each institute is at liberty to decide content to be delivered under this course by an apt teacher. However it is desirable that this course shall nurture individual and team working skills of the student. Some of the exemplary skills (but not limited to) are listed in curriculum of this course.

The summative assessment of this course shall be carried out at institute level and the institute shall certify successful completion of this audit course by student.

6. @- indicates there is no separate laboratory hours for Audit Course- Workshop for Skill Development

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## CIVIL ENGINEERING

## Syllabus Structure for

**S.E. (Civil Engineering) w. e. f. Academic Year 2017-18**
**T.E. (Civil Engineering) w. e. f. Academic Year 2018-19**
**B.E. (Civil Engineering) w. e. f. Academic Year 2019-20**

## Choice Based Credit System

**SOLAPUR UNIVERSITY, SOLAPUR**

**Faculty of Engineering & Technology**

**Credit System structure of S. E. Civil- I, Semester- I, (W.E.F. 2017-2018)**

| Course Code | Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | | ICA | Total |
| CV211 | Concrete Technology | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV212 | Structural Mechanics-I | 3 | 1 | - | - | 4 | 30 | 70 | | 25 | 125 |
| CV213 | Surveying –I | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV214 | Building Construction & Drawing | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV215 | Fluid Mechanics-I | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV216 | Engineering Geology | 2 | - | - | - | 2 | 30 | 70 | | - | 100 |
| | **Total** | **17** | **1** | **-** | **-** | **18** | **180** | **420** | | **25** | **625** |
| | **Laboratory/Drawings** | | | | | | | **POE** | **OE** | | |
| CV211 | Concrete Technology | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| CV213 | Surveying –I | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| CV214 | Building Construction & Drawing | - | - | - | 2 | 1 | - | - | - | 25 | 25 |
| CV215 | Fluid Mechanics-I | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| CV216 | Engineering Geology | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| CV217 | Laboratory Practice | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| | **Total** | **-** | **-** | **10** | **2** | **7** | **-** | **75** | | **150** | **225** |
| | **Grand Total** | **17** | **1** | **10** | **2** | **25** | **180** | **495** | | **175** | **850** |
| ENV21 | Environmental Studies | **1** | – | – | | – | – | – | | – | – |

**Abbreviations:** L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

**Note:**

(1) The number of students in a practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Internal Continuous Assessment: Internal Continuous assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

**SOLAPUR UNIVERSITY, SOLAPUR**

**Faculty of Engineering & Technology**

**Credit System structure of S. E. Civil Engineering; Semester – II, W. E.F. 2017-2018**

| Course Code | Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | | ICA | Total |
| CV221 | Structural Mechanics-II | 3 | 1 | - | - | 4 | 30 | 70 | | 25 | **125** |
| CV222 | Surveying –II | 3 | - | - | - | 3 | 30 | 70 | | - | **100** |
| CV223 | Building Planning & Design | 3 | - | - | - | 3 | 30 | 70 | | - | **100** |
| CV224 | Fluid Mechanics-II | 3 | - | - | - | 3 | 30 | 70 | | - | **100** |
| CV225 | Water Resources Engineering- I | 3 | - | - | - | 3 | 30 | 70 | | 25 | **125** |
| CV226 | Engineering Mathematics-III | 3 | 1 | - | - | 4 | 30 | 70 | | 25 | **125** |
| | **Total** | **18** | **2** | **-** | **-** | **20** | **180** | **420** | | **75** | **675** |
| | **Laboratory/Drawings:** | | | | | | | **POE** | **OE** | | |
| CV222 | Surveying –II | - | - | 2 | - | 1 | - | - | -- | 25 | **25** |
| CV223 | Building Planning & Design | - | - | - | 2 | 1 | - | - | 25 | 25 | **50** |
| CV224 | Fluid Mechanics-II | - | - | 2 | - | 1 | - | - | - | 25 | **25** |
| CV227 | Computer Programming & Numerical Methods | 2 | - | 2 | - | 3 | - | 50 | - | 25 | **75** |
| | **Total** | **2** | **-** | **6** | **2** | **6** | **-** | **50** | **25** | **100** | **175** |
| | **Grand Total** | **20** | **2** | **6** | **2** | **26** | **180** | **495** | | **175** | **850** |
| ENV22 | Environmental Studies | **1** | – | – | | – | – | – | | – | – |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

**Note:**

(1) The number of students in a Practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Internal Continuous Assessment: Internal Continuous assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.


**SOLAPUR UNIVERSITY, SOLAPUR**

# FACULTY OF ENGINEERING & TECHNOLOGY

# CIVIL ENGINEERING

## Syllabus for

## T.E. (Civil Engineering) w. e. f. Academic Year 2018-19

## Choice Based Credit System (CBCS)

**SOLAPUR UNIVERSITY, SOLAPUR**

**Faculty of Engineering & Technology**

**Credit System structure of T. E. Civil-I, Semester- V, (Revised from 2018-2019)**

| Course code | Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | | ICA | Total |
| CV-311 | Design of Steel Structures | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV-312 | Geotechnical Engg.-I | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV-313 | Environmental Engg.-I | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV-314 | Water Resources Engg. II | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV-315 | Transportation Engg.-I | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| SLH-31 | Self Learning (H.S.S. course) | - | | - | - | 2 | - | 50 | | - | 50 |
| | **Total** | **15** | | | | **17** | **150** | **400** | | **-** | **550** |
| | **Laboratory/Drawings** | | | | | | | **POE** | **OE** | | |
| CV-311 | Design of Steel Structures | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| CV-312 | Geotechnical Engg.I | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| CV-316 | Building Planning & Design using CADD | 1 | - | - | 4 | 3 | - | - | 25 | 50 | 75 |
| CV-313 | Environmental Engg.I | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| CV-314 | Water Resources Engg. II | - | - | 2 | - | 1 | - | - | 25 | 25 | 50 |
| CV-315 | Transportation Engg.-I | - | - | 2 | - | 1 | - | | - | 25 | 25 |
| | **Total** | **-** | **-** | **10** | **4** | **8** | **-** | **75** | | **175** | **250** |
| | **Grand Total** | **16** | | **10** | **4** | **25** | **150** | **475** | | **175** | **800** |

**Abbreviations:** L: Lectures, P: Practical, T: Tutorial, D: Drawing. ISE: In Semester Examination Tests, ESE: End Semester Examination - University Examination (Theory &/ POE &/Oral examination), ICA: Internal Continuous Assessment.

**Note:**

1) Students shall undergo a field training of total 30 days in two phases including at least 15 days in the winter vacation after T.E. Civil Part -I and at least 15 days in summer vacation after T.E. Civil Part-II. They shall submit the field training report of the first phase to the faculty associated with subject Engineering Management- I in their T.E. Part-II. They shall submit field training report of the second phase to concerned 'Project' guides in B.E. Part-I.

2) Internal Continuous Assessment (ICA) shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

3) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7, then a new batch be formed.

4) Curriculum for Humanities and Social Sciences (HSS) Self Learning Courses is common for all under graduate programmes of Faculty of Engineering and Technology.

5) For self Learning at T.E. Civil Part I –

A. Student shall select a 'Self Learning Course' from Solapur University, Solapur 'HSS Course List' and appear for its examination as and when conducted by Solapur University, Solapur.
Minimum four assignments for Self Learning Modules at T. E. Part I shall be submitted by the students which shall be evaluated by a 'Module Coordinator' assigned by institute / department.

**OR**

B. Student with prior approval of the institute shall select and enroll for 'National Programme on Technology Enhanced Learning (NPTEL)' course from HSS domain with minimum eight weeks duration, complete necessary assignments and appear for certificate examination as per the NPTEL schedule during respective semester.
*For more details about Self Learning Course (HSS) please refer to separate rule document available from Solapur University, Solapur. More details about NPTEL are available at http://nptel.ac.in*

**SOLAPUR UNIVERSITY, SOLAPUR**

**Faculty of Engineering & Technology**

**Credit System structure of T. E. Civil-II, Semester - VI, W. E.F. 2018-2019**

| Course code | Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | | ICA | Total |
| CV-321 | Structural Mechanics-III | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV-322 | Geotechnical Engg.II | 4 | - | - | - | 4 | 30 | 70 | | - | 100 |
| CV-323 | Environmental Engg.II | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV-324 | Engineering Management- I | 3 | - | - | - | 3 | 30 | 70 | | 25 | 125 |
| CV-325 | Elective-I | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV-326 | Self Learning (Technical course) | - | - | - | - | 2 | - | 50 | | - | 50 |
| | **Total** | **16** | **0** | **-** | **-** | **18** | **150** | **400** | | **25** | **575** |
| | **Laboratory/Drawings:** | | | | | | - | **POE** | **OE** | | |
| CV-321 | Structural Mechanics-III | - | - | 2 | - | 1 | - | - | - | 25 | **25** |
| CV-322 | Geotechnical Engg.II | - | - | 2 | - | 1 | - | - | - | 25 | **25** |
| CV-323 | Environmental Engg.II | - | - | 2 | - | 1 | - | - | 25 | 25 | **50** |
| CV-325 | Elective-I | - | - | 2 | - | 1 | - | - | - | 25 | **25** |
| CV-327 | Project on Steel Structures | - | - | - | 4 | 2 | - | - | 25 | 50 | **75** |
| CV-328 | Mini Project in SM-III/GE-II/EE-II/EM-I using Application Software | - | - | 2 | | 1 | | | | 50 | **50** |
| CV-329 | Assessment of field training report | - | - | - | - | 1 | | | | 25 | **25** |
| | **Total** | **-** | **-** | **10** | **4** | **8** | | | **50** | **225** | **275** |
| | **Grand Total** | **16** | **0** | **10** | **4** | **26** | **150** | **450** | | **250** | **850** |

**Abbreviations:** L: Lectures, P: Practical, T: Tutorial, D: Drawing, ISE: In Semester Examination Tests, ESE: End Semester Examination - University Examination (Theory &/ POE &/Oral examination), ICA: Internal Continuous Assessment.

**Note:**

1) Student/s shall carry out 'Mini Project' in any one of the following subjects: Structural Mechanics-III, Geotechnical Engg. II, Environmental Engg. II or Engineering Management-I by preferably employing relevant application software. The Mini project shall be assessed by the domain subject teachers for ICA.

2) Students shall undergo a field training of total 30 days in two phases including at least 15 days in the winter vacation after T.E. Civil Part I and at least 15 days in summer vacation after T.E. Civil Part-II. They shall submit the field training report of the first phase to the faculty associated with subject Engineering Management- I in their T.E. Part-II. They shall submit field training report of the second phase to concerned 'Project' guides in B.E. Part-I.

3) Internal Continuous Assessment (ICA) shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, syllabus, report presentation etc., as applicable.

4) The batch size for the practical/tutorial is of 15 students. On forming the batches, if the number of remaining students exceeds 7, then a new batch be formed.

5) For Self Learning at T.E. Civil Part II -

A. Student shall select a 'Self Learning Technical Course' from Solapur University, Solapur Technical Course List (Civil Engineering) and appear for its examination, as and when conducted by Solapur University, Solapur. Minimum four assignments for Self Learning Modules at T.E. Part II shall be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department.

**OR**

B. Student with prior approval of the institute shall select and enroll for any 'National Programme on Technology Enhanced Learning (NPTEL)' course from Civil Engineering domain/Interdisciplinary course, with minimum eight weeks duration, complete necessary assignments and appear for certificate examination as per the NPTEL schedule during respective semester.

*More details about NPTEL are available at http://nptel.ac.in*

## LIST OF ELECTIVE SUBJECTS (CV-325)

| T. E. Civil Part-II | |
|---|---|
| **ELECTIVE I** | |
| 1 | Advanced Design of Steel Structures |
| 2 | Industrial Waste Treatment |
| 3 | Water Power Engineering |
| 4 | Advanced Concrete Technology |
| 5 | Reliability Engineering |
| 6 | Finite Element Method |
| 7 | Experimental Stress Analysis |
| 8 | Optimization Techniques |
| 9 | Disaster Management |

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**


NAAC Accredited-2015
'B' Grade (CGPA 2.62)

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

## Syllabus: CIVIL ENGINEERING

## Name of the Course: B.E.- IV (Sem. VII & VIII)

## (Syllabus to be implemented from w.e.f. June 2019)

*w. e. f. Academic Year 2019-20*

## PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR

### Faculty of Science & Technology

### Choice Based Credit System structure of B. E. Civil –I; Semester – VII, W. E.F. 2019-2020

| Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | L | T | P | D | | ISE | ESE | ICA | Total |
| Design of Concrete Structures-I | 3 | 1 | - | - | 4 | 30 | 70 | 25 | **125** |
| Quantity Surveying & Valuation | 3 | - | - | - | 3 | 30 | 70 | - | **100** |
| Earthquake Engg. | 3 | - | - | - | 3 | 30 | 70 | - | **100** |
| Engineering Management- II | 3 | - | - | - | 3 | 30 | 70 | - | **100** |
| Elective - II | 3 | - | - | - | 3 | 30 | 70 | - | **100** |
| **Total** | **15** | **1** | **-** | **-** | **16** | **150** | **350** | **25** | **525** |
| **Laboratory/Drawings:** | | | | | | | **POE** / **OE** | | |
| Quantity Surveying & Valuation | - | - | 4 | - | 2 | - | 50 / - | 50 | **100** |
| Earthquake Engg. | - | - | 2 | - | 1 | - | - / - | 50 | **50** |
| Engineering Management- II | - | - | 2 | - | 1 | - | - / 25 | - | **25** |
| Elective - II | - | - | 2 | - | 1 | - | - / 25 | 25 | **50** |
| Seminar | - | - | 2 | - | 1 | - | - / - | 50 | **50** |
| a) Project work<br>b) Assessment of report on field training-II | -<br>- | -<br>- | 2<br>- | -<br>- | 1<br>1 | -<br>- | -<br>- | -<br>- | 25<br>25 | **25**<br>**25** |
| **Total** | **-** | **-** | **14** | **-** | **8** | **-** | **100** | **225** | **325** |
| **Grand Total** | **15** | **1** | **14** | **-** | **24** | **150** | **450** | **250** | **850** |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

*w. e. f. Academic Year 2019-20*

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**

**Faculty of Science & Technology**

**Choice Based Credit System structure of B. E. Civil –II, Semester – VIII, W. E.F. 2019-2020**

| Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | P | D | | ISE | ESE | | ICA | Total |
| Design of Concrete Structures-II | 4 | - | - | - | 4 | 30 | 70 | | - | **100** |
| Construction Practices and Town Planning | 4 | - | - | - | 4 | 30 | 70 | | 25 | **125** |
| Transportation Engineering-II | 4 | - | - | - | 4 | 30 | 70 | | 25 | **125** |
| Elective - III | 4 | - | - | - | 4 | 30 | 70 | | - | **100** |
| **Total** | **16** | **-** | **-** | **-** | **16** | **120** | **280** | | **50** | **450** |
| **Laboratory/Drawings** | | | | | | | **POE** | **OE** | | |
| Design of Concrete Structures-II | - | - | 2 | - | 1 | - | - | - | 50 | **50** |
| Elective - III | - | - | 2 | - | 1 | - | - | 25 | 25 | **50** |
| Project on R. C. C. Structures | - | - | - | 4 | 2 | - | - | 50 | 50 | **100** |
| Project work | - | - | 6 | - | 3 | - | - | 100 | 100 | **200** |
| **Total** | **-** | **-** | **10** | **4** | **7** | **-** | **175** | | **225** | **400** |
| **Grand Total** | **16** | **-** | **10** | **4** | **23** | **120** | **455** | | **275** | **850** |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

.**Note:**

(1) Project group be of @ 7 students.
(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.
(3) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

*w. e. f. Academic Year 2019-20*

पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ
।। विद्यया संपन्नता ।।

# LIST OF ELECTIVE SUBJECTS

| B. E. Civil Part-I | | B. E. Civil Part-II | |
|---|---|---|---|
| ELECTIVE II | | ELECTIVE III | |
| 1 | Open Channel & River Hydraulics | 1 | Advanced Engg. Geology |
| 2 | Air Pollution & Control | 2 | Ground improvement Techniques |
| 3 | Design of Foundations | 3 | Traffic Engg. & Control |
| 4 | Advanced Design of Concrete Structures | 4 | Infrastructural Engineering |
| 5 | Managerial Techniques | 5 | Project Appraisal |
| 6 | Computer Applications in Civil Engg. | 6 | Solid and Hazardous & Waste Management |
| 7 | Advanced structures | 7 | Dynamics of Structures |
| 8 | Entrepreneurship | 8 | Environmental Management |
| 9 | Remote Sensing and GIS Applications | 9 | Design of Bridges |

*w. e. f. Academic Year 2019-20*


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

## CBCS Syllabus for

## First Year B.Tech. (All Branches)
## w.e.f. Academic Year 2018-19

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year B.Tech. (All Branches)
## WEF 2018-19

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Basic Electrical & Electronics Engineering | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Engineering Mechanics | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 17 | | | 17 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Basic Electrical & Electronics Engineering | | | 2 | 1 | | | 25 | 25 |
| C114 | Engineering Mechanics | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **17** | **1** | **12** | **24** | **350** | **175** | **175** | **700** |
| C118 | Induction Program | *# (Please see note below)* | | | | | | | |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics & Design | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Programming for Problem Solving | 2 | | | 2 | | 25 | | 25 |
| C126 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 15 | | | 15 | 280 | 170 | | 450 |
| C127 | Democracy, Elections and Good Governance | | | | | 30 | | | 30 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE (POE)* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics & Design | | | 4 | 2 | | | 50 | 50 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Programming for Problem Solving | | | 4 | 2 | 50# | | 50 | 100 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 14 | 8 | 50 | | 200 | 250 |
| | **Grand Total** | **15** | **1** | **14** | **23** | **330** | **170** | **200** | **700** |
| C128 | Democracy, Elections and Good Governance | | | | | | | 20 | |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. # - Indicates the subject 'Programming for Problem Solving' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

3. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

4. Democracy, Elections & Good Governance is mandatory course. The marks earned by student with this course shall not be considered for calculation of SGPA/CGPA. However student must complete ICA of 20 marks and End Semester Examination (ESE) of 30 marks (as prescribed by university, time to time) for fulfillment of this course. This course is not considered as a passing head for counting passing heads for ATKT. However, student must pass this subject for award of the degree

5. Student must complete induction program of minimum five days before commencement of the regular academic schedule at the first semester.

# GUIDELINES FOR INDUCTION PROGRAM (C128)

New entrants into an Engineering program come with diverse thoughts, mind set and different social, economical, regional and cultural backgrounds. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

A **Five day** induction program for the new UG entrant students is proposed at the commencement of the first semester. It is expected to complete this induction program before commencement of the regular academic schedule.

Its purpose is to make new entrants comfortable in their new environment, open them up, set a healthy daily routine for them, create bonding amongst the peers as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature.

The Induction Program shall encompass (but not limited to) below activity –

1. Physical Activities
2. Creative Arts
3. Exposure to Universal Human Values
4. Literary Activities
5. Proficiency Modules
6. Lectures by Experts / Eminent Persons
7. Visit to Local Establishments like Hospital / Orphanage
8. Familiarization to Department

Induction Program Course do not have any marks or credits however performance of students for Induction Program is assessed at institute level using below mandatory criteria –

1. Attendance and active participation
2. Report writing

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**


NAAC Accredited-2015
'B' Grade (CGPA 2.62)

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

# Syllabus Structure: B. Tech. (Civil Engineering)

**S.Y. B.Tech (Civil Engineering) w.e.f. Academic Year 2019-20**

**T.Y. B.Tech (Civil Engineering) w.e.f. Academic Year 2020-21**

**Final Year B.Tech (Civil Engineering) w.e.f. Academic Year 2021-22**

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**
**Faculty of Science & Technology**
**Credit System structure of S. Y. B. Tech. Civil Engg. - I, Semester- III, (W.E.F. 2019-2020)**

| Course Code | Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | | ICA | Total |
| CV211 | Concrete Technology, Material Testing & Evaluation | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV212 | Surveying & Geomatics | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV213 | Building Construction & Drawing | 2 | - | - | - | 2 | 30 | 70 | | - | 100 |
| CV214 | Introduction to Fluid mechanics | 3 | - | - | - | 3 | 30 | 70 | | - | 100 |
| CV215 | Engineering Geology | **2** | - | - | - | 2 | 30 | 70 | | - | 100 |
| CV216 | Introduction to Solid Mechanics | 3 | 1 | - | - | 4 | 30 | 70 | | - | 100 |
| CV217 | Energy Science & Engineering | 1 | - | - | - | 1 | 25 | - | | - | 25 |
| | **Total** | **17** | **1** | **_** | **-** | **18** | **205** | **420** | | **-** | **625** |
| | **Laboratory/Drawings** | | | | | | | **POE** | **OE** | | |
| CV211 | Concrete Technology, Material Testing & Evaluation | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| CV212 | Surveying & Geomatics | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| CV213 | Building Construction & Drawing | - | - | - | 2 | 1 | - | - | - | 25 | 25 |
| CV214 | Introduction to Fluid mechanics | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| CV215 | Engineering Geology | - | - | 2 | - | 1 | - | 25 | - | 25 | 50 |
| CV218 | Lab practice | - | - | 2 | - | 1 | - | - | - | 25 | 25 |
| | **Total** | **-** | **-** | **10** | **-** | **6** | **-** | **75** | | **150** | **225** |
| | **Grand Total** | **17** | **1** | **10** | **2** | **24** | **205** | **495** | | **150** | **850** |
| | Environmental Science | **1** | – | – | - | – | – | – | | – | – |

**Abbreviations:** L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

**Note:**

(1) The number of students in a practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**
**Faculty of Science & Technology**

**Credit System structure of S. Y. B. Tech. Civil Engg.-II, Semester – IV, W. E.F. 2019-2020**

| Course Code | Theory Course Name | Hrs./week | | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | D | | ISE | ESE | ICA | Total |
| CV221 | Water Supply Engineering | 3 | - | - | - | 3 | 30 | 70 | - | 100 |
| CV222 | Building Planning & Design | 3 | - | - | - | 3 | 15 | 35 | - | **50** |
| CV223 | Hydraulic Engineering | 3 | - | - | - | 3 | 30 | 70 | - | **100** |
| CV224 | Open Elective-I: ICT for development | 2 | - | - | - | 2 | 50 | - | - | **50** |
| CV225 | Structural Analysis | 3 | - | - | - | 3 | 30 | 70 | 25 | **125** |
| CV226 | Engineering Mathematics-III | 3 | 1 | - | - | 4 | 30 | 70 | 25 | **125** |
| | **Total** | **17** | **1** | **-** | **-** | **18** | **185** | **315** | **50** | **550** |
| | **Laboratory/Drawings:** | | | | | | | **POE** / **OE** | | |
| CV221 | Water Supply Engineering | - | - | 2 | - | 1 | - | - / - | 25 | 25 |
| CV222 | Building Planning & Design | - | - | - | 2 | 1 | - | 75 / - | 50 | **125** |
| CV223 | Hydraulic Engineering | - | - | 2 | - | 1 | - | - / - | 25 | **25** |
| CV224 | Open Elective- I : ICT for development | - | - | 2 | - | 1 | - | - / - | 50 | **50** |
| CV227 | Computer Programming & Numerical Methods | 2 | - | 2 | - | 3 | - | 50 / - | 25 | 75 |
| | **Total** | **2** | **0** | **8** | **2** | **7** | **-** | **125** | **175** | **300** |
| | **Grand Total** | **19** | **1** | **8** | **2** | **25** | **185** | **440** | **225** | **850** |
| | Environmental Science | **1** | – | – | | – | – | – | – | – |

Abbreviations: L- Lectures, P –Practical, T- Tutorial, D- Drawing, ISE -Internal Tests, ESE - University Examination (Theory &/ POE &/Oral examination), ICA- Internal Continuous Assessment.

**Note:**

(1) The number of students in a Practical/Tutorial batch shall be 20. New batch shall be formed if the number of remaining students (after forming batches of 20) exceeds 9.

(2) Term work assessment: Term Work assessment shall be a continuous process based on the performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable.

(3) Student is required to study and pass Environmental Science subject in Second Year of Engineering to become eligible for award of degree.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B. No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131, e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute, ISO 9001:2015 Certified Institute
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Electrical Engineering | | | |
|---|---|---|---|
| Programme Code: 1-3675277161 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1 | F. Y. B.Tech. Electrical Engineering | Yes (CBCS) | 2018-19 |
| 2 | S. Y. B.Tech. Electrical Engineering | Yes (CBCS) | 2019-2020 |

PRINCIPAL
College of Engineering,
PANDHARPUR


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ALL BRANCHES

## CBCS Syllabus for

## First Year B.Tech. (All Branches)
## w.e.f. Academic Year 2018-19

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## CBCS Curriculum for First Year B.Tech. (All Branches)
## WEF 2018-19

- Semester I : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C112 | Engineering Mathematics I | 3 | | | 3 | 70 | 30 | | 100 |
| C113 | Basic Electrical & Electronics Engineering | 4 | | | 4 | 70 | 30 | | 100 |
| C114 | Engineering Mechanics | 3 | | | 3 | 70 | 30 | | 100 |
| C115 | Basic Mechanical Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C116 | Communication Skills | 1 | | | 1 | | 25 | | 25 |
| | Total | 17 | | | 17 | 350 | 175 | | 525 |

- Semester I : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C112 | Engineering Mathematics I | | 1 | | 1 | | | 25 | 25 |
| C113 | Basic Electrical & Electronics Engineering | | | 2 | 1 | | | 25 | 25 |
| C114 | Engineering Mechanics | | | 2 | 1 | | | 25 | 25 |
| C115 | Basic Mechanical Engineering | | | 2 | 1 | | | 25 | 25 |
| C116 | Communication Skills | | | 2 | 1 | | | 25 | 25 |
| C117 | Workshop Practice | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 12 | 7 | | | 175 | 175 |
| | **Grand Total** | **17** | **1** | **12** | **24** | **350** | **175** | **175** | **700** |
| C118 | Induction Program | *# (Please see note below)* | | | | | | | |

- Semester II : Theory Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | 3 | | | 3 | 70 | 30 | | 100 |
| C122 | Engineering Mathematics II | 3 | | | 3 | 70 | 30 | | 100 |
| C123 | Engineering Graphics & Design | 3 | | | 3 | 70 | 30 | | 100 |
| C124 | Basic Civil Engineering | 3 | | | 3 | 70 | 30 | | 100 |
| C125 | Programming for Problem Solving | 2 | | | 2 | | 25 | | 25 |
| C126 | Professional Communication | 1 | | | 1 | | 25 | | 25 |
| | Total | 15 | | | 15 | 280 | 170 | | 450 |
| C127 | Democracy, Elections and Good Governance | | | | | 30 | | | 30 |

- Semester II : Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *FA* | *SA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE (POE)* | *ISE* | *ICA* | |
| C011/ C012 | Engineering Physics / Engineering Chemistry$ | | | 2 | 1 | | | 25 | 25 |
| C122 | Engineering Mathematics II | | 1 | | 1 | | | 25 | 25 |
| C123 | Engineering Graphics & Design | | | 4 | 2 | | | 50 | 50 |
| C124 | Basic Civil Engineering | | | 2 | 1 | | | 25 | 25 |
| C125 | Programming for Problem Solving | | | 4 | 2 | 50# | | 50 | 100 |
| C127 | Professional Communication | | | 2 | 1 | | | 25 | 25 |
| | Total | | 1 | 14 | 8 | 50 | | 200 | 250 |
| | **Grand Total** | **15** | **1** | **14** | **23** | **330** | **170** | **200** | **700** |
| C128 | Democracy, Elections and Good Governance | | | | | | | 20 | |

- Legends used –

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Assessment |

- **Notes-**

1. $ - Indicates approximately half of the total students at FE will enroll under Group A and remaining will enroll under Group B.

   Group A will take up course of Engineering Physics (theory & laboratory) in Semester I and will take up course of Engineering Chemistry (theory & laboratory) in semester II.

   Group B will take up course of Engineering Chemistry (theory & laboratory) in Semester I and will take up course of Engineering Physics (theory & laboratory) in semester II

2. # - Indicates the subject 'Programming for Problem Solving' shall have a University 'Practical and Oral Examination' at the end of the semester assessing student's programming skills.

3. In Semester Evaluation (ISE) marks shall be based upon student's performance in minimum two tests & mid-term written test conducted & evaluated at institute level

   Internal Continuous Assessment Marks (ICA) are calculated based upon student's performance during laboratory sessions / tutorial sessions

4. Democracy, Elections & Good Governance is mandatory course. The marks earned by student with this course shall not be considered for calculation of SGPA/CGPA. However student must complete ICA of 20 marks and End Semester Examination (ESE) of 30 marks (as prescribed by university, time to time) for fulfillment of this course. This course is not considered as a passing head for counting passing heads for ATKT. However, student must pass this subject for award of the degree

5. Student must complete induction program of minimum five days before commencement of the regular academic schedule at the first semester.

# GUIDELINES FOR INDUCTION PROGRAM (C128)

New entrants into an Engineering program come with diverse thoughts, mind set and different social, economical, regional and cultural backgrounds. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

A **Five day** induction program for the new UG entrant students is proposed at the commencement of the first semester. It is expected to complete this induction program before commencement of the regular academic schedule.

Its purpose is to make new entrants comfortable in their new environment, open them up, set a healthy daily routine for them, create bonding amongst the peers as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature.

The Induction Program shall encompass (but not limited to) below activity –

1. Physical Activities
2. Creative Arts
3. Exposure to Universal Human Values
4. Literary Activities
5. Proficiency Modules
6. Lectures by Experts / Eminent Persons
7. Visit to Local Establishments like Hospital / Orphanage
8. Familiarization to Department

Induction Program Course do not have any marks or credits however performance of students for Induction Program is assessed at institute level using below mandatory criteria –

1. Attendance and active participation
2. Report writing

Punyashlok Ahilyadevi Holkar Solapur University, Solapur


NAAC Accredited-2015
'B' Grade (CGPA 2.62)

## Name of the Faculty: Science & Technology

**CHOICE BASED CREDIT SYSTEM**

# Syllabus: Electrical Engineering

## Syllabus Structure

**S.Y. B.Tech (Electrical Engineering) w. e. f. Academic Year 2019-20**
**T.Y. B.Tech (Electrical Engineering) w. e. f. Academic Year 2020-21**
**Final Year B.Tech (Electrical Engineering) w. e. f. Academic Year 2021-22**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur
## Faculty of Engineering & Technology
## S.Y. B Tech. (Electrical Engineering)

*Choice Based Credit System Syllabus Structure of S. Y. B. Tech. Electrical Engineering W.E.F. 2019-2020* **Semester I**

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| | Engineering Mathematics-III | 2 | 1 | | 3 | 30 | 70 | 25 | 125 |
| | Electrical Machines-I | 3 | - | | 3 | 30 | 70 | - | 100 |
| | Electrical Measurement and Instrumentation | 3 | - | | 3 | 30 | 70 | - | 100 |
| | Power System I | 3 | 1 | | 4 | 30 | 70 | 25 | 125 |
| | Electronic Devices and Circuits | 2 | - | | 2 | 30 | 70 | - | 100 |
| | Object Oriented Programming with C++ | 1 | - | | 1 | -- | -- | - | -- |
| **Sub Total** | | **14** | **2** | **-** | **16** | **150** | **350** | **50** | **550** |
| Environmental Science | | 1 | | | | | | | |
| ***Laboratory Course Name*** | | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | OE | |
| | Electrical Machines-I | - | - | 2 | 1 | - | 50 | - | 25 | 75 |
| | Electrical Measurement and Instrumentation | - | - | 2 | 1 | - | 50 | - | 25 | 75 |
| | Electronic Devices and Circuits | - | - | 2 | 1 | - | | - | 25 | 25 |
| | Object Oriented Programming with C++ | - | - | 2 | 1 | - | 50 | - | 25 | 75 |
| **Sub Total** | | **-** | **-** | **8** | **4** | | **150** | | **100** | **250** |
| **Grand Total** | | **14** | **2** | **8** | **20** | **150** | **500** | | **150** | **800** |

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur
## Faculty of Engineering & Technology
## S. Y. B. Tech. (Electrical Engineering)

*Choice Based Credit System Structure of S. Y. B. Tech. Electrical Engineering W.E.F. 2019-2020* **Semester II**

| Course Code | Theory Course Name | Hrs./week | | | Credits | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | | ISE | ESE | ICA | Total |
| | Numerical Methods and Linear Algebra | 2 | 1 | - | 3 | 30 | 70 | 25 | 125 |
| | Electrical Machines-II | 3 | - | - | 3 | 30 | 70 | - | 100 |
| | Power System II | 3 | 1 | - | 4 | 30 | 70 | 25 | 125 |
| | Analog & Digital Integrated circuits | 3 | - | - | 3 | 30 | 70 | - | 100 |
| | Network Analysis | 3 | - | - | 3 | 30 | 70 | - | 100 |
| **Sub Total** | | **14** | **2** | **-** | **16** | **150** | **350** | **50** | **550** |
| Environmental Science | | 1 | - | - | - | - | - | - | 1 |
| ***Laboratory Course Name*** | | | | | | | | | |
| | | | | | | | ESE | | |
| | | | | | | | POE | OE | |
| | Electrical Machines-II | - | - | 2 | 1 | - | 50 | - | 25 | 75 |
| | Network Analysis | - | - | 2 | 1 | - | 50 | - | 25 | 75 |
| | Analog & Digital Integrated circuits | - | - | 2 | 1 | - | - | - | 25 | 75 |
| | Computer Aided Design and Simulation | - | - | 2 | 1 | - | 50 | - | 25 | 75 |
| **Sub Total** | | **-** | **-** | **8** | **4** | **-** | **150** | | **100** | **250** |
| **Grand Total** | | **14** | **2** | **8** | **20** | **150** | **500** | | **150** | **800** |

- *Abbreviations: L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Exam, ESE - End Semester Exam, ICA- Internal Continuous Assessment, ESE - University Examination (Theory &/ POE &/Oral examination)*

**Note –**

- Batch size for the SE practical /tutorial shall be of 20 students. On forming the batches, if the strength of remaining student exceeds 9, then a new batch shall be formed.
- Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & and evaluated on the basis of presentation as well as training report.
- Student shall select one Self Learning Module at T.E. Part I and T.E. Part II each from Technical and Humanities and Social
- Sciences Group with at least one Self Learning Module from the Humanities and Social Sciences Group
- Curriculum for Humanities and Social Sciences Self Learning Modules is common for all under graduate programmes of faculty of Engineering and Technology
- Minimum four assignments for Self-Learning Modules at T.E. Part I and T.E. Part II shall be submitted by the students which shall be evaluated by a Module Coordinator assigned by institute / department
- Project group for T.E.(Electrical) Part II Mini Project shall not be of more than three student
- Project group for B.E. (Electrical) Part I and Part II shall not be of more than FOUR students.
- ICA shall be a continuous process based on student's performance in – class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
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Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref :-

Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Mechanical- Design Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968333 | | | |
| Sr. No. | Class Name | Status of implementation of CBCS / elective course system (Yes/No) | Year of implementation of CBCS / elective course system |
| 1 | M.E. Mechanical- Design Engineering-I | Yes (CBCS & Elective) | 2015-16 |
| 2 | M.E. Mechanical- Design Engineering-II | Yes (CBCS) | 2016-17 |
| 3 | M.Tech. Mechanical-Design Engineering-I | Yes (CBCS & Elective) | 2018-19 |
| 4 | M.Tech. Mechanical-Design Engineering-II | Yes (CBCS & Elective) | 2019-2020 |

COLLEGE OF ENGINEERING PANDHARPUR

B. Ranje

PRINCIPAL,
College of Engineering
PANDHARPUR

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## Structure of M.E.-Mechanical (Design Engineering)

### PART-I

| Sr.No | Name of the Subject | Teaching Scheme | | | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|
| | | Lectures | Tutorials | Practical | Theory Paper Marks | Term Work Marks | Oral Marks | Total Marks |
| 1 | Computational Techniques in Design Engineering | 3 | -- | 2 | 100 | 25 | -- | 125 |
| 2 | Machine Dynamics | 3 | -- | 2 | 100 | * | 25 | 125 |
| 3 | Solid Mechanics | 3 | 1 | -- | 100 | 25 | -- | 125 |
| 4 | Design of Experiments And Research Methodology | 3 | 1 | -- | 100 | * | 25 | 125 |
| 5 | Elective –I | 3 | 1 | -- | 100 | 25 | -- | 125 |
| 6 | Seminar I | -- | -- | 2 | -- | 25 | - | 25 |
| | **Total** | **15** | **3** | **6** | **500** | **100** | **50** | **650** |

### PART-II

| Sr.No | Name of the Subject | Teaching Scheme | | | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|
| | | Lectures | Tutorials | Practical | Theory Paper Marks | Term Work Marks | Oral Marks | Total Marks |
| 1 | Advanced Design Engineering | 3 | 1 | -- | 100 | * | 25 | 125 |
| 2 | Finite Element Analysis | 3 | -- | 2 | 100 | * | 25 | 125 |
| 3 | Experimental Stress Analysis | 3 | -- | 2 | 100 | 25 | -- | 125 |
| 4 | Industrial Product Design | 3 | 1 | -- | 100 | 25 | -- | 125 |
| 5 | Elective II | 3 | 1 | -- | 100 | 25 | -- | 125 |
| 6 | Seminar II | -- | -- | 2 | -- | 25 | - | 25 |
| | **Total** | **15** | **3** | **6** | **500** | **100** | **50** | **650** |

| Elective –I | Elective –II |
|---|---|
| 1) Synthesis & Analysis of Mechanisms and Machines | 1) Industrial Tribology |
| 2) Industrial instrumentation | 2) Engineering Fracture Mechanics |
| 3) Reliability Engineering | 3) Theory and Analysis of Composite Materials |
| 4) Mechanical System Design | 4) Engineering Design Optimization |

- In-plant training report for the training of at least one month undertaken after semester II is to be submitted in semester III.
- The Oral examination is to be conducted by one internal and one external examiner appointed by university.
- *Quality of Term Work of the subject may also be considered during oral examination.

- Seminar I and Seminar II is to be conducted by one internal and one external examiner from outside university area appointed by university.

**PART-III**

| Sr.No | Name of the Subject | Teaching Scheme | | | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|
| | | Lectures | Tutorials | Practical | Theory Paper Marks | Term Work Marks | Oral Marks | Total Marks |
| 1 | **In-plant Training** | -- | -- | 1 | -- | 50 | -- | 50 |
| 2 | **Mini Project (Based on Dissertation)** | -- | -- | 4 | -- | 50 | 50 | 100 |
| | **Total** | **--** | -- | **5** | **--** | **100** | **50** | **150** |

**PART-IV**

| Sr.No | Name of the Subject | Teaching Scheme | | | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|---|
| | | Lectures | Tutorials | Practical | Theory Paper Marks | Term Work Marks | Oral Marks | Total Marks |
| 1 | **Dissertation** | **--** | -- | 5 | -- | 200 | 100 | 300 |
| | **Total** | **--** | **--** | **5** | **--** | **200** | **100** | **300** |

- The Viva-voce on dissertation work is to be arranged only after submission of paper based on dissertation work carried out and acceptance of one paper in International conference or Journal

**SOLAPUR UNIVERSITY, SOLAPUR**
**FACULTY OF ENGINEERING & TECHNOLOGY**
**Structure of M.E.-Mechanical (Design Engineering) Part-II W.E.F 2016-17**

## SEM- III

| Sr No. | Course | Teaching Scheme | | | Examination Scheme | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|
| | | L | P | Credits | AM | Theory | ICA | Oral (ESE) | |
| 1. | Mini Project | -- | -- | 2 | ISE | -- | 50 | 25 | 75 |
| 2 | Lab Practice | -- | 2 | 2 | ISE | -- | 50 | -- | 50 |
| 3 | Dissertation Phase I Synopsis Submission Seminar | -- | 4 | 3 | ISE | -- | 75 | -- | 75 |
| | Dissertation Phase II Term work | -- | -- | 6 | ISE | -- | 200 | | 200 |
| | Dissertation Phase II Progress Seminar presentation | -- | -- | 3 | ESE | -- | 100 | | 100 |
| Total | | -- | 6 | 16 | | -- | -- | -- | 500 |

## SEM- IV

| Sr No. | Course | Teaching Scheme | | | Examination Scheme | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|
| | | L | P | Credits | AM | Theory | ICA | Oral | |
| 1 | Dissertation Phase III Progress Seminar Presentation & Report | -- | 4 | 4 | ISE | -- | 100 | -- | 100 |
| 2 | Dissertation Phase IV Term work | -- | 2 | 6 | ISE | -- | 200 | -- | 200 |
| 3 | Final Presentation & Viva-voce | -- | -- | 6 | ESE | -- | -- | 200 | 200 |
| Total | | -- | 6 | 16 | | -- | 300 | 200 | 500 |

**Mini Project is to be completed in the vacation after Sem-II Examination.**

- **Lab Practice**: Students are expected to learn the contemporary tools/softwares used in industries. It is desirable to use such software for their dissertation purpose. They should learn these with self learning approach. They are supposed to complete 5 assignments based on these tools/ software learnt and report progress to concerned guide weekly.

- **Dissertation Phase I Synopsis submission Seminar (ISE):** This presentation is to be evaluated by the panel of three PG teachers headed by guide at college level.

**SOLAPUR UNIVERSITY, SOLAPUR**

**ME PART-II, SEM-III**

# M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17

## Course: MINI PROJECT

Teaching Scheme: Not Applicable

Practical: Not Applicable

Examination Scheme:

ICA: 50 marks

ESE- Oral : 25 Marks

A Mini Project based on the subjects studied during **Semester-I** and **Semester-II**, shall be undertaken and completed by the candidate during vacation after **Semester-II examination**. The report of this project shall be submitted at the beginning of Semester-III. It will be approved by the guide and endorsed by the Head of Department. It will be assessed as ISE in Semester-III, by the evaluation committee appointed by the Head of the Department.

**SOLAPUR UNIVERSITY, SOLAPUR**
**ME PART-II, SEM-III**
**M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17**

## Course: Lab practice

Teaching Scheme-Not Applicable

Practical: 2 hours a week

Examination Scheme

ICA : 25 Marks

Student should select any contemporary commercial software available in the market pertaining to the stream of specialization. The choice of software tool is preferably to be based on the its application in his/her dissertation work. He/ she shall learn it by self learning approach during the semester.

He/she should solve any five assignments with the help of that software and get assessed by the concerned guide on regular basis.

He/she shall use the learnt software for analysis work or for problem solving work in his/her dissertation work.

**SOLAPUR UNIVERSITY, SOLAPUR**
**ME PART-II, SEM-III**
## M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17

## Course: Dissertation Phase I- Synopsis Submission Seminar

Teaching Scheme-Not Applicable

Practical: 4 hours a week

Examination Scheme

ISE: 25 Marks

ICA : 75 Marks

The synopsis shall include the problem definition, literature survey, and approaches for handling the problem, finalizing the methodology for the dissertation work and design calculations / experimental design etc., resources used, references for the literature survey, Cost estimation and sponsorship letter if any.

Students have to present the seminar based on this synopsis in front of a redressal committee of 3 persons.

The Principal shall appoint this redressal committee comprising of the Guide and two experts to review and approve the synopses before submitting them to the University for approval. This committee shall evaluate work (ISE) and submit the one page report of the suggestions/modifications in the synopsis. The candidates shall submit the synopsis to the University authorities for approval in before the due date.

The reports to be submitted to the university shall be in 8 copies. (1 Copy: Candidate, 1 Copy: Guide, 6 Copies: University)

**SOLAPUR UNIVERSITY, SOLAPUR**
**ME PART-II, SEM-III**
## M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17

## Course: Dissertation Phase II-Term Work

Teaching Scheme-Not Applicable

Practical: Not Applicable

Examination Scheme

ICA: 200 Marks

The term work under this submitted by the student shall include.

1) Work diary maintained by the student and countersigned by his guide.

2) The content of work diary shall reflect the efforts taken by candidates for

(a) Searching the suitable project work.
(b) Visits to different factories or organizations.
(c) Brief report on web sites, journals and various papers referred for project work.
(d) The brief report of feasibility studies carried to come to final conclusion.
(e) Rough sketches.
(f) Design calculations etc. carried by the student.

**ME PART-II, SEM-III**

## M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17

## Course: Dissertation Phase II-Progress Seminar Presentation

Teaching Scheme-Not Applicable

Practical: Not Applicable

Examination Scheme

ICA: 100 Marks

The student has to make a presentation of the preliminary work prescribed the syllabus in front of panel of experts in addition to guide as appointed by head of department.

**SOLAPUR UNIVERSITY, SOLAPUR**
**ME PART-II, SEM-IV**
## M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17

## Course: Dissertation Phase III Progress Seminar Presentation & Report

Teaching Scheme-Not Applicable

Practical: Not Applicable

Examination Scheme

ICA: 100 Marks

The student has to make a presentation of the progress work (analysis/experimental work/testing/validation) in front of panel of 2 experts in addition to guide as appointed by head of department.

**SOLAPUR UNIVERSITY, SOLAPUR**
**ME PART-II, SEM-IV**
# M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17

## Course: Dissertation Phase IV Term work

Teaching Scheme-Not Applicable

Practical: 2 Hrs/Week

Examination Scheme

ICA: 200 Marks

**Preparation of Dissertation Report:** The dissertation to be submitted by the student on topic already approved by university authorities on the basis of synopsis shall be according to the following guide lines.

### Format of dissertation report:

The dissertation work report shall be typed on A4 size bond paper. The total No. of minimum pages shall not be less than 60. Figures, graphs, annexure etc. should be added as per the requirement.
The report should be written in the format as given below-

1. Title sheet
2. Certificate
3. Acknowledgement
4. List of figures, Photographs/Graphs/Tables
5. Abbreviations.
6. Abstract
7. Contents.
8. Text with usual scheme of chapters.
9. Discussion of the results and conclusions
10. Bibliography (the source of illustrative matter be acknowledged clearly at appropriate place as per IEEE/ASME/Elsevier Format).

Annexure: May contain photographs, paper presented in the conference/journals on the dissertation topic

The reports to be submitted to the university shall be hard bound (6 copies).

**SOLAPUR UNIVERSITY, SOLAPUR**
**ME PART-II, SEM-IV**
**M.E.-Mechanical (Design Engineering) Syllabus W.E.F 2016-17**

## Course: Final Presentation and Viva Voce

Teaching Scheme-Not Applicable

Practical: Not Applicable

Examination Scheme

ESE: 200 Marks

Final viva voce (ESE) is to be conducted by the examiner panel appointed by the university. Student has to give a presentation comprising of the dissertation work.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ
।। विद्यया संपन्नता ।।

NAAC Accredited-2015
'B' Grade (CGPA 2.62)

# Name of the Faculty: Science & Technology

## Revised Structure and Syllabus

## CHOICE BASED CREDIT SYSTEM

## Syllabus: Mechanical-Design Engineering

## Name of the Course: M.Tech.- Semester I, II, III & IV

**(Syllabus to be implemented from w.e.f. June 2018-19 & 2019-20)**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

**FACULTY OF SCIENCE & TECHNOLOGY**

**Curriculum for M. Tech.(Mechanical-Design Engineering)**

**Four Semester Course**

**Choice Based Credit System (CBCS) - (WEF 2018-19)**

## Semester I: Theory /Tutorial/ Lab Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *SA* | *FA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| 1 | Advanced Stress Analysis | 3 | - | - | 3 | 70 | 30 | - | 100 |
| 2 | Advanced Vibrations and Acoustics | 3 | - | - | 3 | 70 | 30 | - | 100 |
| 3 | Industrial Instrumentation | 3 | - | - | 3 | 70 | 30 | - | 100 |
| 4 | **Elective- I**<br>1. Computational Techniques in Design Engineering<br>2.Reliability Engineering<br>3.Mechanical System Design<br>4. Computer Aided Design | 3 | - | - | 3 | 70 | 30 | - | 100 |
| 5 | Research Methodology and IPR© | 3 | - | - | 3 | 70 | 30 | - | 100 |
| 6 | Advanced Vibrations and Acoustics Lab | - | - | 2 | 1 | - | - | 50 | 50 |
| 7 | Industrial Instrumentation Lab | - | - | 2 | 1 | - | - | 50 | 50 |
| 8 | Seminar –I | | 2 | | 2 | | | 50 | 50 |
| | **Total** | **15** | **2** | **4** | **19** | **350** | **150** | **150** | **650** |

L Lecture
T Tutorial
P Lab Session

FA Formative Assessment
SA Summative Assessment
ESE End Semester Examination
ISE In Semester Evaluation
ICA Internal Continuous Evaluation

***© - This Course is common for M. Tech. (Civil- Structural Engineering) and M. Tech. (Mechanical-Design Engineering)***

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## FACULTY OF SCIENCE & TECHNOLOGY

**Curriculum for M. Tech. (Mechanical-Design Engineering)**

**Four Semester Course**

**Choice Based Credit System (CBCS)- (WEF 2018-19)**

## Semester II: Theory /Tutorial/ Lab Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *SA* | *FA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| 1 | Finite Element Method | 3 | - | - | 3 | 70 | 30 | | 100 |
| 2 | Advanced Design Engineering | 3 | - | - | 3 | 70 | 30 | | 100 |
| 3 | Industrial Product Design | 3 | - | - | 3 | 70 | 30 | | 100 |
| 4 | **Elective- II**<br>1. Theory and Analysis of Composite Materials<br>2. Engineering Design Optimization<br>3. Industrial Tribology<br>4. Advanced Engineering Materials | 3 | - | - | 3 | 70 | 30 | | 100 |
| 5 | **Elective- III**<br>1. Engineering Fracture Mechanics<br>2. Project Management<br>3. Design for Manufacture and Assembly<br>4. Analysis and Synthesis of Mechanisms and Machine | 3 | - | - | 3 | 70 | 30 | | 100 |
| 6 | Finite Element Method Lab | - | - | 2 | 1 | - | | 50 | 50 |
| 7 | Product Design Lab | - | - | 2 | 1 | - | | 50 | 50 |
| 8 | Seminar-II | - | 2 | - | 2 | - | - | 50 | 50 |
| | **Total** | **15** | **2** | **4** | **19** | **350** | **150** | **150** | **650** |

L Lecture
T Tutorial
P Lab Session

FA Formative Assessment
SA Summative Assessment
ESE End Semester Examination
ISE In Semester Evaluation
ICA Internal Continuous Evaluation

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

पुण्यश्लोक अहिल्यादेवी होळकर
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# Name of the Faculty: Science & Technology

## Revised Structure and Syllabus

## CHOICE BASED CREDIT SYSTEM

## Syllabus: Mechanical-Design Engineering

## Name of the Course: M.Tech.- Semester I, II, III & IV

**(Syllabus to be implemented from w.e.f. June 2018-19 & 2019-20)**

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## FACULTY OF ENGINEERING & TECHNOLOGY

**Curriculum for M. Tech. (Mechanical-Design Engineering)**

**Four Semester Course**

**Choice Based Credit System (CBCS) - (WEF 2019-20)**

## Semester III: Theory /Tutorial/ Lab Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *SA* | *FA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| **Dissertation** | Lab Practices | - | - | 2 | 2 | - | - | 50 | 50 |
| | Open Elective | 3 | - | - | 3 | 70 | 30 | - | 100 |
| | Dissertation Phase I : Synopsis Submission Seminar* | - | - | 2 | 2 | - | 50 | - | 50 |
| | Dissertation Phase II : Progress Seminar | - | - | | 8 | 100 | 200 | - | 300 |
| **Total** | | **3** | **-** | **4** | **15** | **170** | **280** | **50** | **500** |
| **Note:- * indicates student engagement against which faculty contact hour is 2 hours per candidate** | | | | | | | | | |

**L** Lecture
**T** Tutorial
**P** Lab Session

**FA** Formative Assessment
**SA** Summative Assessment
**ESE** End Semester Examination
**ISE** In Semester Evaluation
**ICA** Internal Continuous Evaluation

**List of open Elective**

1. Business Analytics
2. Operation Research
3. Cost Management of Engineering Projects
4. Non conventional Energy

- For all activities related to dissertation Phase I (synopsis submission seminar and progress seminar) student must interact regularly every week with the advisor.
- Synopsis submission seminar shall cover detailed synopsis of the proposed work. Student shall submit Synopsis of the Dissertation Work only after delivering this seminar.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation.
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.
- Lab Practice shall include any of the below activities as recommended by Advisor and student shall submit a report after completion of the activity to Advisor along with other details if any. Software / hardware assignments, learning new software, literature survey, filed work, industrial training etc. related to dissertation work.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7(III) of PG Engineering Ordinance of Solapur University, Solapur.

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## FACULTY OF ENGINEERING & TECHNOLOGY

**Curriculum for M. Tech. (Mechanical-Design Engineering)**
**Four Semester Course**
**Choice Based Credit System (CBCS) - (WEF 2019-20)**

## Semester IV: Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *SA* | *FA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| **Dissertation** | **Dissertation Phase –III** Progress Report presentation and submission | | - | 4 | 3 | - | - | 100 | 100 |
| | **Dissertation Phase –IV** Final presentation and submission of report | - | - | 2 | 6 | - | - | 100 | 100 |
| | Dissertation Viva voice | - | - | - | 6 | 200 | - | - | 200 |
| **Total** | | **-** | **-** | **6** | **15** | **200** | | **200** | **400** |
| **Note:- * indicates student engagement against which faculty contact hour is 3 hours per candidate** | | | | | | | | | |

| | | | |
|---|---|---|---|
| **L** | Lecture | **FA** | Formative Assessment |
| **T** | Tutorial | **SA** | Summative Assessment |
| **P** | Lab Session | **ESE** | End Semester Examination |
| | | **ISE** | In Semester Evaluation |
| | | **ICA** | Internal Continuous Evaluation |

- For all activities related to dissertation Phase III, student must interact regularly every week with the advisor.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation.
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the faculty advisor along with other details if any.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7(III) of PG Engineering Ordinance of Solapur University, Solapur.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P B No 54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune

Ref.:-

Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Computer Science & Engineering (PG) | | | |
|---|---|---|---|
| Programme Code: 1-1408968341 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1 | M.E. Computer Science & Engineering -I | Yes (CBCS & Elective) | 2015-16 |
| 2 | M.E. Computer Science & Engineering -II | Yes (CBCS) | 2016-17 |
| 3 | M.Tech. Computer Science & Engineering -I | Yes (CBCS & Elective) | 2018-19 |
| 4 | M.Tech. Computer Science & Engineering -II | Yes (CBCS & Elective) | 2019-2020 |

COLLEGE OF ENGINEERING PANDHARPUR

PRINCIPAL
College of Engineering
PANDHARPUR


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## COMPUTER SCIENCE AND ENGINEERING

**Structure for**

## M.E. (Computer Science & Engineering) Part-I

Choice Based Credit System Syllabus
(W.e.f. June 2015-16)

# Structure of M. E. (Computer Science & Engineering) Part-II

## Semester – I

| Sr. No. | Name of the Subject | Teaching Scheme | | | Examination Scheme - Credits | | |
|---|---|---|---|---|---|---|---|
| | | L | T | P | Paper | T/W | Total |
| 1 | Theory of computation | 3 | 1 | - | 3 | 1 | 4 |
| 2 | Advanced Operating Systems | 3 | - | 2 | 3 | 1 | 4 |
| 3 | Analysis of Algorithms | 3 | - | 2 | 3 | 1 | 4 |
| 4 | Research Methodology | 3 | 1 | - | 3 | 1 | 4 |
| 5 | Elective-I | 3 | | 2 | 3 | 1 | 4 |
| 6 | Seminar-I | - | - | 2 | - | 2 | 2 |
| | **Total** | **15** | **2** | **8** | **15** | **7** | **22** |

**Elective – I :** 1) Data Mining
2) Mobile Computing
3) Artificial Neural Network and Genetic Algorithms
4) Enterprise Software Development

## Semester – II

| Sr. No. | Name of the Subject | Teaching Scheme | | | Examination Scheme - Credits | | |
|---|---|---|---|---|---|---|---|
| | | L | T | P | Paper | T/W | Total |
| 1 | Internet Routing Algorithm | 3 | -- | 2 | 3 | 1 | 4 |
| 2 | Advanced Database Concepts | 3 | -- | 2 | 3 | 1 | 4 |
| 3 | Parallel Computer Architectures | 3 | 1 | -- | 3 | 1 | 4 |
| 4 | Elective-II | 3 | 1 | -- | 3 | 1 | 4 |
| 5 | Elective-III | 3 | -- | 2 | 3 | 1 | 4 |
| 6 | Seminar-II | -- | -- | 2 | -- | 2 | 2 |
| | **Total** | **15** | **2** | **8** | **15** | **7** | **22** |

**Elective – II:** 1) Grid Computing
2) Real Time Operating System
3) Natural Language Processing
4) Infrastructure Management

**Elective – III:** 1) Web Technology
2) Business Intelligent System
3) Object Oriented Software Engineering and Design Patterns
4) Wireless Ad-hoc Network


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## COMPUTER SCIENCE AND ENGINEERING

**Syllabus Structure and detailed syllabus of**

**M.E. (Computer Science & Engineering) Part II**
**Choice Based Credit System Syllabus**
**w.e.f. Academic Year 2016-17**

## Structure of M. E. (Computer Science & Engineering) Part-II
## w.e.f. Academic Year 2016 - 17

### Semester – III

| Sr. No. | Course | Teaching Scheme | | | | | Evaluation Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Credits | | Scheme | Theory (Marks) | Practical (Marks) | Total |
| 1 | Self learning | -- | -- | -- | 3 | | ISE | 30 | -- | 30 |
| | | | | | | | ESE | 70 | -- | 70 |
| 2 | Lab Practice | -- | -- | 2 | 1 | | ISE | -- | 25 | 25 |
| 3 | **Dissertation Phase –I** : Synopsis Submission Seminar | -- | -- | 6 | 3 | | ISE | -- | 75 | 75 |
| | **Dissertation Phase-II :** Termwork | -- | -- | -- | 3 | | ISE | -- | 100 | 100 |
| | **Dissertation Phase II** Progress Seminar Presentation | -- | -- | -- | 6 | | ESE | -- | 200 | 200 |
| | **Total** | **--** | **--** | **08** | **16** | | | **100** | **400** | **500** |

**Note:**

1. Student shall select one Self Learning course from the following list.
   - i) Big Data
   - ii) Open Source Technology
   - iii) Computer Network Administration

### Semester – IV

| Sr. No. | Course | Teaching Scheme | | | Evaluation Scheme | | |
|---|---|---|---|---|---|---|---|
| | | P | Credits | | Scheme | Practical (Marks) | Total |
| 1 | **Dissertation Phase III** : Progress Seminar Presentation and report | 4 | 4 | | ISE | 100 | 100 |
| 2 | **Dissertation Phase IV**: Term work | 2 | 6 | | ISE | 200 | 200 |
| 3 | Final presentation and viva-voce | - | 6 | | ESE | 200 | 200 |
| | **Total** | **6** | **16** | | | **500** | **500** |

**ISE – IN SEMESTER EVALUATION**
**ESE – END SEMESTER EVALUATION**


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## COMPUTER SCIENCE AND ENGINEERING

**CBCS Syllabus for**

**First Year M.Tech.**
**w.e.f. Academic Year 2018-19**

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## STRUCTURE OF M.Tech. (COMPUTER SCIENCE & ENGINEERING)
### Four Semester Course
### Choice Based Credit System Syllabus wef 2018 -19
### Semester-I

| Sr. No. | Subject | Teaching Scheme | | | | Credits | | | | Evaluation Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Total | Credits (L) | Credits (T) | Credits (P) | Total Credits | Scheme | Theory Marks | ICA- P Marks | ICA-T Marks | Total Marks |
| 1 | Applied Algorithms | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 2 | Theory of Computation | 3 | 1 | - | 4 | 3.0 | 1.0 | | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 3 | Data Mining | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 4 | Machine Learning© | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 5 | Elective I | 3 | 1 | - | 4 | 3.0 | 1.0 | - | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 6 | Seminar- I | - | - | 2 | 2 | - | - | 2.0 | 2.0 | ISE | -- | 50 | -- | 50 |
| | | | | | | | | | | ESE | -- | -- | -- | |
| **Total** | | **15** | **2** | **8** | **25** | **15.0** | **2.0** | **5.0** | **22.0** | | **500** | **125** | **50** | **675** |

***Note :*** *L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*

*© - This Course is common for M.Tech. (Electronics Engineering) and M.Tech. (Computer Science & Engineering)*

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## STRUCTURE OF M.Tech. (COMPUTER SCIENCE & ENGINEERING)
### Four Semester Course
### Choice Based Credit System Syllabus wef 2018-19
### Semester-II

| Sr. No. | Subject | Teaching Scheme | | | | Credits | | | | Evaluation Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Total | Credits (L) | Credits (T) | Credits (P) | Total Credits | Scheme | Theory Marks | ICA- P Marks | ICA-T Marks | Total Marks |
| 1 | Research Methodology & IPR© | 3 | 1 | - | 4 | 3.0 | 1.0 | - | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 2 | Internet of Things | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 3 | Internet Routing Algorithm | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 4 | Elective – II | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 5 | Elective – III | 3 | 1 | - | 4 | 3.0 | 1.0 | - | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 6 | Seminar- II | - | - | 2 | 2 | - | - | 2.0 | 2.0 | ISE | -- | 50 | -- | 50 |
| | | | | | | | | | | ESE | -- | -- | -- | |
| **Total** | | **15** | **2** | **8** | **25** | **15.0** | **2.0** | **5.0** | **22.0** | | **500** | **125** | **50** | **675** |

***Note :*** *L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*
*© - This Course is common for M.Tech. (Electronics Engineering) and M.Tech. (Computer Science & Engineering)*

- Seminar I shall be delivered on a topic related to student's broad area of interest for dissertation work selected in consultation with the advisor after compiling the information from the latest literature. Student shall deliver seminar using modern presentation tools. A hard copy of the report (as per format specified by the department) shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.

- Seminar II shall be delivered on a topic related to student's particular area of interest for dissertation work selected in consultation with the advisor after compiling the information from the latest literature. Student shall deliver seminar using modern presentation tools. A hard copy of the report (as per format specified by the department) shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.

- **List of elective courses for semester I and II -**

| ***Sr. No.*** | ***Elective - I*** | ***Elective – II*** | ***Elective – III*** |
|---|---|---|---|
| 1 | Natural Language Processing | Reinforcement Learning | Wireless Sensor Network |
| 2 | Soft Computing | Advanced Cloud Computing | Infrastructure Management |
| 3 | Computer Vision | High Performance Computing | Real Time Operating System |
| 4 | Object Oriented Software Engineering | Software Defined Network | Advances in Database Systems |

- Courses may be added in the list of Elective I, Elective II and Elective III as and when required.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**


NAAC Accredited-2015
'B' Grade (CGPA 2.62)

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

## Syllabus: COMPUTER SCIENCE ENGINEERING

## Name of the Course: M.Tech.- Semester I, II, III & IV

**(Syllabus to be implemented from w.e.f. 2018-19 & 2019-20)**

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**

**FACULTY OF SCIENCE & TECHNOLOGY**

**M.Tech. (COMPUTER SCIENCE & ENGINEERING)**

**Four Semester Course**

**Choice Based Credit System**

**Semester-III**

| Sr. No. | Subject | Teaching Scheme | | Credits | | | Evaluation Scheme | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | P | Credits (L) | Credits (P) | Total Credits | Scheme | Theory Marks | ICA-P Marks | Total Marks |
| 1 | Self Learning Course | $ | -- | 3.0 | -- | 3.0 | ISE | 30 | -- | 100 |
| | | | | | | | ESE | 70 | -- | |
| 2 | Open Elective Course# | 3 | -- | 3.0 | -- | 3.0 | ISE | 30 | -- | 100 |
| | | | | | | | ESE | 70 | -- | |
| 3 | Dissertation Phase-I : Synopsis Submission Seminar* | | @4 | -- | 3.0 | 3.0 | ISE | -- | 100 | 100 |
| | | | | | | | ESE | -- | | |
| 4 | Dissertation Phase-II : ICA* | -- | -- | -- | 3.0 | 3.0 | ISE | -- | 100 | 100 |
| | | | | | | | ESE | -- | | |
| 5 | Dissertation Phase-II : Progress Seminar* | -- | -- | -- | 3.0 | 3.0 | ISE | -- | | 100 |
| | | | | | | | ESE | -- | 100 | |
| | **Total** | **3** | **4** | **6.0** | **9.0** | **15.0** | | **200** | **300** | **500** |

L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE – End Semester Evaluation, ICA- Internal Continuous Assessment

**Note -**

- **$-** Being a Self Learning Course, student shall prepare for examination as per specified syllabus
- ***-** For all activities related to dissertation Phase I (synopsis submission seminar and progress seminar) student must interact regularly every week with the adviser.
- # - This course is common for all branches of Technology (i.e. for all M.Tech. Programs)
- Synopsis submission seminar shall cover detailed synopsis of the proposed work. Student shall submit synopsis of the dissertation work only after delivering this seminar.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the department before delivering the seminar. A PDF copy of the report must be submitted to the adviser along with other details if any
- @ Indicates contact hours of students for interaction with adviser.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7(III) of PG Engineering Ordinance of P.A.H. Solapur University, Solapur

| **Self Learning Course** | |
|---|---|
| Sr. No. | Subject |
| 1 | Big Data |
| 2 | Computer Network Administration |
| 3 | Open Source Technologies |
| 4 | Usability Engineering |

| **Open Elective Course** | |
|---|---|
| Sr. No. | Subjects |
| 1 | Business Analytics |
| 2 | Operation Research |
| 3 | Cost Management of Engineering Projects |
| 4 | Non Conventional Energy |

- New Self Learning Courses and New Open Elective Courses may be added as and when required

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**
**FACULTY OF SCIENCE & TECHNOLOGY**
**M.Tech. (COMPUTER SCIENCE & ENGINEERING)**
**Four Semester Course**
**Choice Based Credit System**
**Semester-IV**

| Sr. No. | Subject | Teaching Scheme | | Credits | | | Evaluation Scheme | | |
|---|---|---|---|---|---|---|---|---|---|
| | | L | P | Credits (L) | Credits (P) | Total Credits | Scheme | ICA-P Marks | Total Marks |
| 1 | Dissertation Phase-III : Progress Seminar # | -- | @4 | -- | 3.0 | 3.0 | ISE | 100 | 100 |
| 2 | Dissertation Phase-IV : # | -- | @2 | -- | 6.0 | 6.0 | -- | 200 | 200 |
| 3 | Final Submission of the Dissertation and Viva-voce | -- | -- | -- | 6.0 | 6.0 | ESE | 200 | 200 |
| | **Total** | **--** | **6** | **--** | **15.0** | **15.0** | | **500** | **500** |

Note –

- #- For all activities related to dissertation Phase III and Phase IV student must interact regularly every week with the adviser.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation.
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the adviser along with other details if any.
- Student must submit a hard copy of Project Report to the department
- @ indicates contact hours of the student for interaction with the adviser.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7 (III) of PG Engineering Ordinance of P.A.H. Solapur University, Solapur.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District. Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Electronics & Tele-communication Engineering (PG) | | | |
|---|---|---|---|
| Programme Code: 1-1408968335 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1 | M.E. Electronics & Tele-communication Engineering -I | Yes (CBCS & Elective) | 2015-16 |
| 2 | M.E. Electronics & Tele-communication Engineering -II | Yes (CBCS) | 2016-17 |
| 3 | M.Tech. Electronics & Tele-communication Engineering -I | Yes (CBCS & Elective) | 2018-19 |
| 4 | M.Tech. Electronics & Tele-communication Engineering -II | Yes (CBCS & Elective) | 2019-2020 |

COLLEGE OF ENGINEERING PANDHARPUR

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# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ELECTRONICS & TELECOMMUNICATION ENGINEERING

**Syllabus Structure for**

**M.E. (Electronics & Telecommunication Engineering)**

**4 Semester PG Programme**

**To be effective from 2015-16**

# Semester-I

| Sr. No. | Subject | Teaching Scheme | | Examination Scheme | | | | Credits Assigned | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | | Pract/TW | | | |
| | | Theory | Pract | ESE | ISE | ESE | ISE | Theory | Pract |
| 1 | Research Methodology | 3 | 1(T) | 70 | 30 | - | - | 3 | 1(T) |
| 2 | Antenna Theory and Design | 3 | 2 | 70 | 30 | - | 25 | 3 | 1 |
| 3 | Probability & Stochastic Processes | 3 | 2 | 70 | 30 | - | 25 | 3 | 1 |
| 4 | Advanced Network Systems | 3 | 2 | 70 | 30 | - | 25 | 3 | 1 |
| 5 | Elective - I | 3 | 1(T) | 70 | 30 | - | 25 | 3 | 1(T) |
| 6 | Seminar- I | - | 2 | - | - | - | 50 | - | 2 |
| | Total | 15 | 10 | 350 | 150 | - | 150 | 15 | 7 |
| | | **Total=25** | | **Total=650** | | | | **Total=22** | |

**Elective- I :** 1. Optical Networks

2. Speech & Video Processing

3. Advanced VLSI Design

***Note*** –

***Students have to select any one course from Elective -I***

# Semester-II

| Sr. No. | Subject | Teaching Scheme | | Examination Scheme | | | | Credits Assigned | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | | Pract/TW | | | |
| | | Theory | Pract | ESE | ISE | ESE | ISE | Theory | Pract |
| 1 | RF and Microwave Circuit Design | 3 | 2 | 70 | 30 | - | 25 | 3 | 1 |
| 2 | Advanced Signal Processing | 3 | 2 | 70 | 30 | - | 25 | 3 | 1 |
| 3 | Wireless Communication | 3 | 1(T) | 70 | 30 | - | - | 3 | 1(T) |
| 4 | Cryptography & Network Security | 3 | 2 | 70 | 30 | - | 25 | 3 | 1 |
| 5 | Elective - II | 3 | 1(T) | 70 | 30 | - | 25 | 3 | 1(T) |
| 6 | Seminar- II | - | 2 | - | - | - | 50 | - | 2 |
| | Total | 15 | 10 | 350 | 150 | - | 150 | 15 | 7 |
| | | **Total=25** | | **Total=650** | | | | **Total=22** | |

**Elective- II :** 1. Wireless Sensor Network & Optimization.

2. Wavelet Transform & Applications.

3. Advanced Embedded Systems.

***Note*** –

- ***Students have to select any one course from Elective –II***

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ELECTRONICS & TELECOMMUNICATION ENGINEERING

**Syllabus Structure for**

**M.E. (Electronics & Telecommunication Engineering)**

**4 Semester PG Programme**

**To be effective from** 2016-17

Choice Based Credit System Syllabus

# Semester-III

| Sr. No. | Subject | Teaching Scheme | | Examination Scheme | | | | Credits Assigned | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | | Pract/TW | | | |
| | | Theory | Pract | ESE | ISE | ESE | ISE | Theory | Pract |
| 1 | **Self Learning** | $ | - | 70 | 30 | - | - | 3 | - |
| 2 | **Lab Practice** | - | 2 | - | - | - | 25 | - | 1 |
| 3 | **Dissertation Phase-I:** Synopsis Submission Seminar*(Format to designed)(ISE) | - | 4@ | | | - | 75 | - | 3 |
| | **Dissertation Phase-II:** Term work *(ISE) | - | - | | | - | 100 | - | 3 |
| | **Dissertation Phase-II:** Progress Seminar* Presentation(ESE) | - | - | | | 200 | - | - | 6 |
| Total | | - | 6 | 70 | 30 | 200 | 200 | 3 | 13 |
| | | **Total=6** | | **Total=500** | | | | **Total=16** | |



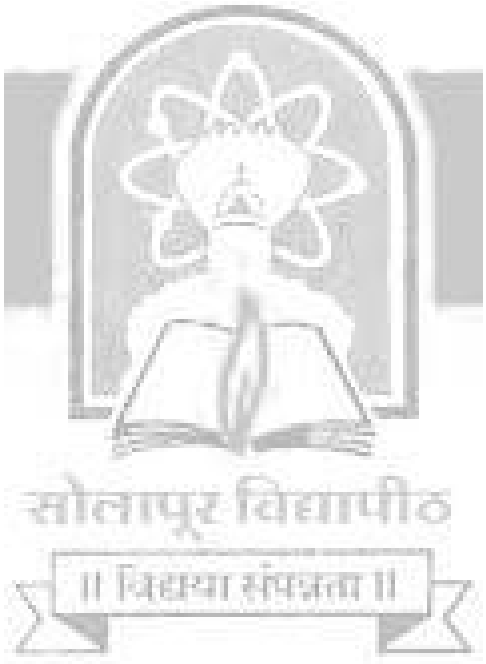
## Self Learning Corses :

1. Internet of Things
2. Software Defined and Cognitive Radio
3. Modeling & Simulation of Communication System

- $-Being a self learning subject ,student shall prepare for examination as per specified syllabus.
- *-For all activities related to desertation phase I (Synopsis submission seminar and progress seminar) student must interact regularly every week with the adviser.\
- Synopsis submission seminar shall cover detailed synopsis of the proposed work.Student shall submit synopsis of desertation work only after delivering this seminar.
- Progress seminar shall be delivered capturing details of the work done by student for desertation.

- Student shall deliver all seminar using modern presentation tools. A hard copy of report shall be submitted to the department before delivering the seminar .A PDF copy of report must be submitted to the adviser along with other details if any.
- Lab practice shall include any of the below activities related to desertation work and recommended by advisor.Student shall submit report after completion of the activity to the advisior –

  Software assignments ,learning new software ,hardware realization ,literature survey,filed work,Industrial traing etc.
- @ Indicates contact hours of student for interaction with advisior.
- Details of mode of assignment of seminar and desertation shall be as specified in 7(III) of PG Engineering ordinance of Solapur University ,Solapur



## Semester-IV

| Sr. No. | Subject | Teaching Scheme | | Examination Scheme | | | | Credits Assigned | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | | Pract/TW | | | |
| | | Theory | Practical | ESE | ISE | ESE | ISE | Theory | Pract |
| 1 | **Dissertation Phase-III:**Progress Seminar #(ISE) Dissertation Phase IV: Term work #(ISE) | - | 4@ | - | - | - | 100 | - | 4 |
| 2 | **Dissertation Phase-IV:**Term Work#(ISE) | - | 2@ | - | - | - | 200 | - | 6 |
| 3 | **Final submission of Dissertation** and Viva-voce(ESE) | - | - | - | - | 200 | - | - | 6 |
| **Total** | | - | | - | - | 200 | 300 | - | 16 |
| | | **Total = 6** | | **Total=500** | | | | **Total=16** | |

- **#-**For all activities related to dissertation phase-II student must interact regularly every week with the advisior .
- Progress seminar shall be delivered capturing details of the work done by student for desertation.
- Student shall deliver all seminar using modern presentation tools. A hard copy of report shall be submitted to the department before delivering the seminar .A PDF copy of report must be submitted to the adviser along with other details if any.
- Student must submit hard copy of project report to the department .
- @ Indicates contact hours of student for interaction with advisior.
- Details of mode of assignment of seminar and desertation shall be as specified in 7(III) of PG Engineering ordinance of Solapur University ,Solapur.


# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ELECTRONICS and TELECOMMUNICATION ENGINEERING

## CBCS Syllabus for

## First Year M. Tech.

## w.e.f. Academic Year 2018-19

# SOLAPUR UNIVERSITY, SOLAPUR
# FACULTY OF ENGINEERING & TECHNOLOGY

## STRUCTURE of M.Tech. (ELECTRONICS and TELECOMMUNICATION ENGINEERING)

**Four Semester Course**

## Choice Based Credit System (CBCS) Syllabus w.e.f. A.Y. 2018 -19

## Semester-I

| *Sr. No.* | *Subject* | *Teaching Scheme* | | | | *Credits* | | | | *Evaluation Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | *Total* | *Credits (L)* | *Credits (T)* | *Credits (P)* | *Total Credits* | *Scheme* | *Theory Marks* | *ICA- P Marks* | *ICA-T Marks* | *Total Marks* |
| 1 | Research Methodology & IPR | 3 | 1 | - | 4 | 3.0 | 1.0 | - | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 2 | Antenna Design and Application | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 3 | Soft Computing Methods | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 4 | Advanced Network System | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 5 | Elective I | 3 | 1 | - | 4 | 3.0 | 1.0 | - | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 6 | Seminar- I | - | - | 2 | 2 | - | - | 2.0 | 2.0 | ISE | -- | 50 | -- | 50 |
| | | | | | | | | | | ESE | -- | -- | -- | |
| **Total** | | **15** | **2** | **8** | **25** | **15.0** | **2.0** | **5.0** | **22.0** | | **500** | **125** | **50** | **675** |

***Note:*** *L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*

# SOLAPUR UNIVERSITY, SOLAPUR
# FACULTY OF ENGINEERING & TECHNOLOGY

## STRUCTURE of M.Tech. (ELECTRONICS and TELECOMMUNICATION ENGINEERING)
### Four Semester Course
### Choice Based Credit System (CBCS) Syllabus w.e.f. A.Y. 2018-19
### Semester-II

| Sr. No. | Subject | Teaching Scheme | | | | Credits | | | | Evaluation Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Total | Credits (L) | Credits (T) | Credits (P) | Total Credits | Scheme | Theory Marks | ICA- P Marks | ICA-T Marks | Total Marks |
| 1 | Advanced Internet of Things | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 2 | RF Circuit Design | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 3 | Artificial Intelligence & Machine Learning | 3 | - | 2 | 5 | 3.0 | - | 1.0 | 4.0 | ISE | 30 | 25 | -- | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 4 | Cryptography and Network Security | 3 | 1 | - | 4 | 3.0 | 1.0 | - | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 5 | Elective – II | 3 | 1 | - | 4 | 3.0 | 1.0 | - | 4.0 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 6 | Seminar- II | - | - | 2 | 2 | - | - | 2.0 | 2.0 | ISE | -- | 50 | -- | 50 |
| | | | | | | | | | | ESE | -- | -- | -- | |
| **Total** | | **15** | **2** | **8** | **25** | **15.0** | **2.0** | **5.0** | **22.0** | | **500** | **125** | **50** | **675** |

***Note :*** *L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*

- Seminar I shall be delivered on a topic related to student's broad area of interest for dissertation work selected in consultation with the advisor after compiling the information from the latest literature. Student shall deliver seminar using modern presentation tools. A hard copy of the report (as per format specified by the department) shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.

- Seminar II shall be delivered on a topic related to student's particular area of interest for dissertation work selected in consultation with the advisor after compiling the information from the latest literature. Student shall deliver seminar using modern presentation tools. A hard copy of the report (as per format specified by the department) shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.

- **List of elective courses for semester I and II -**

| ***Sr.*** | ***Elective - I*** | ***Elective – II*** |
|---|---|---|
| 1. | Biomedical Signal Processing | Communication System Design |
| 2. | Advanced Embedded System | Multimedia Processing |
| 3. | Automotive Electronics | Automation and Industrial Robotics |

- Courses may be added in the list of Elective I and II as and when required

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur


NAAC Accredited-2015
'B' Grade (CGPA 2.62)

## Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

## Syllabus: ELECTRONICS & TELECOMMUNICATION ENGINEERING

## Name of the Course: M.Tech.- Semester I, II, III & IV

## (Syllabus to be implemented from w.e.f. 2018-19 & 2019-20)

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## FACULTY OF SCIENCE & TECHNOLOGY

## STRUCTURE OF M.Tech.(ELECTRONICS and TELECOMMUNICATION ENGINEERING)

### Four Semester Course

### Choice Based Credit System Syllabus

### Semester-III

| *Sr. No.* | *Subject* | *Teaching Scheme* | | *Credits* | | | *Evaluation Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *P* | *Credits (L)* | *Credits (P)* | *Total Credits* | *Scheme* | *Theory Marks* | *ICA Marks* | *Total Marks* |
| 1 | Self Learning Course | $ | - | 3.0 | - | 3.0 | ISE | 30 | -- | 100 |
| | | | | | | | ESE | 70 | | |
| 2 | Open Elective Course# | 3 | | 3.0 | | 3.0 | ISE | 30 | | 100 |
| | | | | | | | ESE | 70 | | |
| 3 | Dissertation Phase I : Synopsis Submission Seminar* | | @4 | | 3.0 | 3.0 | ISE | -- | 100 | 100 |
| | | | | | | | ESE | -- | -- | |
| 4 | Dissertation Phase II : ICA* | | - | | 3.0 | 3.0 | ISE | -- | 100 | 100 |
| | | | | | | | ESE | -- | -- | |
| 5 | Dissertation Phase II Progress Seminar* | | - | | 3.0 | 3.0 | ISE | -- | | 100 |
| | | | | | | | ESE | -- | 100 | |
| **Total** | | **3** | **4** | **6.0** | **9.0** | **15.0** | | **200** | **300** | **500** |

*L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*

**Note -**

- $- Being a Self Learning Course, student shall prepare for examination as per specified syllabus
- *- For all activities related to dissertation Phase I (synopsis submission seminar and progress seminar) student must interact regularly every week with the advisor.

- # - This course is common for all branches of Technology (i.e. for all M.Tech. Programs)

- Synopsis submission seminar shall cover detailed synopsis of the proposed work. Student shall submit synopsis of the dissertation work only after delivering this seminar.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any
- @ Indicates contact hours of students for interaction with advisor.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7(III) of PG Engineering Ordinance of Solapur University, Solapur

**List Self Learning Courses -**

| ***Sr.*** | ***Self Learning Subject*** |
|---|---|
| 1 | Programmable System on Chip (PSoC) |
| 2 | Remote Sensing |
| 3 | Multimedia Network |

**List of Open Elective Courses-**

| ***Sr.*** | ***Self LearningSubject*** |
|---|---|
| 1 | Business Analytics |
| 2 | Operation Research |
| 3 | Cost Management of Engineering Projects |
| 4 | Non conventional Energy |

- New Self Learning Courses and New Open Elective Courses may be added as and when required

# Punyashlok Ahilyadevi Holkar Solapur University, Solapur

## FACULTY OF SCIENCE & TECHNOLOGY

### STRUCTURE OF M.Tech.(ELECTRONICS and TELECOMMUNICATION ENGINEERING)

**Four Semester Course**

### Choice Based Credit System Syllabus

### Semester-IV

| *Sr. No.* | *Subject* | *Teaching Scheme* | | | *Credits* | | | *Evaluation Scheme* | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *P* | *Total* | *Credits (L)* | *Credits (P)* | *Total Credits* | *Scheme* | *ICA Marks* | *Total Marks* |
| 1 | Dissertation Phase III : Progress Seminar # | - | 4@ | 4 | - | 3.0 | 3.0 | ISE | 100 | 100 |
| 2 | Dissertation Phase IV: # | - | 2@ | 2 | - | 6.0 | 6.0 | -- | 200 | 200 |
| 3 | Final Submission of the Dissertation and Viva –Voce | - | - | - | - | 6.0 | 6.0 | ESE | 200 | 200 |
| | **Total** | **-** | **-** | **6** | **--** | **15.0** | **15.0** | **-** | **500** | **500** |

**Note** –

- #- For all activities related to dissertation Phase III & IV student must interact regularly every week with the advisor.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.
- Student must submit a hard copy of Project Report to the department
- @ indicates contact hours of the student for interaction with the advisor
- Details of modes of assessment of seminar and dissertation shall be as specified in 7 (III) of PG Engineering Ordinance of Solapur University, Solapur.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
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Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Civil -Structural Engineering (PG) | | | |
|---|---|---|---|
| Programme Code: 1-1408968343 | | | |
| Sr. No. | Class Name | Status of implementation of CBCS / elective course system (Yes/No) | Year of implementation of CBCS / elective course system |
| 1 | M.E. Civil -Structural Engineering -I | Yes (CBCS & Elective) | 2015-16 |
| 2 | M.E. Civil -Structural Engineering -II | Yes (CBCS) | 2016-17 |
| 3 | M.Tech. Civil -Structural Engineering -I | Yes (CBCS & Elective) | 2018-19 |
| 4 | M.Tech. Civil -Structural Engineering -II | Yes (CBCS & Elective) | 2019-2020 |

COLLEGE OF ENGINEERING PANDHARPUR

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# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## CIVIL ENGINEERING

## Syllabus for

## M.E. (Civil-Structures) Semester III and IV

Choice Based Credit System Syllabus (w.e.f.2015-16)

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY

## STRUCTURE OF M.E. (CIVIL-STRUCTURES)

Choice Based Credit System Syllabus (w.e.f. 2015-16)

**Four Semester Course**

**Semester-I**

| Sr. No | Subject | Teaching/week | | | | Examination Scheme | | | | Credits | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | Pr | Tu | Total | TH | T | OE | Total marks | TH | TW | OE | Total |
| 1 | Theory of Elasticity & Plasticity | 3 | -- | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 2 | Mechanics of | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 3 | Advanced Design of Concrete Structures | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 4 | Dynamics Structures | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 5 | Elective-I | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 6 | Seminar-I | - | - | 1 | 1 | - | 50 | - | 50 | - | 2 | - | 2 |
| | | **15** | - | 6 | **21** | **500** | **175** | - | **675** | **15** | 7 | - | **22** |

Abbreviations: L: Lectures, Pr: Practical, Tu: Tutorial, TH: Theory, TW: Term Work, OE: Oral Exam.

Elective-I: (1) Design of Foundation

(2) Advances in Concrete Composites

(3) Structural Optimization

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY

### STRUCTURE OF M.E. (CIVIL-STRUCTURES)

Choice Based Credit System Syllabus (w.e.f. 2015-16)

**Four Semester Course**

**Semester-II**

| Sr. No | Subject | Teaching/week | | | | Examination Scheme | | | | Credits | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | Pr | Tu | Total | TH | TW | OE | Total marks | TH | TW | OE | Total |
| 7 | Theory of Plates & Shells | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 8 | Finite Element Method | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 9 | Earthquake Engineering | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 10 | Advanced Design of Steel Structures | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 11 | Elective-II | 3 | - | 1 | 4 | 100 | 25 | - | 125 | 3 | 1 | - | 4 |
| 12 | Seminar-II | - | - | 1 | 1 | - | 50 | - | 50 | - | 2 | - | 2 |
| | | 15 | | 6 | 21 | 500 | 175 | | 675 | 15 | 7 | - | 22 |

Abbreviations: L: Lectures, Pr: Practical, Tu: Tutorial, TH: Theory, TW: Term Work, OE: Oral Exam.

Elective II:

(1) Stability of structures

(2) Design of R. C. C. Bridges

(3) Structural reliability

(4) Design of folded plates and shells


# Solapur University, Solapur

## Revised Structure and Syllabus
## (W.E.F. 2012-13)

## For

## M.E. (Civil-STRUCTURES)

## Choice Based Credit System (CBCS) - CGPA

**For M.E. Civil (Struct) - First Year: With effect from- 2015-16**
**For M.E. Civil(Struct) - Second Year: With effect from- 2016-17**

# SOLAPUR UNIVERSITY, SOLAPUR
# FACULTY OF ENGINEERING & TECHNOLOGY
## Curriculum for M.E. Civil-Structures
## Choice Based Credit System (CBCS)-CGPA (WEF 2016-17)

## Semester III: Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *SA* | *FA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| 13 | Lab. Practice | - | - | 1* | 1 | - | - | 25 | 25 |
| 14 | **Dissertation Phase-I** Synopsis Submission Seminar | - | - | 3* | 3 | - | 75 | - | 75 |
| 15 | **Dissertation Phase-II** Term work | - | - | - | 3 | - | 100 | - | 100 |
| 16 | **Dissertation Phase-II** Progress Seminar presentation | - | - | -- | 6 | 200 | - | - | 200 |
| | **Total** | **--** | | **4*** | **13** | **200** | **175** | **25** | **400** |

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Evaluation |

Note: * Indicates contact hours per student.

- For all activities related to dissertation Phase I (synopsis submission seminar and progress seminar) student must interact regularly every week with the advisor.
- Synopsis submission seminar shall cover detailed synopsis of the proposed work. Student shall submit Synopsis of the Dissertation Work only after delivering this seminar.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation.
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.
- Lab Practice shall include any of the below activities as recommended by Advisor and student shall submit a report after completion of the activity to Advisor along with other details if any. Software / hardware assignments, learning new software, literature survey, filed work, industrial training etc. related to dissertation work.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7(III) of PG Engineering Ordinance of Solapur University, Solapur.

# SOLAPUR UNIVERSITY, SOLAPUR
# FACULTY OF ENGINEERING & TECHNOLOGY
## Curriculum for M.E. Civil-Structures
## Choice Based Credit System (CBCS)-CGPA (WEF 2016-17)

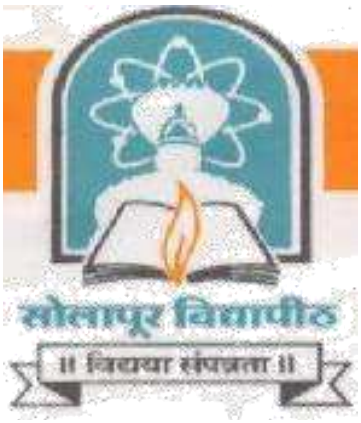
## Semester IV: Laboratory / Tutorial Courses

| *Course Code* | *Name of the Course* | *Engagement Hours* | | | *Credits* | *SA* | *FA* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | | *ESE* | *ISE* | *ICA* | |
| 17 | **Dissertation Phase III**: Progress Seminar presentation and Report | - | - | 5* | 4.0 | - | 100 | - | 100 |
| 18 | **Dissertation Phase-IV** Term work | - | - | - | 6.0 | - | 200 | - | 200 |
| 19 | Final submission of the dissertation and Viva voice | - | - | - | 6.0 | 200 | - | - | 200 |
| | **Total** | **-** | **-** | **5*** | **16.0** | **200** | **300** | **-** | **500** |

| | | | |
|---|---|---|---|
| L | Lecture | FA | Formative Assessment |
| T | Tutorial | SA | Summative Assessment |
| P | Lab Session | ESE | End Semester Examination |
| | | ISE | In Semester Evaluation |
| | | ICA | Internal Continuous Evaluation |

Note: * Indicates contact hours per student

- For all activities related to dissertation Phase III, student must interact regularly every week with the advisor.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation.
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the faculty advisor along with other details if any.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7(III) of PG Engineering Ordinance of Solapur University, Solapur.




# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## M.Tech. CIVIL (STRUCTURAL ENGINEERING)

### Choice Based Credit System Syllabus

### w.e.f. Academic Year 2018-19

**SOLAPUR UNIVERSITY, SOLAPUR**
**FACULTY OF ENGINEERING & TECHNOLOGY**
**STRUCTURE OF M.Tech. CIVIL (STRUCTURAL ENGINEERING)**
**Four Semester Course**
**Choice Based Credit System Syllabus wef 2018 -19**
**Semester-I**

| *Sr. No.* | *Subject* | *Teaching Scheme* | | | | *Credits* | | | | *Evaluation Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | *Total* | *Credits (L)* | *Credits (T)* | *Credits (P)* | *Total Credits* | *Scheme* | *Theory Marks* | *ICA- P Marks* | *ICA-T Marks* | *Total Marks* |
| 1 | Advanced structural analysis | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 2 | Advanced solid Mechanics | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 3 | Structural dynamics | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 4 | Elective- I | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 5 | Research Methodology and IPR© | 3 | - | - | 3 | 3 | - | - | 3 | ISE | 30 | -- | - | 100 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 6 | Structural design Lab | - | | 4 | 4 | - | - | 2 | 2 | ISE | 50 | 50 | -- | 100 |
| | | | | | | | | | | ESE | -- | -- | -- | |
| **Total** | | **15** | **4** | **4** | **23** | **15** | **4** | **2** | **21** | | **550** | **50** | **100** | **700** |

***Note :*** *L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*
*© - This Course is common for M.Tech. (Civil- Structural Engineering) and M.Tech. (Mechanical-Design Engineering)*

**SOLAPUR UNIVERSITY, SOLAPUR**
**FACULTY OF ENGINEERING & TECHNOLOGY**
**STRUCTURE OF M.Tech. CIVIL (STRUCTURAL ENGINEERING)**
**Four Semester Course**
**Choice Based Credit System Syllabus wef 2018-19**
**Semester-II**

| *Sr. No.* | *Subject* | *Teaching Scheme* | | | | *Credits* | | | | *Evaluation Scheme* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *T* | *P* | *Total* | *Credits (L)* | *Credits (T)* | *Credits (P)* | *Total Credits* | *Scheme* | *Theory Marks* | *ICA- P Marks* | *ICA-T Marks* | *Total Marks* |
| 1 | FEM in structural Engineering | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 2 | Theory of plates and shells | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 3 | Seismic design of multistoried buildings | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 4 | Elective – II | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 5 | Elective – III | 3 | 1 | - | 4 | 3 | 1 | - | 4 | ISE | 30 | -- | 25 | 125 |
| | | | | | | | | | | ESE | 70 | -- | -- | |
| 6 | Advanced concrete Lab | - | - | 2 | 2 | - | - | 1 | 1 | ISE | | 25 | -- | 25 |
| | | | | | | | | | | ESE | -- | -- | -- | |
| 7 | Mini project | - | - | 2 | 2 | - | | 2 | 2 | ISE | -- | 50 | -- | 50 |
| | | | | | | | | | | ESE | -- | -- | -- | |
| **Total** | | **15** | **5** | **4** | **24** | **15** | **5** | **3** | **23** | | **500** | **75** | **125** | **700** |

***Note :*** *L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*

- **List of elective courses for semester I and II -**

| *Sr. No.* | *Elective - I* | *Sr. No.* | *Elective – II* | *Sr. No.* | *Elective – III* |
|---|---|---|---|---|---|
| 1 | Advanced Design of Concrete Structures | 1 | Design of Prestressed Concrete Structures | 1 | Theory of Structural Stability |
| 2 | Design of Formwork | 2 | Structural Audits | 2 | Design of RCC Bridges |
| 3 | Advanced Design of Foundation | 3 | Concrete Composites | 3 | Advanced Steel Design |
| 4 | Structural Optimization | 4 | Design of Industrial Structures | 4 | Soil Structure Interaction |

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**


NAAC Accredited-2015
'B' Grade (CGPA 2.62)

# Name of the Faculty: Science & Technology

## CHOICE BASED CREDIT SYSTEM

## Syllabus: CIVIL STRUCTURAL ENGINEERING

## Name of the Course: M.Tech.- Semester I, II, III & IV

**(Syllabus to be implemented from w.e.f. 2018-19 & 2019-20)**

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**
**FACULTY OF SCIENCE & TECHNOLOGY**
**STRUCTURE OF M.Tech. CIVIL (STRUCTURAL ENGINEERING)**
**Four Semester Course**
**Choice Based Credit System Syllabus w.e.f. 2019-20**
**Semester-III**

| *Sr. No.* | *Subject* | *Teaching Scheme* | | | *Credits* | | | *Evaluation Scheme* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *P* | *Total* | *Credits (L)* | *Credits (P)* | *Total Credits* | *Scheme* | *Theory Marks* | *ICA- P Marks* | *Total Marks* |
| 1 | Lab. Practice | - | 4 | 4 | - | 2 | 2 | ISE | -- | 50 | 50 |
| | | | | | | | | ESE | -- | -- | |
| 2 | Open Elective Course# | 3 | - | 3 | 3 | | 3 | ISE | 30 | -- | 100 |
| | | | | | | | | ESE | 70 | -- | |
| 3 | Dissertation Phase I : Synopsis Submission Seminar* | | @4 | 4 | - | 2 | 2 | ISE | -- | 50 | 50 |
| | | | | | | | | ESE | -- | -- | |
| 4 | Dissertation Phase II : ICA* | | | | - | 4 | 4 | ISE | -- | 100 | 100 |
| | | | | | | | | ESE | -- | -- | |
| 5 | Dissertation Phase II Progress Seminar* | | | | - | 4 | 4 | ISE | -- | -- | 100 |
| | | | | | | | | ESE | -- | 100 | |
| **Total** | | **3** | **8** | **11** | **3** | **12** | **15** | | **100** | **300** | **400** |

*L- Lectures, P-Practical, T-Tutorial, ISE- In Semester Evaluation, ESE- End Semester Evaluation, ICA- Internal Continuous Assessment*

**Note –**

- Lab Practice shall include any of the below activities as recommended by Advisor and student shall submit a report after completion of the activity to Advisor along with other details if any. Software / hardware assignments, learning new software, literature survey, filed work, industrial training etc. related to dissertation work.
- *- For all activities related to dissertation Phase I (synopsis submission seminar and progress seminar) student must interact regularly every week with the advisor.
- # - This course is common for all branches of Technology (i.e. for all M.Tech. Programs)
- Synopsis submission seminar shall cover detailed synopsis of the proposed work. Student shall submit synopsis of the dissertation work only after delivering this seminar.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any
- @ Indicates contact hours of students for interaction with advisor.
- Details of modes of assessment of seminar and dissertation shall be as specified in 7(III) of PG Engineering Ordinance of Solapur University, Solapur

- **List of open Elective Courses-**

| ***Sr.*** | ***Subject*** |
|---|---|
| 1 | Business Analytics |
| 2 | Operation Research |
| 3 | Cost Management of Engineering Projects |
| 4 | Non conventional Energy |

- New Open Elective Courses may be added as and when required

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY, SOLAPUR**
**FACULTY OF SCIENCE & TECHNOLOGY**
**STRUCTURE OF M.Tech. CIVIL (STRUCTURAL ENGINEERING)**
**Four Semester Course**
**Choice Based Credit System Syllabus w.e.f. 2019-20**
**Semester-IV**

| *Sr. No.* | *Subject* | *Teaching Scheme* | | | *Credits* | | | *Evaluation Scheme* | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *L* | *P* | *Total* | *Credits (L)* | *Credits (P)* | *Total Credits* | *Scheme* | *ICA- P Marks* | *Total Marks* |
| 1 | Dissertation Phase III : Progress Seminar # | - | 4@ | 4 | - | 3 | 3 | ISE | 100 | 100 |
| 2 | Dissertation Phase IV: Final presentation and submission of report # | - | 2@ | 2 | - | 6 | 6 | -- | 200 | 200 |
| 3 | Dissertation Viva – Voce | - | - | - | - | 6 | 6 | ESE | 200 | 200 |
| **Total** | | **-** | **6** | **6** | **--** | **15** | **15** | **-** | **500** | **500** |

**Note –**

- #- For all activities related to dissertation Phase III & IV student must interact regularly every week with the advisor.
- Progress seminar shall be delivered capturing details of the work done by student for dissertation
- Student shall deliver all seminars using modern presentation tools. A hard copy of the report shall be submitted to the Department before delivering the seminar. A PDF copy of the report must be submitted to the advisor along with other details if any.
- Student must submit a hard copy of Project Report to the department
- @ indicates contact hours of the student for interaction with the advisor
- Details of modes of assessment of seminar and dissertation shall be as specified in 7 (III) of PG Engineering Ordinance of Solapur University, Solapur.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
P.B.No.54, Gopalpur - Ranjani Road, Gopalpur, Pandharpur - 413304, District: Solapur (Maharashtra)
Tel.: (02186) 216063, 9503103757, Toll Free No.: 1800-3000-4131 e-mail.: coe@sveri.ac.in
Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Master of Business Administration (MBA) | | | |
|---|---|---|---|
| Programme Code: 1-1408968337 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1 | Master of Business Administration-I | Yes (CBCS ) | 2015-16 |
| 2 | Master of Business Administration-II | Yes (CBCS & Elective) | 2016-17 |
| 3 | Master of Business Administration-I | Yes (CBCS & Elective) | 2017-18 |
| 4 | Master of Business Administration-II | Yes (CBCS & Elective) | 2018-19 |

COLLEGE OF ENGINEERING PANDHARPUR

B. Ranje

PRINCIPAL,
College of Engineering
PANDHARPUR

# Solapur University, Solapur

# MBA Part-I Syllabus (CBCS) w.e.f. 2015-16

| SEMESTER - I | | | | | | SEMESTER - II | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks | Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks |
| 1 | Perspectives of Management | 4 | 30 | 70 | 100 | 9 | Marketing Management | 4 | 30 | 70 | 100 |
| 2 | Accounting for Management | 4 | 30 | 70 | 100 | 10 | Financial Management | 4 | 30 | 70 | 100 |
| 3 | Managerial Economics | 4 | 30 | 70 | 100 | 11 | Human Resource Management | 4 | 30 | 70 | 100 |
| 4 | Organisational Behaviour | 4 | 30 | 70 | 100 | 12 | Production and Materials Management | 4 | 30 | 70 | 100 |
| 5 | Statistical Methods | 4 | 30 | 70 | 100 | 13 | Economic Environment for Business | 4 | 30 | 70 | 100 |
| 6 | Managerial Communication-I | 4 | 30 | 70 | 100 | 14 | Managerial Communication-II | 4 | 30 | 70 | 100 |
| 7 | Legal Aspects of Business | 4 | 30 | 70 | 100 | 15 | Research Methodology | 4 | 30 | 70 | 100 |
| 8 | IT for Management | 4 | 30 | 70 | 100 | 16 | Operations Management | 4 | 30 | 70 | 100 |

# Solapur University, Solapur

# MBA Part-I Syllabus (CBCS) w.e.f. 2015-16

## MBA Part-I SEM-I (CBCS)

### PAPER I Perspectives of Management

1. Management: Definition, Characteristics, Levels of Management, Process of Management, Contribution made by Frederick Taylor- Scientific management, Henri Fayol – Modern management. Prof. C.K. Pralad -Pyramid concept, Peter Drucker- MBO.
2. Development of Management Theory : Dynamic Engagement Approach -Six different themes in management theory -New organizational environment, Ethics and social responsibility, Globalization and management, Inventing and reinventing organizations, Culture and multiculturalism, Quality.
3. Planning: Definition, Importance, Objectives, Planning process
4 Organising : Definition, Importance, Design of organization structure – concept, Departmentation, Span of management, Forms of organization structure -Functional, flat, Project-amoebic , Matrix etc. Work from home , Outsourcing ,Virtual Organisations. Power and Authority - Concept, Delegation of authority, Centralization and decentralization, Conflict and Co-ordination.
5. Staffing : Staffing as a Management function. Directing – Directing as a function of management, Direction and supervision.
6. Motivation : Concept, Theories of motivation -Maslow theory of human needs, Mc Gregor's theory X & theory Y,William Ouchi- Theory Z and Edwin A. Locke- Goal setting.
7. Leadership: Leadership styles (Autocratic style Democratic style and Laissez-faire style). The managerial grid. Hersey and Blanchard's situational leadership model, Leadership style and the work situation: The Fiedler model, A path-goal approach to leadership.
8. Controlling: Concept, management by exception, steps in controlling, Design of effective control system.

Reference Books


1 Management- By James A.F. Stoner, R. Edward Freeman & Daniel R. Gilbert.
2. Management- Global Perspective By Heinz Welhrich & Horolad.
3. Management By Martin C. Cathrol.
4. International Management: Concepts & Cases – Manab Thakur,
5. Principles of Management – Tripathi P.C. and Reddy
6. Management By Peter Drucker.
7. Management & Organisation By Louis A. Allen.
8. Management Today- Gene Burton & Manb Thakur.
9. Management Principles and Guidelines – Thomas Duening & John Ivancevich –biztantra.
10. Principles of Management – Ramaswamy
11. Principles of Management – Natarajan
12. Principles & Practice of Management – L.M. Prasad

## MBA Part-I SEM-I (CBCS)
## PAPER II - Accounting for Management

1 Financial Accounting: Need for accounting, Internal & External users of accounting information, Accounting concept & conventions.

2 Accounting Process & system: Nature of accounting transactions journal entries & posting of ledger, Cash book and other subsidiary books.

3 Depreciation – Concept, Straight Line Method (SLM) and Written Down Value Method (WDM), Change in method of depreciation

4 Bank Reconciliation Statement

5 Trial Balance & Final Accounts: Rectification of errors, Preparation of trial balance, Final accounts- Trading, Profit-Loss A/c, Balance sheet, Introduction to Computerised Accounting system. Overview of Tally.

6 Cost Accounting: Meaning, objectives, scope, importance & advantages of cost accounting, distinguish between financial & cost accounting.

7 Elements of Cost: Basic concepts- Material, Labour & Overheads. Preparation of Cost Sheet.

8 Inventory Valuation Policy – FIFO, LIFO, Simple average and weighted average methods

Reference books


1 Advance Accountancy : M. C. Shukla & T.S. Grewal
2 Advance accountancy : S.C. Jain & K. L. Narang
3 Financial Accounting : Dr. Guruprasad Murthy
4 Cost and Management Accounting - S.M.Inamdar
5 Management Accounting - Dr. Mahesh Kulkarni
6 Double Entry Book Keeping - T.S.Grewal
7 Principles and Practice of Cost Accounting – Ashish K. Bhattacharya
8 Management Accounting 3rd Ed. - Khan & Jain
9 Theory & Problems in Management & Cost Accounting - Khan & Jain
10 Cost Accounting – Jawahar Lal
11 Management Accounting - Dr. A. P. Rao

## MBA Part-I SEM-I (CBCS)
## PAPER III – Managerial Economics

1 Managerial Economics – Meaning, features, scope and significance of Managerial Economics, Decision Making – factors, importance, Risk in Business Decision, Risk adjustment.

2. Demand analysis, forecasting of demand, Methods, Elasticity of demand. Types and importance.

3. Production Function. - COBB – Douglas production function, Short run and long run production function, least cost combination, laws of return to scale, Cost of production, AC and MC, U shape average cost curve

4. Market structure- Classification, price and output determination in Perfect Competition, Monopoly, Monopolistic Competition, Oligopoly.

5. Pricing Practices – Cost plus pricing. Incremental pricing. Pricing in Capitalism, Communism / Socialism. Dual pricing.

6. Inflation – Types – effects - Need for Government Intervention in Markets. Price Controls. Support Price.

7. Distribution of National Income- Profit, Theories of profit, Cleark, Schumpeter and Knight's theory of profit. Break Even Analysis.

8. Macro Economics – Business cycle – theories – Monetary & Non-Monetary theories, Schumpeter and Hawtray's theory- Monetary and Non-monetary control.

Reference books


1. Managerial Economics – Analysis, Problems and Cases, P.L. Mehta, Sultan Chand Sons, New Delhi.
2. Managerial Economics – Varshney and Maheshwari, Sultan Chand and Sons, New Delhi.
3. Managerial Economics – G.S. Gupta, T M H, New Delhi.
4. Managerial Economics – Mote, Paul and Gupta, T M H, New Delhi.
5. Managerial Economics –Joel Dean, Prentice Hall, USA.
6. Managerial Economics –H L Ahuja, S Chand & Co. New Delhi.
7. Managerial Economics – D.M.Mithani
8. Modern Economics – H.L.Ahuja
9. Managerial Economics – Pererson

## MBA Part-I SEM-I (CBCS)
## PAPER IV – Organisational Behaviour

1. Organisational Behaviour - Definition, levels of OB, Approaches to OB, factors affecting individual behaviour – Environmental factors, Personal Factors.
2. Individual Behaviour - Attitude – Definition, types of attitudes, Cognitive dissonance theory. Learning – Meaning, learning theories – classical & operant conditioning. Reinforcement. Perception – Definition, Perceptual Process, Factors influencing perception.
3. Group Behaviour - Definition and Classification of Groups, Formal and informal groups, why do people join groups, Group dynamics - Group cohesiveness. Stages of group development.
4. Group Decision making & Work teams.– Group decision making process, How do groups make decision – advantages & disadvantages, strategies to improve group decision making. Work Teams – Team Vs Group, Problem Solving Teams, self managed work teams, Cross functional teams, creating effective teams, Virtual teams.
5. Organisational change – Definition, Forces for change – External & Internal forces. Change Process – Unfreezing, changing, Refreezing. Resistance to change – Individual & organisation resistance. Managing resistance to change.
6. Organisational culture – Meaning and Definition, cultural dimensions - Levels, Culture creation, Cultural artifacts, Strategies for sustaining culture, Changing organizational cultural.
7. Organisational Conflict – Meaning , concept, functional and dysfunctional conflicts, Levels of conflicts, intra personal and interpersonal conflicts, conflict process.
8. Stress Management – Meaning, Importance, Understanding Stress and its consequences, potential sources of stress, Factors causing stress, Managing Stress.

Reference Books.


1. Organisational Behaviour – P.G.Aquinas ( Excel books ).
2. Organisational Behaviour – Robbins (Prentice Hall )
3. Organisational Behaviour – Dr.S.S.Khanka ( S.Chand)
4. Organisational Behaviour – K. Ashwathappa ( Himalaya Publishing).
5. Organisational Behaviour – Suja R.Nair ( Himalaya Publishing).
6. Organisational Behaviour – Luthans ( McGraw Hill)
7. Organisational Behaviour – Rao & Narayana ( Konark publishers)

## MBA Part-I SEM-I (CBCS)
## PAPER V – Statistical Methods

1. Arranging data to convey meaning - Tables, Graphs and Frequency Distribution, Application in the business
2. Measures of Central Tendency – Arithmetic Mean, Median, Mode –Characteristics. Graphical methods for Median and mode, Missing frequency problems
3. Measures of Dispersion – Introduction, Range, Quartile, Mean Deviation, Standard Deviation, combined standard deviation Coefficient of Variation. Problems
4. Correlation – Karl Pearson coefficient & Rank correlation – Partial & Multiple Correlation, Problems
5. Regression - . Simple and Multiple Regression (Linear) – Equation and prediction-Problems
6. Association of Attributes: Yule's coefficient & Coefficient of colligation.
7. Probability – Concepts, Permutations and Combinations Bayes' theorem.-Problems
8. Probability Distributions - Binomial, Poisson and Normal-Applications and Problems

Reference books:


1. Fundamentals of Statistics - S.P.Gupta
2. Complete Business Statistics – Aczel, Amir D
3. Business Statistics – S.C Gupta and Indra Gupta
4. Comprehensive Statistical Methods – P.N.Arora, Sumeet Arora, S.Arora
5. Statistical and Quantitative Methods – By Ranjit Chitale
6. Business Statistics for Contemporary Decision Making – Black
7. Statistics Concepts and Applications – Pal N.
8. Statistical Techniques in Business and Economics – Lind Douglas
9. Statistics and Quantitative Techniques – Dhaygude M.S.
10. Mathematics and Statistics for Management – Mittal
11. Statistics for Management - Levin

## MBA Part-I SEM-I (CBCS)
## PAPER VI - Managerial Communication – I

1. Managerial communication: Meaning – importance - process of communication – channels of communication - forms of communication - 7'c of effective communication - Barriers to communication - Guidelines to overcome communication barriers.
2. Feedback in communication: kinds of feedback – effective feedback – effects of feedback – improving feedback
3. Oral communication : Fundamentals of oral communication Listening: Hearing and Listening – process of listening - what is active listening? – Types of listening – Barriers to Listening – 10 thumb rules of good listening – Effective listening strategies
4 Public speaking: Preparation of speech - Techniques of effective speech – Commemorative speeches (Elocution, Extempore, Welcome speech, Vote of thanks, Commemorative Occasions, Condolence) – Speakers appearance and personality - Practicing delivery of the speech
5. Non verbal communication: Body language, Gestures, Postures, Facial expressions, Dress code, Para language, Significance of space.
6 Meeting: purpose – golden rules of meeting – preparation for a meeting – Conduct of meeting – Following up the meeting - failures in meeting - Notices - Agenda and Minutes.
7 Reports: purpose - process - types of reports - format of report - structure of formal report - writing strategies.
8 Communication Technology: Email, Teleconferencing, Videoconferencing, groupware, fax, intranet, internet, Fliers, Brochures, Newsletters, SMS, Blogs, Twitter, Websites, Social media, Communicating, Datacasting, Facebook.

Internal Assessment

1. Public speaking exercise in the form of debate, elocution, extempore and prepared speeches.
2. Students will submit one business documents of each of the following:
   - Minutes of meeting
   - Report

Reference books


1. Foundations of Business Communication- An Integrative Approach- Dona J Young (McGraw Hill Publication).
2. Business Communication : Concepts, Cases And Applications - P D Chaturvedi, Mukesh Chaturvedi (Pearson Education)
3. Basic Business Communication – Lesikar, Flatley (TMH)
4. Effective Technical Communication - M Ashraf Rizvi (TMH)
5. Business Communication Today– Bovee Thill Schatzman (Pearson &1. Education)
6. Business Communication Today - Bovee, Thill & Schatzam (Pearson)
7. Business Skills - Nageshwar Rao and Rajendra Das (HPH)
8. Managerial Communication – Rai (HPH)
9. Business Communication – Building Critical Skills – Kitty O Locker, Stephen K Kaczmarek (Tata McGraw Hill)
10. Communication – C S Rayudu (HPH)
11. Business Communication - Pradhan H, Pradhan N S (HPH)
12. Integrated Business Communication – In a Global Market Place - Bonnye E S, Marilyn S S, Laurence S (Wiley Publication, India)
13. Business Communication - Asha Kaul (Eastern Economy Ed.)
14. Effective Business Communication – Murphy
15. Professional Communication - Konera

## MBA Part-I SEM-I (CBCS)
## PAPER VII – Legal Aspects of Business

1. Administration of law & legal system in India.- Introduction to legal aspects of Business in general.
2. Indian Contract Act (1872):
   a) Definition (Sec.2)
   b) Essential elements of a valid contract.
   c) Competency to enter in contracts (Sec. 11 & 12).
   d) Consent – Free consent, Coercion, undue influence, fraud, mis-representation, mistake (sec 13-23).
   e) Void Agreement (sec 24-30)
   f) Consequences of breach of contract (sec73-75).
3. Companies Act :
   a) Definition & characteristics of a company.
   b) Company distinguished from partnership.
   c) Kinds of Companies.
   d) Provisions relating to incorporation & Memorandum of Association , Articles of Association , Prospectus.
4. Companies Act:
   a) Capital Structure, Shares & Debentures
   b) Management & administration
   c) Meetings & proceedings
   d) Directors, Boards powers & restrictions thereon.
   e) Prevention of oppression & mis-management.
   f) Winding up.
5. Negotiable Instrument Act 1881
   a) Characteristics of negotiable instrument
   b) Promissory Notes, Bill of Exchange & Cheque.
   c) Negotiation (sec 46to 60)
   d) Special rules of evidence.(sec118 to 122)
   e) Crossing of cheque & dishonor of cheque (sec138 to 142)
6. Consumer Protection Act 1986.
   a) Definition of Defect, consumer dispute, deficiency, goods manufacturer, restrictive trade practices, service, unfair trade practices
   b) Central Consumer protection council, State Consumer protection council.
   c) Consumer Dispute Redressal Forum & provisions relating to the same.
   d) Drafting of consumer complaint.
7. Industrial Dispute Act 1947
   a) Definition of Industry, Industrial dispute (Bangalore water supply v/s A. Rajjappa AIR 1978 SC 548) Lay off, Lock out, retrenchment, wages & workmen.
   b) Provisions relating to strikes & lockouts
   c) Unfair practices on the part of the employers, trade unions of employees & workmen.
8. Information Technology Act 2000: Existing Privacy Protection, IT Laws and Security

Reference books


1. Bare Acts- Govt. or Private publication
2. Indian contract Act- Mulla
3. Business Law- Gulshan Kapoor
4. Commercial Law including company & industry law- Sen and Mitra
5. Elements of Merchantile Law- N.D. Kapoor
6. Indian Companies Act- Ramayya.
7. Information Technology Act 2000

## MBA Part-I SEM-I (CBCS)
## Paper VIII – IT For Management

1. Introduction to IT and Computers: - Concept of Data and Information, Concept of Information Technology, IT application in Management. Basic Computer Organization, Hardware: CPU, RAM, ROM, Storage Devices, Input/output Devices, Software: Types of software.
2. Introduction to Internet: Definition, Brief History, Email, World Wide Web, Internet Service Providers, Use of Internet for Business
3. Software and Data Management: System Software, Application Software, Programming Software, DBMS: Introduction, Functions and Advantages of DBMS and RDBMS.
4. Information System Development: Computers in Management, Operational Information Systems in Business, Information System Software, Information needs at different organization levels, Major types of information system in organization and relationship between them, Contribution of information systems to pursue competitive strategies, Building Information System- Overview of system development life cycle Role of data in Information System.
5. Information Systems Resource Management: Computer System Management, Managing Information Resources, Computer Security, Crime and Ethics
6. E–Commerce - Concept, Types and Applications of E-Commerce, E-market, M-Commerce.
7. ERP- Definition, basic features, Benefits, Modules, Implementation of ERP, Introduction to SAP 8.Application Software Packages-

   MS-Word- Overview: Page Setup, Margins, Tabs, Header and Footer, Saving Document.

   Formatting the Text, Adding Columns, Tables, Mail merge

   MS-Excel- Overview, Working with spreadsheet, Formatting Cells, Formulas and Functions: Arithmetic Functions, Text Functions and Financial Functions, Graphs, Conditional Formatting, Sorting and Filtering Data, Micro

   MS PowerPoint- Overview, Working with themes, Charts, Graphics and Tables, Animation: Using Animation for entry, exit, motion and emphasis, Custom Animation, Transition of Slide

Reference books


1. Computer Today- Suresh K. Basandra- Galgotia Publications Pvt. Ltd.
2. Computer Fundamentals- P.K.Sinha and Priti Sinha-BPB Publication
3. MIS Text & Cases-Jawadekar W.S.-TMGH Publication
4. MIS: Managing the digital firm-Laudan K.C.-TMGH Publication
5. E-Commerce-David Whitley TMGH Publication
6. E-Business & E-Commerce David Chaffey Pearson
7. Internet for Everyone Leon Alexis Leon Teenworld
8. Learning guide to The Internet Allen Douglas. W. BPB Publication
9. Enterprise Resource Planning: ERP Milind M.Oka Everest Publication House
10. Enterprise Resource Planning Leon Alexis TMGH Publication
11. Enterprise Resource Planning: Concept and Practice Vinod Kumar Garg and N.K. Venkitakrishna PHI
13. Comdex Computer Kit: Windows XP with Office 2007 Vikas Gupta dreamtech press

# MBA Part-I SEM-II (CBCS)

## Paper IX - Marketing Management

1. **Marketing Concepts** - Introduction to marketing – Nature and scope of marketing, the core concepts of marketing. Concept of marketing (Production concept, Product concept, Selling concept, Marketing concept, Societal concept) Holistic Marketing Orientation.

2. **Marketing Environment:** Analyzing needs and trends Macro Environment - Political, Economic, Socio-cultural and Technical Environment – PEST analysis. Micro Environment – Industry & Competition. Concept of Market Potential & Market Share

3. **Understanding Consumer.** Definition, Determinants of consumer behavior, importance, factors influencing consumer behavior, buying process, Concept of customer relationship management. Brand Equity- Definition, Concept, Building brand Equity.

4. **Market segmentation:** Definition, Need & Benefits. Bases for market segmentation of consumer goods, industrial goods and services. Segment, Niche & Local Marketing, Effective segmentation criteria, Evaluating & Selecting Target Markets, Concept of Target Market and Concept of positioning – Value Proposition & USP.

5. **Marketing Mix:** Definition of each of the Four P's. Components of each P. (Product-Product and product life cycle, New Product development process ,Price – Pricing methods, objectives, price determination policies, Promotion – Concept, Promotional Mix Place - Importance ,Channel design and decision, Channel Management decision) Extended 7Ps for services. Significance in the competitive environment.

6. **E-Commerce marketing practices.** Concepts – Retailing, Wholesaling and Logistics, Network Marketing, Direct marketing -Impact of technology & Internet on distribution.

7. **Marketing Research** – Meaning and Nature of Marketing Research. Applications, Limitations Threats to Marketing Research, Evaluation and Control of Marketing Research, Process of marketing research.

8. **Marketing Ethics and social responsibility -** Citizen and public actions to regulate marketing (Consumerism, environmentalism, public actions to regulate marketing,)

**Reference Books**


1. Principles of Marketing 12th Edition - Philip Kotler and Gary Armstrong
2. Fundamentals of Marketing - Stanton
3. Marketing Management – Rajan Saxena
4. Marketing Management - V.S.Ramaswamy and S.Namakumari
5. Analysis for Marketing Planning – Donald Lehmann & Rusell Winer, 6th ed.
6. Case Studies in Marketing - Indian context - R.Srinivas
7. Principles and Practice of Marketing –Philip Kotler
8. Marketing Management – S.A. Sherlekar
9 Marketing Management – A South Asian Perspective –Philip Kotler, Kevin Lane Keller, Abraham Koshy, Mithileshwar Jha.
10.Marketing Research – G.C. Beri
11 Marketing Research – Suja Nair – Himalaya

# MBA Part-I SEM-II (CBCS)

## Paper – X Financial Management

1. **Financial Management – An overview** – Finance and related Disciplines, Meaning, objectives and scope of Financial Management, Organisation of Finance Function, Emerging Role of Finance Manager in India.

2. **Financial Statement Analysis-** Techniques : Trend Analysis, Common Size Statements, Ratio Analysis : Classification of Ratios –Liquidity Ratios, Leverage Ratios, Activity Ratios, Profitability Ratios, computation and comparison of ratios.

3. **Cost-Volume-Profit Analysis -** Assumptions, Contribution, PV Ratio, BEP, Margin of Safety, Angle of Incidence, Simple problems on decision making, limitations of CVP Analysis

4. **Capital Budgeting** – Nature and Significance, Time value of money, Returns- Profit and Cash Flow Approach, - Methods of evaluating Capital Budgeting – Pay Back Period, ARR, NPV and Profitability Index.

5. **Working Capital Management** – Nature of Working Capital Management, Need for working capital – operating cycle, estimation of working capital requirement, financing of working capital

6. **Long Term Financing -** Equity shares, Debentures/Bonds, Term Loans, Hybrid Financing- Preference shares, Convertible Debentures, Venture Capital, Introduction to GDR/ADR.

7. **Dividend Policy-** Determinants, Procedural and Legal formalities involved in the payment of dividend, Bonus Shares, Stock Split.

8. **International Financial Management –** Similarities and differences between Domestic and International Financial Management, Reasons for going Global, Foreign Exchange Markets, Foreign Exchange Dealings

**Reference books**


1. Financial Management – I.M.Pandey
2. Financial Management – Khan & Jain
3. Financial Management – Prasanna Chandra
4. Financial Management – N.M.Wechlekar
5. Financial Management – S.C.Kuchal
6. Financial Management & Policy – R.M.Shrivastava
7. Financial Management – S.M. Inamdar
8. Financial Management- P.V. Kulkarni
9. Financial Management – G. Sudarsana Reddy
10. Financial Management - Bhalla.
11. Financial Management & Policy - R.M.Srivastav

# MBA Part-I SEM-II (CBCS)

## Paper –XI Human Resource Management

1. **Human resource management**: Concepts, objectives, Scope, Difference between P.M & H.R.M. Functions – Managerial and operative functions, Significance of HRM.

2. **Job analysis & design**: Concepts & uses to Job analysis, Job description and job specification. Preparation to job description and job specification, Flexible job environment. Concept of job design, Methods of design.

3. **Job Evaluation**: Meaning, Objectives. Methods to job evaluation, Advantages & problems to job evaluation.

4. **Recruitment & Selection**: Recruitment – Definition, Objectives, factors affecting recruitment and sources of recruitment, Traditional and modern sources. Selection- definition, Selection procedure, Concepts to Induction and placements.

5. **Training and Performance appraisal**: Objectives, Need of training, Steps in training, Training methods – On the job and Off the job. Concept to PA, Methods to appraisals – Traditional and Modern methods.

6. **Compensation Management**: Components of Remuneration, Factors affecting wage and salary levels, Types of wages, Concepts to Incentives and fringe benefits.

7. **Career planning & development**: Concepts to career, career planning and succession planning. Career anchors and Career stages.

8. **Recent Trends in HRM**: Human resource Audit & Accounting Research, Employees for lease, Moon Lighting by employees, Dual career groups, Flextime and Flex work, Virtual organisation – Concepts, Types, Advantages and disadvantages.

**Reference books**


1. Human Resource Management – Gary Dessler.(Pearson)
2. Human Resource Management – S.S.Khanka ( S.Chand & Co.)
3. Human Resource Management – V.S.P.Rao ( Excel books)
4. Human Resource Management – Stephen Robbins.( PHI)
5. Essential of Human Resource Management – P.Subha Rao ( HPH)
6. Human Resource Management & Personnel Mgt. – Aswathappa ( TataMcgraw Hill)

# MBA Part-I SEM-II (CBCS)

## Paper – XII Production and Materials Management

1. **The Production Function** – Nature & scope, activities, interface with other functional areas like Marketing, Purchasing, Finance, Personnel, Maintenance, R & D, concept of productivity.

2. **Types of Production Systems** – Intermittent and continuous, job, batch, mass and flow production systems, assembly lines balancing, Plant Layout – Product, process, fixed position and combination layouts. Flow lines cellular layout, U- shaped cells, workstation.

3. **Production Planning & Control** – Objectives, various functions of PP & C, Elements of scheduling, Master scheduling, priority planning, facility loading, sequencing problem of scheduling. Production control activities, various control techniques.

4. **Quality Control** – Quality control, importance, inspection, Introduction to total quality management, cost of quality.

5. **Maintenance -** Objectives, types of maintenance, breakdown and preventive maintenance

6. **Material Management Concept** – Primary and secondary objectives, its importance in present context, scope and activities of materials management and organization.
   **Stores Functions**- Storage equipment's, material handling in stores & stores layout.

7. **Inventory Management** – Type of inventory management systems, Fixed Order quantity and periodic review system, selective control of inventory – ABC Analysis, VED Analysis.

8. **Emerging Manufacturing Trends:** Just in time, Flexible manufacturing system, lean manufacturing system, supply chain management, Network analysis with PERT/CPM.

**Reference books**


1. Operation management – Buffa
2. Operation management – Worth
3. Operation management – Chunawala, Patel.
4. Production and Operations management- R. Panneerselvam, Eastern Economy Edition
5. Operations Management and Control – Dr. Biswaji Banerjee
6. Production and Operations Management – S.N.Chary
7. Production and Operations Management – K.Aswathappa, K.Sridhar Bhat
8. Handbook of Materials Management – P.Gopalakrishnan

# MBA Part-I SEM-II (CBCS)

## Paper XIII Economic Environment for Business

1. **Environment** - Concept, composition and importance in Indian Economy, Major problems of Indian Economy, Economic planning - 10th five year plan.

2. **Agricultural Development** – Role of Agriculture in Indian Economy, Agricultural Marketing, Price policy, support price, agricultural labour, water management, food security.

3. **Industrial Development** – Industrial Growth, Role and problems of small scale and large scale industries. Public, private sector, Industrial sickness, industrial policy since 1991. Liberalisation, Privatisation and Globalisation Implementation and effects on Indian Economy.

4. RBI and Monetary Policy, Reforms in Banking sector, Core Banking.

5. **International Trade**- composition, foreign Exchange spot rate, market rate. Rupee convertibility.

6. **Balance of Payment**- problems, disequilibrium in the BOP methods to correct adverse Balance of payment - Devaluation WTO and India.

7. **International Environment** – Need and policy of Government of India towards foreign capital - MNCs – Role - Drawbacks – FEMA.

8. **International institutions** – IMF, Problems of International liquidity solutions, IBRD, EEC, SAARC.

**Reference books**


1. India's Economic Future – V.V. Bhanoji Rao
2. Liberalisation and Globalisation of Indian Economy – K.R. Gupta
3. Indian Economy – Ruddar Datt and K.P.M Sundharam
4. Indian Economy – S.K. Mishra and V.K. Puri
5. Indian Economy – A.N. Agarwal
6. International Economics – D.M. Mithan
7. Business Environment – Francis Cherunilum
8. International Economics – Krugman F.R.
9. Economic Environment of Business – S.K.Misra

# MBA Part-I SEM-II (CBCS)

## Paper XIV Managerial Communication II

1. **Employment Communication- Presentation**: Role of Business Presentation – Advantages and disadvantages of Oral Presentation – Process of making a business presentation – Planning the presentation – Organizing the Presentation – Video Presentation - Visual aids for Business Presentation – Audience handouts – Developing visual aids – Practicing the presentation – Delivering the presentation

2. **Managerial Writing** : Purpose of writing, clarity in writing, principles of effective writing **Memorandum** : meaning – letters v/s memo – characteristics of effective memos - form and structure of memo

3. **Business Letters** : form and structure, style and tone - Routine letter (Inquiry letter, letters placing orders, complaint, Claim and adjustment letters) – Sales letter – Banking correspondence – circular – agency correspondence – quotation – acknowledge execution – collection letters

   **Job related communication**: Biodata – Curriculum Vitae – Resume - Writing resume – Job Application Letters - Covering letter, Placement – Campus, Consultancy firms, Job Portals.

4. **Group Discussions**: Nature of group discussion – Characteristics of successful group discussion – Strategies – techniques for individual contribution

5. **Job Interviews** : Interview process – Characteristic of Job Interview – Types of interviews-Pre interview techniques - Interview Questions – Answering Strategies – Frequently asked interview questions – Projecting a positive image – Alternative Interview Formats

6. **Etiquettes:** Etiquettes in social as well as office settings – Email Etiquettes – Telephone Etiquettes

7. **Media Communication** : Press conference – Press release - Internet press release – Video Conferencing .

8. **Business Communication and the Global Context** : Introduction – concept of culture – Direct and Indirect communication styles - problems of cultural differences – Views and Practices concerning factors of human relationships – Problems of Language

**List of Assignment**

1. Students will present to a group from the following ides:
- Multimedia based presentation
- Appearing for mock interview
- Group discussion on current affairs/ business issues

**Reference books**

1. Foundations of Business Communication- An Integrative Approach- Dona J Young (McGraw Hill Publication).
2. Business Communication : Concepts, Cases And Applications - P D Chaturvedi, Mukesh Chaturvedi (Pearson Education)
3. Basic Business Communication – Lesikar, Flatley (TMH)
4. Effective Technical Communication - M Ashraf Rizvi (TMH)
5. Business Communication Today– Bovee Thill Schatzman (Pearson &1. Education)
6. Business Communication Today - Bovee, Thill & Schatzam (Pearson)
7. Business Skills - Nageshwar Rao and Rajendra Das (HPH)
8. Managerial Communication – Rai (HPH)
9. Business Communication – Building Critical Skills – Kitty O Locker, Stephen K Kaczmarek (Tata McGraw Hill)
10. Communication – C S Rayudu (HPH)
11. Business Communication - Pradhan H, Pradhan N S (HPH)
12. Integrated Business Communication – In a Global Market Place - Bonnye E S, Marilyn S S, Laurence S (Wiley Publication, India)
13. Business Communication - Asha Kaul (Eastern Economy Ed.)
14. Effective Business Communication – Murphy
15. Professional Communication - Konera

# MBA Part-I SEM-II (CBCS)

## Paper XV Research Methodology

1. **Foundations of Research:** Meaning, Objectives, Motivation, Utility. Application of Research in Business Decisions. Research Process. Qualitative research – Quantitative Research, -Uses and applications.

2. **Problem Identification & Formulation** – Management Question – Research Question – Investigation Question –, Concept of Independent & Dependent variables, Hypothesis – Qualities of a good Hypothesis –Null Hypothesis & Alternative Hypothesis. Hypothesis Testing Process & Importance.

3. **Research Design**: Concept and Importance - Features of a good research design –Types of Research Designs- Exploratory Research Design ,Descriptive Research Designs; Experimental Design:-Concepts importance and types.

4. **Measurement:** Concept of measurement– what is measured? Problems in measurement in management research - Characteristics of Sound measurement -Validity and Reliability. Levels of measurement - Nominal, Ordinal, Interval, Ratio.

5. **Attitude Scaling Techniques:** Concept of Scale – Rating Scales viz. Likert Scales, Semantic Differential Scales, Constant Sum Scales, Graphic Rating Scales – Ranking Scales – Paired Comparison & Forced Ranking.

6. **Types of Data:** Secondary Data - Definition, Sources, Characteristics. Primary Data - Definition, Advantages and disadvantages over secondary data, Observation method, Questionnaire Construction, Personal Interviews, Telephonic Interview, Mail Survey, Email/Internet survey.

7. **Sampling:** Census Vs Sampling**,** Concepts of Statistical Population, Sample, Sampling Frame, Sampling Error, Sample Size, Non Response. Characteristics of a good sample. Probability Sample – Simple Random Sample, Systematic Sample, Stratified Random Sample & Multi-stage sampling. Non Probability Sample – Judgment, Convenience, Quota & Snowballing methods. Determining size of the sample - Practical considerations in sampling and sample size.

8. **Data Analysis, Interpretation and Report Writing:** Data Preparation – Univariate analysis (frequency tables, bar charts, pie charts, percentages), Bivariate analysis – Cross tabulations and Chi-square test including testing hypothesis of association, Layout of a Research Report

**Reference books**


1. Business Research Methods - Donald Cooper & Pamela Schindler, TMGH, 9th edition.
2. Business Research Methods – Alan Bryman & Emma Bell, Oxford University Press.
3 Research Methodology - C.R.Kothari
4. Research Methodology – Aditham Bhujanga Rao
5. Research Methodology -. R Panneerselvam
6 Business Research Methods, William G Zikmund,
7.Business Research Methodology, J K Sachdeva.
8.Research Methodology for Researchers in Commerce and Management - Rajeswari K, Jayalaskshmi M, Palaneeswari T.
9. Research Methodology - Bhandarkar and Wilkonson
10. Research Methodology - Sadhu and Singh

# MBA Part-I SEM-II (CBCS)

## Paper XVI Operations Management

1. **Introduction to OR** – Concepts, Phases of OR, Application potential to diverse Problems in business & industry, scope &limitations.

2. **Linear Programming** – Formulation. Graphical solution, Maximization and minimization problems.

3. **Transportation** – Applications ,North-west corner method , Least cost method, Vogel's Approximation method, Maximization and minimization problems, Unbalanced problems, MODI Method

4. **Assignment Problems** – Hungerian method for minimization, Maximization problems, Unbalanced problems, Problems with restrictions.

5. **Queuing Theory** - Single Server ( M/M/I , Infinite, FIFO) and Multi Server (M/M/C , Infinite, FIFO)-Problems

6. **Markov Chains & simulation techniques**. Short term and steady state market share, Monte Carlo Simulation method

7. **Games Theory** - 2x2 zero sum game with dominance - Pure Strategy and Mixed Strategy

8. **Decision Theory -** Decision making under risk (EMV criteria), EVPI,VPI and Decision making under uncertainty- Laplace, Hurwicz Alpha criteria, Maximin, minimax criteria, Minimax Regret Criteria.

**Reference books**


1. Quantitative Techniques Vol. 1 and 2 - L.C.Jhamb
2. Statistics and Quantitative Techniques - M.G.Dhaygude
3. Quantitative Techniques - N.D.Vohra
4. Operation Research- An Introduction- Taha.
5. Operation Research for management- Shenoy, Srivastav.
6. Operation Research –P.K. Gupta &D.S. Hira.
7. Principles of Operation Research- Harvey- M Wagner.
8. Production and Operations Management – S.N.Chary
9. Operations Management – Krajewski, Ritzman, Malhotra
10. Modern Operations Management – Buffa
11. Operations Management Control – Banerjee
12. Operations Management – Chase

# Solapur University, Solapur

# MBA Part II Syllabus (CBCS) w.e.f. 2016-17

| SEMESTER – III | | | | | | SEMESTER – IV | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks | Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks |
| 17 | Corporate Planning & Strategic Mgt | 4 | 30 | 70 | 100 | 25 | Entrepreneurial Development & Project Mgt. | 4 | 30 | 70 | 100 |
| 18 | Management Accounting | 4 | 30 | 70 | 100 | 26 | Excellence in Management | 4 | 30 | 70 | 100 |
| 19 | Business Ethics | 4 | 30 | 70 | 100 | 27 | Elective-I Paper-III | 4 | 30 | 70 | 100 |
| 20 | Elective-I Paper-I | 4 | 30 | 70 | 100 | 28 | Elective-I Paper-IV | 4 | 30 | 70 | 100 |
| 21 | Elective-I Paper-II | 4 | 30 | 70 | 100 | 29 | Elective-I Paper-V | 4 | 30 | 70 | 100 |
| 22 | Elective-II Paper-I | 4 | 30 | 70 | 100 | 30 | Elective-II Paper-III | 4 | 30 | 70 | 100 |
| 23 | Elective-II Paper-II | 4 | 30 | 70 | 100 | 31 | Elective-II Paper-IV | 4 | 30 | 70 | 100 |
| 24 | Project Report & Viva | - | 50 | 50 | 100 | 32 | Elective-II Paper-V | 4 | 30 | 70 | 100 |

# Solapur University, Solapur

# MBA Syllabus (CBCS) w.e.f. 2016-17

## MBA Part-II SEM. III (CBCS)

### Paper XVII

Corporate Planning and Strategic Management

1. Concept of strategy: a) Defining strategy b) Levels at which strategy operates c) Strategic Decision Making and Approaches to Strategic Decision making d) Mission and Purpose, Objectives and Goals e) Strategic Business Units f) Corporate Planning Process

2. Environment Analysis and Diagnosis : a) Concept of Environment and its components b) Environment scanning and appraisal c) organizational appraisal d) Strategic advantage analysis and diagnosis e) SWOT analysis

3. Strategy Formulation and Choice of Alternatives : a) Strategies – Modernization, Diversification, Integration, Merger, Take-over and Joint Venture strategies, Turnaround – divestment and Liquidation strategies b)Process of Strategic Choice – Industry, competitor and SWOT analysis; Synergy and Dysergy, GAP Analysis; Porter's Five forces Model of competition; Mckinsey's 7's framework; GE-9 Cell Model, Bostan's Consultancy Model c) Distinctive competitiveness; d) Selection of matrix e) Factors affecting Strategic Choice – Cost, Leadership, Differentiation focus, value chain analysis, bench-marking, service blue printing.

4. Strategy Implementation :a) Inter-relationship between formulation and implementation; b) Issues in strategy implementation, Resource Allocation, Budgets, Organization structure c) Matching structure and strategy d) Behavioral Issues – Leadership styles, Corporate culture and values power e) Social Responsibilities – Ethics, Building capable organization; f) Functional Issues – Financial, Marketing, Operations and Personnel Plans and Policies

5. Strategy and Structure: Structural Considerations, Structure for strategies, Organizational design and change. Organisational structure & controls, Strategic Entrepreneurship, Strategic Leadership.

6. Strategy Evaluation: Importance, Symptoms of malfunctioning of strategy, Overview of strategic evaluation, strategic control, techniques of strategic evaluation and control, Operational Control.

7. Strategies for competing in globalizing markets, New Business Models and Strategic for Internet Economy. International Strategies.

8. Tailoring strategy to fit specific industry and company situation, strategy and competitive advantage in diversified agencies, Evaluating the strategies of diversified agencies. Corporate and Multi-Business Strategy.

9.

Books Recommended:


1. Managing Business Enterprise : Strategies, Structures and Systems – S.K. Bhattacharya and N.Venkatraman – VHP
2. Business Policy – Kaxmi Azhar – Tata McGraw Hill
3. Strategic Management 12th edition - Thompson and Strickland – TataMcgraw Hill
4. Strategic Management – David Fred R. – PHI
5. Implementing Strategic Management – H.Igor Ansoff – PHI
6. Strategic Management in Action – Coulter Mary K. – PHI
7. Cases in Strategic Management – S.B.Budhiraj and M.B.Athreya – TataMcGraw Hill.
8. The Competitive Advantage of Nations - Macmillian
9. Strategic Management – R.Srinivasan.
10 Strategic Managementn – Alpna Trehan ( Dreamtech Press) 11.Strategic Management – Allen C. Amason ( Routledge) 12. Strategic Management – Ireland-Hoskisson-Hill(Cengage)

# MBA Part-II SEM. III (CBCS)

## Paper–XVIII

## Management Accounting

1. Management Accounting:
   Concept, Objectives & Functions, Distinctions between Financial Accounting and Cost Accounting, Cost Accounting and Management Accounting.

2. Management Control System:
   Meaning of Management Control System, Elements of Management Control System. Boundries of Management Control Systems.
   Management Control System in various Organisations:
   a. Service Organisation
   b. Financial Organisation
   c. Health Care Organisation.
   d. Non Profit Organisation.
   Reasons for variation in management control system of different organisations.

3. Budget and Budgetary Control:
   Meaning of Budget and Budgetary Control, Advantages and Limitations of Budgetary Control System. Concept of Zero Based Budgeting and Master Budget. Functional Budgets. Types of Functional Budget:
   a. Flexible Budget – Meaning, Importance of Flexible Budget, Problems
   b. Cash Budget - Meaning, Importance of Cash Budget, Problems
   c. Production Budget - - Meaning, Importance of Production Budget, Problems
   d. Sales Budget - - Meaning, Importance of Sales Budget, Problems

4. Standard Costing and Variance Analysis:
   Meaning of Standard, Definition of Standard Costing, Need of setting standard. Concept of Variance, Types of Variances: Material Variances – Meaning, Importance, Problems
   a. Labour Variances – Meaning, Importance, Problems
   b. Variable Overhead Variances – Meaning, Importance, Problems
   c. Fixed Overhead Variances – Meaning, Importance, Problems

5. Cost Volume Profit Analysis:
   Meaning of Cost Volume Profit Analysis,- Advanced problems, Key/Limiting Factor, Decision making problems with one or two limiting factors. Innovative approach to Internal Cost- Profit Analysis.

6. Activity Based Costing:
   Meaning, Objectives, Difference between Traditional Costing and Activity Based Costing, Important Factor for selecting the cost divers, Problems on ABC.

7. Reporting to Management:
   Objectives of Reporting, Reporting needs at different levels on management, Types of Reports, Modes of Reports.

8. Introduction to Audit:
   Meaning of Audit, Objectives of Auditing, Types of Audit.
   a. Financial Audit
   b. Internal Audit
   c. Cost Audit
   d. Management Audit

   Difference in above Audit.

Books Recommended:


1. Management Accounting – Horngreen, Sundem, Stratton – PHI- Latest Edition
2. Management Control System – Robert N. Anthony & Vijay Govindrajan
3. Cost Accounting – Jawahar Lal and Seema Srivastav – Mc Graw Hills Co.
4. Cost & Management Accounting – M.N. Arora – Himalaya Publishing House.
5. Management Accounting – M.P. Pandilkumar – Excel Books
6. Management and Cost accounting – Colin Drury.
7. Theory and Problems of Management and Cost Accounting – M.Y. Khan and P.K. Jain – Tata Mcgraw Hill Publication Co. Ltd.
8. Strategic Financial Management – Dr.G.P.Jakhotiya ( Vikas Publishing)

# MBA Part-II SEM. III (CBCS)

Paper-XVIII

## Business Ethics

1. Introduction to Business Ethics: an understanding of ethics, definition of ethics and business ethics, nature and need for business ethics, factor affecting business ethics, principles of business ethics,
2. Values, beliefs and standards: Introduction of values, characteristics of values, importance of values, business values, corporate values. Relationship of values, norms, belief and standard
3. Ethics and work place: concept, personal values and organizational rules, ethics and decision making, ethical dilemma.
4. Making decisions in Business Ethics – what is an Ethical decision, Models of ethical decision making, Individual influences on ethical decision making, situational influences on decision making.
5. Business and Society: Changing concepts and objectives of Business, Responsive Management, Corporate Social policy, Management by Values, Social responsibility and profitability, Forces inducing Social Responsibility. Social responsibilities of Business Organization.
6. Basic Framework of Normative Ethics,: Ethics and Decision Making, Ethical Aspects Corporate Policy, Morality and Rationality in Organisation, Moral Relationship between Individual and Organisation. Making Moral Decisions. Conflict between personal values and organizational goals. Corporate culture,
7. Corporate Governance: Meaning, Importance, prerequisites, regulatory and voluntary actions, corporate disclosure, Corporate Governance in India.
8. Ethics in General Management, Ethics and HRM, Ethics and Marketing, Business Ethics and Media, Ethics in Finance and Accounting, Ethical dilemma faced by financial managers, Ethical implications of Technology. Ethics and Information Technology.
9. 8 Business ethics and Environment Management: Basics of Environment, Environment pollution, Ozone Depletion, Global Climate change, Air Pollution, Water Pollution, Waste Management. Environmental Regulations – WTO environmental provisions, Environmental Regulation in India, Environment Protection, Ethics of Multinational Business

Books Recommended


1 Business Ethics- Andrew Crane & Dirk Matten.

2. Perspectives in Business Ethics- Laura Hartman-Mcgraw Hill

3 Business Environment - Francis Cherunilam, Himalaya

4 Business Ethics – C.S.V.Murthy.

5 Management Policy and Strategic Management, R.M.Srivastava

6 Perspectice Management by V.P.Michael,

7 Business Ethics – Dr.A.K.Gavai (Himalaya Publishing House)

8 Business Ethics – An Indian Perspective – Prof.(Col.)P.S.Bajaj, Dr.Raj Agrawal

9. Business Ethics- Text and Cases- C.S. V Murthy (Himalaya Publishing House)

10. Ethics in Business Management- Concept and Cases: R. P. Banerjee (Himalaya Publishing House)

# MBA Part-II SEM. III (CBCS)

## GROUP A : MARKETING MANAGEMENT PAPER-I
## PRODUCT & BRAND MANAGEMENT

Unit I

Product Levels, Product Hierarchy, Product Classification, Product Life Cycle , Product Mix decisions, Product Line decision - strategic decision involving adding or pruning product lines, product portfolio decisions, BCG matrix and its applications.

Unit II

Product planning, new product development process, Innovation and Creativity, product testing, product placement & commercialization, conducting financial cost benefit analysis. Product Packaging, Labeling, Functions and Importance of Packaging, Factors affecting packaging decisions, warranties and Guarantees

Unit III

Branding, Need for Branding, Benefits of branding; Brand attributes, Significance of branding to consumers & firms, selecting brand names, Brand Life Cycle, Brand Positioning, Branding decisions, Family vs. individual Branding, Multiple branding, Co-branding, e-branding. Branding Ingredients, Basics of Ingredient Branding, Success stories of Ingredient Branding.

Unit IV

Brand Equity: Meaning, Customer Based Brand Equity(CBBE), Sources, Steps in Building Brands, Measuring Brand Equity- Quantitative Techniques & Quantitative Techniques, Comparative methods-Brand based comparisons, Marketing based comparisons-Conjoint Analysis, Holistic methods.

Unit V

Employing the Brand building process- Brand visioning, the importance of organizational culture on Brands, Setting Brand objectives, Auditing the Brand sphere. Synthesising the nature of Brand, Implementing and resourcing Brand. Brand evaluation.

Unit VI

Brand Management- Strategic Brand Management Process, Steps in Brand Management Process, Brand Ambassadors, Brand as a Personality, Brand Rejuvenation, Brand Success strategies, Brand Resilience, Building global brands, Branding failures, Internal Branding.

Unit VII

Brand Strategies: Brand Extension- Meaning, Types, Needs, Advantages & Disadvantages of Brand Extension, Brand leveraging, Brand-Product matrix, Brand hierarchy decision-Consumer's Evaluation of Brand Extensions & Opportunities

Unit VIII

Brand Personality- Meaning & Definition, Types of Brand personalities, Elements of Brand personality, Brand Image, Sources of Brand Image, Brand Image Building, Brand Image for Established and New Products, Brand Repositioning.

Suggested Readings:


1. Product Management in India: Ramanuj Mujumdar, 2/e, Prentice-Hall India Pvt. Ltd. Product Management: Chunawalla
2. Product Management: Lehmann DR; Russel S. Winner
3. Strategic Brand Management, Building Measuring & Managing Brand Equity – 2/e Pearson Education – Kevin Lane Keller
4. Brand Management -The Indian Context – Y.L.R Moorthi – Vikas Publication. Brand Management, Tapan Panda, 2/e, Excel Publication
5. Brand Management- Harsh V. Verma, 2/e, Excel Books
6. Brand Management- Text and Cases- U. C. Mathur, Macmillan, 1/e
7. From Brand Vision to Brand Evaluation – Leslie de Chefnatony ( Routledge) Ingredient Branding – Philop Kotler & Waldemar Pfoertsch ( Springer)

# MBA Part-II SEM. III (CBCS)

## GROUP A : MARKETING MANAGEMENT PAPER-II
## SALES AND STRATEGIC MARKETING

**Sales management**

1. Introduction to Sales Management: Concept, Nature, Role of Sales Management in Marketing, Salesmanship, Specific Characteristics of a successful salesman, The Evolving Face of Personal Selling
2. Sales Forecasting: Concept of Forecasting, Sales Forecasting methods, Quantitative and Qualitative methods.
3. Sales Organization: Need for Sales Organizations, their structure, Sales Managers Functions and responsibilities, Planning for major customers and sales Budget.
4. Personal Selling Process and Approaches: Personal Selling and Relationship Management - Selling to individuals & Institutions, Basics, Sales leads, Planning sales calls - Types of calls, – Building long term partnership by selling – Sales presentations, tools for personal selling, Sales Aids – Use of technology in sales effective selling techniques
5. Managing Sales Force : Sales Force Objectives, Sales Force Size,

   Sales Training – Company, products, industry, market trend, customer and technology training Motivation to sales force – sales meeting, sales contest, compensation and incentives. Evaluation of Sales Performance – Sales record and reporting, Value added selling Strategic Marketing
6. Marketing Strategy Overview and Analysis -

   Objectives, Market-led strategic management. , Identification of attractive markets, Industry/business analysis and sustaining competitive advantage. Porter's three generic competitive strategies, competitive advantages and its pivotal role in strategic marketing planning.
7. Offensive and defensive competitive strategies - Build strategies - Hold strategies - Market niche strategies - Harvesting strategies - Divestment/deletion
8. Recent trends in Marketing-

   Virtual Marketing- Concept of e-Business and e- markets ( including B2C, B2B and C2C), motivation for shopping on the net-attributes of online shopping. Promotional strategies for social websites. Ambush marketing, Green Marketing, Affiliate Marketing and Contextual marketing.

Books Recommended:-


1. Sales Management - Richard Rstill, Edward W. Cundiff
2. Strategies for selling-Gerald A.Michaelson
3. Sales Management Handbook – Forsyth Patrick
4. Marketing Strategy - Boyd Walker, Mullins Larrech, TMGH
5. Strategic Marketing Management - David Aaker
6. Value added selling-Tom Reilly
7. Building a Winning Sales Team – Gini Graham & Scott
8. Professional Sales Management – Anderson, Hair and Bush
9. Motivation and Job Satisfaction – M. D. Pestonjee
10. Sales Management – Thomas
11. International Marketing – Robert Reed……..
12. Industrial Marketing – Hichard M. Hill
13. Strategic Marketing Planning – Colin Gilligan & Richard M.S.Wilson( Routledge)

# MBA Part-II SEM. III (CBCS)

## Group B- Financial Management -Paper I

## INDIAN FINANCIAL SYSTEM

1. Introduction to IFS- System –Overview of the Indian Financial System Post independence period, Pre and Post 1991 period, developments in last five years. Components of the formal financial system, Organisational structure of the Indian Financial System.
2. Capital Market – A ) Primary Market - Public Issue, Right Issue and Private Placement. Steps in Public Issue, Role of various agencies in public issue-Merchant Bankers, Underwriters, Brokers, Bankers to the Issue, Registrar to the Issue. Promotional agencies. Concept of Book Building.
3) Capital Market - B ) Secondary Market – Constituents of Secondary Market – Brokers, Sub Brokers, Depository, Custodians, Stock Exchange : Definition, Overview of Stock Exchanges in India, Trading on stock exchanges, Order types, cash/margin trading, Rolling Settlement, Role of Clearing House, Introduction to E-Trading. Introduction to Derivatives on stock exchanges, BSE Sensitive Index and Nifty.
4) Accessing international capital market- Various instruments in the market. Introduction to NASDAQ, New York SE. Tokyo SE, Shenghai SE .
5) Money Market - Concept of money market, money market Instruments and its features Money Market Intermediaries. Banking – Management of Bank Funds, Concept of Core Banking, NPA, Securitisation, Innovations in E-Banking. Parameters for evaluation of Banks. NBFC- Major functions of NBFC.
6) Insurance – Life Insurance and General Insurance. Pension Funds.

a) Major schemes of Life Insurance – Endowment, Term, Pension and ULIP schemes.
b) Major schemes of General Insurance and its features.
c) Background of Pension Funds – Pension Fund Management, Pension Fund participation in Financial Markets.

7) Mutual Fund –History, Concept and role of MF, Fund structure and constituents, Schemes of MF – Open ended and Close ended , Growth, Balance and Debt schemes. Concept of SIP, STP, SWP, NAV. Overview of MF industry at present.
8) Regulators, SEBI, RBI and IRDA – Establishment, structure and Functions. Critical evaluation of the working of these regulators.

Books Recommended


1. Financial Institutions and Markets- Bhole
2 Indian Financial System- Khan M.Y.
3 Financial Markets and Servies- E.Gorden and K.Natarajan
4 Indian Financial System – Bharati V.Pathak
5 Indian Financial System – H.R.Machiraju
6 Indian Financial System – Dr.G.Ramesh Babu
7. Financial Markets and Institutions – Jeff Madure(Cengage)

# MBA Part-II SEM. III (CBCS)

## Group B- Financial Management -Paper II

## STRATEGIC FINANCIAL MANAGEMENT

1. Introduction to Strategic Financial Management.- meaning of SFM, evaluation of cost and benefits, reasons for managing business financially, strategy and strategist, 9-s model of SFM.s
2. Cost of Capital – Concept, importance, Measurement of specific cost- Cost of debt, Cost of preference shares, Cost of equity capital, Cost of Retained Earnings. Computational of overall cost of capital, Cost of capital practices in India.
3. Capital Structure Decision: EBIT-EPS Analysis, ROI-ROE Analysis, Leverage Analysis – Operating leverage, Financial leverage and Combined leverage. Capital structure Theories – Net Income Approach, Net Operating Income Approach, Modigliani- Miller Approach.
4. Funds Flow Statement analysis and Cash Flow Statements analysis - Theory and Problems.
5. Strategic wage management- need of compensation management, types of employees and compensation strategy, design of wage policy, design and implementation of VRS, Implication of FBT.

   Financial Aspects of Supply Chain Management: Vendor management, purchasing, distribution management, relationship with dealers, product pricing, and market cost analysis.
6. Leasing –Essential Elements, , Types of leases, Rationale for leasing, Mechanics of leasing, Leasing as financing decision. Impact of taxation on leasing decision. Higher Purchase Finance-Meaning & Characteristics, Lease financing v/s Hire purchase financing, Taxation Aspect.
7. Corporate Restructuring -- Forms of corporate structuring, Financial Aspects of Corporate Restructuring. Mergers and acquisition as a Growth strategy, motives and synergies. Takeover and Defence tactics, Legal and Procedural Aspects of Merger. Acquisition of Corus by Tata Steel. Merger of ICICI with ICICI Bank.
8. Business Valuation – conceptual Framework of Valuation, Methods of Valuation and Approaches to Value Measurements – Market Value added approach, (MVA ),Economic Value Added approach ( EVA ). Valuation, Innovative Financial Engineering.

Books Recommended-

1. Financial Management- Fifth Edition- Prasanna Chandra
2. Financial Management- Van Horne, James C.
3 Fundamentals of Financial Management – Brigham & Houston ( Cengage Learning)
4 Strategic Financial Management – Dr.G.P.Jakhotiya ( Vikas Publishing)
5 Financial Management – Paresh Shah ( biztantra)
6 Financial Management- Khan and Jain
7. Financial Management- I.M. Pandey
8. Management Accounting & Financial Accounting.– M.Y Khan & P.K.Jain
9 Principles of Financial Management-R.P.Rustagi
10 Mergers, Acquisitions and Corporate Restructuring – Prasad Godbole ( Vikas Publishing)
11Financial Management – G.Sudarshan Reddy ( Himalaya Publishing)

# MBA Part-II SEM. III (CBCS)

## Group C Human Resource Management. Paper – I

## STRATEGIC HUMAN RESOURCE MANAGEMENT

1. Strategic Human resource Management: Strategic Management- concept, process. Challenges for HRM, Strategic HRM, Traditional HR Vs Strategic HR, Role of Strategic Human Resource Management, Linking Company & HR Strategy – HR and corporate strategy, HR and Business Strategy; Barriers to SHRM.

2. Strategy & Human Resource Planning: Human Resource Planning- concept, process, factors affecting HRP, Techniques of forecasting – Trend analysis, Ratio Analysis, Scatter Plot, Computerized forecasting, Delphi Method, Managerial Judgment, Supply Forecast

3. Strategic Approach to Job Design & work System: Job Design- Concept, Approaches to work system design, Elements in redesigning work systems, Organisational Design Process, Factors affecting design process.

4. Strategic Approach to Manpower Acquisition: Recruitment strategy- Location based employee market segmentation- internal market Vs external market. Selection Strategy –

   skills of selected candidates, Selection Instruments- blank application forms, Application letter, Qualification, work experience, Interview. Role of line & HR manager in selection

5. Training & Development Strategies: Strategic Issues in training & development, Competency Mapping, Multiskilling, Succession Planning, cross cultural training.

6. Compensation Strategies: Difference between traditional pay & strategic pay, Generic approach to strategic compensation, Individual pay system, Group pay system, ESOPs,

7. Performance Management strategies: Strategic Dimension of Performance Appraisal, Defining Key Result Area (KRA), Result based performance, linking performance to pay, Merit based promotions, Competency based pay, Organisational Appraisal – Balance Score card, Economic Value added

8. Changing Environment of HRM: Internal & External Factors. Internal Factors – Human Resource of country, changing demands of employers, employees organization. External factors – Change in technology, Legal & government, Social factors, Economic and political factors.

References :


1. Strategic Human Resource Management – Rajesh Vishwanathan (HPH)
2. Personnel and Human Resource Management – by P. Subba Rao (HPH)
3. Strategic Human Resource Management - S K Bhatia (Deep & Deep publication)
4. Strategic Human Resource Management – Pulak Das (CENAGE Learning)
5. Strategic Human Resource Management – V S P Rao (Excel Books)
6. Strategic Human Resource Management – Jeffrey Mello
7. Strategic Human Resource Management – Pulak Das (Cengage)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# MBA Part-II SEM. III (CBCS)

## Group C Human Resource Management. Paper – II

## TRAINING AND DEVELOPMENT

1. Training & Development- Meaning and concept, Importance of training, Stages of training – Assessment of training needs; Designing the Programme – Principles of training, Areas of training; Implementation – Training methods; Evaluation of programme.
2. Management Development - Objectives, Essential ingredients of Management Development, Techniques of Management Development: On-the-job & off-the-job techniques,
3. Management of Careers – Careers stages, Career Anchors, Career Planning – Objectives, Need and Process, Career development – Individual and Organisational career development, Managing Promotions and transfers.
4. Evaluation of training programme- Need of evaluation, Models of evaluation – Hamblin model, Kirkpatrick's design, Warr's Framework, Peter Bramely's. Stages of Evaluation – Pre- training & Post training evaluation, Evaluation during training, Cost-benefit analysis. Reviewing effectiveness of training – Training Records, Performance of trainees, Performance of training itself.
5. International training – Expatriate training stages; Phases of expatriate training – Objectives, Global assignments, Training need analysis, CCT goals and measures, Develop and deliver CCT programmes, Evaluation of CCT.
6. Modern methods to training : E-training – Computer based training, Electronic performance support system (EPSS), Distance and Internet based training- Tele-training, Video conferencing. Grid training, Supervisory Skill Level (SSL Technology), Action Learning, Competency based training, Out Bound Training programme (OBT), Self-efficacy training programme.
7. Organisational Development : Concept, Process, Interventions/Techniques- Survey feedback, process consultation, Goal setting and planning, Managerial Grid.

Reference Books :


1. Human Resource Management by Gary Dessler.(PHI)
2. Enriching Human Capital through Training & Development by P L Rao. (Excel Books)
3. Essentials of Human Resource Management – P. Subba Rao. (HPH)
4. Human Resource Management – K Aswathappa (Tata Mcgraw Hill, New Delhi )
5. Training & Development by S.K.Bhatia. ( Deep & Deep Publication)
6. International Human Resource Management K Aswathappa & Sadhna Dash (Tata Mcgraw Hill, New Delhi )

# MBA Part-II SEM. III (CBCS)

## Group D – System Management Paper-I

## MANAGEMENT INFORMATION SYSTEM

1. SCOPE AND OBJECTIVES OF MIS : The role and importance of information systems, The place of information systems in the organisation, The power of MIS, strategic role of information systems. Uses of MIS.

2. THE CHALLENGE OF INFORMATION SYSTEM: Difference between computer literacy and information system literacy. Information needs of different organisation levels. Major types of information system in organisation and relationship between them, Enhancing management decision making, decision support systems (DSS) – understanding DSS, characteristics components, major DSS applications. Group decision support systems (GDSS), - elements, characteristics, how GDSS can enhance group decision - making? Executive support systems (ESS) – role of ESS in the organisation, developing ESS, benefits of ESS.
3. FOUNDATIONS OF INFORMATION SYSTEM: Devices and tools for interacting with MIS – hardware, software and telecommunication. Managing data resources – organising data in a traditional file environment and problems, modern database environment, logical and physical view of data, advantages of database management system.
4. STRATEGIC ROLE OF INFORMATION SYSTEMS AND BUILDING INFORMATION SYSTEMS: Information as a strategic resources and concept of strategic information system. Contribution of information systems to pursue competitive strategies.
5. INFORMATION SYSTEM SUCCESS AND FAILURE: Major problem areas in information system, causes of information system success and failure, evolution of success of information systems. Principle causes of information system failure, appropriate strategies to implement the process
6. APPLICATION OF MIS IN VARIOUS FUNCTIONAL AREAS: Marketing information systems, financial information systems, human resource information systems, production information systems.
7. KNOWLEDGE MANAGEMENT : Introduction and difference between the terms data, Information and Knowledge, Need of Knowledge Management, Types of Knowledge, Impact of IT on Knowledge Management, Role of ICT in Knowledge Management. Case Study.

Reference books:


1. Management of Information systems – Gordon B. Davis & Margreth H. Olson
2. Management of Information systems – Jawadekar W.S.
3. Information systems management in practice – Ralph H. Sprague Jr. & Barbara C. McNurlin
4. Management of information systems – James A. O'Brien
5. Information system concepts for management – 4th edition Lucas
6. Management of information systems – 2nd edition – Kroenke David.
7. Management of information systems – Organisation and Technology by Kenenth C. Laudon, Jane P. Laudon.

# MBA Part-II SEM. III (CBCS)

Group D – System Management Paper-II

ERP and SPD

1. Enterprise Resource Planning –Introduction What is ERP? Need of ERP, Advantages of ERP and Growth of ERP, Common ERP myths, The role of CIO.

2. ERP and Related Technologies – ERP and Related Technologies – Business process Reengineering (BPR)- Business Process, Process Model of Organization, What delays the business process?, Relevance of IT. BPR, ERP and IT. Supply Chain Management (SCM)-Concept, Supply Chain Performance: Achieving Strategic Fit and Scope. Introduction to Customer Relationship Management (CRM).

3. ERP Implementation in detail- Implementation Basics, Implementation cycle, Package Selection, Implementation Process, Project Team and other stakeholders

4. . Introduction to System Development- Characters of a software, SDLC, Role and skills required for Software Engineer and Software Project Manager

5. System Analysis- Problem Definition, Requirement Gathering (Fact Finding methods), Requirement Modeling- Meaning and Tools (DFD, ERD, Decision Trees, Decision Tables)

6. System Design- Design of input & Control, Design of output, User Interface design: good design, design issues, features of modern GUI, Design of program Specification, Code Design

7 ERP Case Studies: Post implementation review of ERP Packages in Manufacturing , Services , and other Organizations

REFERENCE BOOKS:


| | | |
|---|---|---|
| 1. | Enterprise Resource Planning | Alexis Leon |
| 2. | ERP Ware : ERP Implementation Framework | V.K. Garg & N.K. Venkitakrishnan |
| 3. | ERP | Leon |
| 4. | ERP Concepts and Planning | Garg & Venkitakrishnan |
| 5. | ERP | Dr. Milind Oka |
| 6. | Modern System Analysis and Design | Jeffrey A. Hoffer, Joey F. George, Goseph S. Valacich |
| 7. | System Analysis & Design | Elias Awad |
| 8. | System Analysis & Design methods | Whiten, Bentley |
| 9 | Enterprise Resource Planning | Ashim Raj Singala (Cengage) |

# MBA Part-II SEM. III (CBCS)

## Group E -Production & Materials Management – Paper I

## PURCHASING AND INVENTORY MANAGEMENT

1. Purchasing Management – Objectives of purchasing, purchasing function, Responsibilities of Purchase Department, Purchase Cycle.
2. Demand forecasting objectives, quantitative and qualitative methods of forecasting, factors affecting accuracy of forecasting
3. Purchasing research, Centralized and decentralized purchasing strategy, Timing of purchase, Forward buying, Hand-to-mouth buying, Speculative buying, Hedging, receiving and issuing procedures, purchasing of capital equipment, International Purchasing and global sourcing, purchasing using internet.
4. Design specification and engineering drawings, Importance and selection of source of supply, evaluating performance of supplier, Vendor rating, Negotiation and price determination, Order preparation and follow-up, legal aspects of purchasing
5. Materials requirement planning, Bill of materials, Master production schedules, Explosion of requirements, Determining Gross Net Requirements and various reports, Introduction to MRP II systems, Management of inventories in multiple locations.
6. Inventory concept, functions, need for inventory, cost associated with inventory, classification of materials, Documents in inventory, Purchase requisition, Purchase orders, Receiving and inspection formats, management reports, zero inventory concept.
7. Cost-reduction techniques, Standardization, Simplification and variety reduction, Value analysis.
8. Stores – Functions, Stores layout, Stores equipments, preservation of materials, disposal of scrap and surplus, Materials Handling Equipments used in stores.
9. Make Or Buy Decisions: Factors influencing make or buy decisions, Analysis of make or buy decisions. Concept of outsourcing

Books Recommended:-


1. Production and Operations Management – K.Ashwathappa, K. Sridhar Bhatt
2. Purchasing and Supply Chain Management – Leanders Johnson
3. Purchasing and Supply Management - Dobler and Burt
4. Sourcing and supply chain management- Handfield, Moncza, Gunipero,Cenage Learning
5. Handbook of Materials Management - Gopalkrishnan
6. Materials & Logistics Management - L.C.Jhamb
7. Materials and Purchasing Management – S.A.Chunawala
8. Operations Management – Malhotra, Ritzman
9. Operations Management – Russel, Taylor

# MBA Part-II SEM. III (CBCS)

## Group E - Production & Materials Management Paper Ii

## LOGISTICS AND SUPPLY CHAIN MANAGEMENT

1. Logistics and Supply chain management: meaning and objectives, Role and importance of logistics and supply chain in business. Activities of logistics. Principles of supply chain management.
2. Logistics interfaces with other functional areas, Service driven logistics systems, Supply chain as a competitive advantage, Collaborative buyer-seller relationships,
3. Lean supply chain management, characteristics of lean supply system, inventory investment, MRP as tool to control dependent demand inventory.
4. Logistical objectives of transport, Transportation strategy, transport documentation, Transportation Economics and pricing, transport cost considerations.
5. Need for outsourcing logistics, 3 PL and 4 PL service providers, considerations for hiring 3PL and 4 PL service providers,
6. Importance of warehousing, warehousing decisions, layout and design principles of ware house, packaging and its importance, packaging materials, material handling equipments used in warehouses
7. Inventory Management in Global Supply Chain Management, Supply Chain Security, Critical tasks of logistics and supply chain managers.
8. Role of information in supply chain, managing supply chain information, technology used to implement supply chain, role and importance of IT in supply chain, E-commerce as a tool to world class supply chains

Books recommended


1. Supply Chain Management - K.Sridhar Bhat - Himalaya Publishing House
2. A Logistics approach to Supply Chain Management – John Coyle, Langley– Cenage Learning
3. Manufacturing Planning and control for Supply Chain Management – Vollmann, Berry
4. Designing and Managing the supply chain - David Simchi, Levi & Philip Kaminski, McGraw-Hill Companies Inc., 2000.
5. Supply Chain Management – Chopra, Meindel, Kalra
6. Logistics Management – S.K.Bhattacharaya
7. Business Optimisation thru Supply Chain Management – Anand Sharma
8. SCM in 21st Century – B.S.Sahay

# MBA Part-II SEM. III (CBCS)

## Group F – Agriculture & Co-operative Management Paper-I

## FUNDAMENTALS OF AGRICULTURE & CO-OPERATIVE MANAGEMENT

1 Utilization of Land and Cropping pattern
Natural Environment: -Geographical situation, Physical features. Problems of soil Erosion: - Types of soil Erosion, water erosion, wind erosion. Land resources, Classification of land, Cultivated Area, Cropping Pattern

2 Agriculture Input Technology: -
Irrigation: - need, role, development. Manures and Fertilizers: Soils and Losses of Nutrients, Nature and Function of Manures, Chemical fertilizers: - Types, time of application

3 Improved seeds and plant protection measures.
Improved seeds: - Importance, varieties. National Seeds Corporation. Plant protection measures: - causes of plant diseases, Measures

4 Agricultural Labour:
Definition of Agricultural labour, Characteristics, Special Programmes for agriculture labour, Lines of improvement of landless labour

5 Introduction of Co-operation
Co-operation concept, definition and principal of co-operation. Relevance and significance of Co-operative Law. Growth of co-operative movement in India.

6 Co-operative Management
Introduction of co-operative management. General Body of Members. Requisite of meeting. Board meetings/managing committee meetings. Committees of the Board. Power and duties of the chairman. Board of Directors and the executives. Successful functioning of Board of directors. Unique features of co-operative Management.

7 Agri. and Non-Agricultural Co-operatives in India.
Self Help Groups. Consumers Co-operatives. Marketing Co-operatives. Co-operative Housing.

8 Co-operative Banks at Different Levels in Maharashtra.
State co-operative Bank (SCB), Land Development Bank (LDB), District Central Co-operative Bank (DCCB), Primary Co-operative credit societies (PCCS),Maharashtra State Co-operative Bank, National Housing Bank, Regional Rural Banks

Books Recommended:


1. Ansari A.A.- Co-operative Management Pattern.
2. Akrnat J.S.- New Dimensions of Co-operative Management.
3. Goel B.B.-Co-operative Management and Administration.
4. Sah A.K.-Professional Management for Co-operatives.
5. Ajit Singh-Rural Development and Banking in India.
6. Dandekar V.M.- Financing small and Marginal Farmers through co-operative credit structure.
7. Naidu L.K.-Bank Finance Rural Development
8. Mamoria- Agriculture problems of India-

# MBA Part-II SEM. III (CBCS)

## Group F – Agriculture & Co-operative Management Paper-II

## AGRICULTURAL MARKETING

1 Agricultural Marketing- Introduction:-
Concept and Definition, Need and Scope, Need Differences in Marketing of agricultural and manufactured goods.

2 Market and Market Structure.
Market:- Meaning, Components of market, Classification of Market, Growth of Markets.
Market Structure:-Meaning, Components of Market Structure.

3 Agricultural Marketing functions.
Marketing function:-Meaning and Classification. Packaging:-Meaning, Types, Packaging Materials and New inventions, IIP (Indian Institute of Packaging). Transportation:-Advantages, Means of transportation, Transportation cost. Grading, Standardization and Quality Control:-AGMARK. Storage:-Meaning, Need, Risk in Storage, Storage Structure. Warehousing:-Meaning, Functions, Types. Processing and Value addition: Meaning, advantages. Market Information: Meaning, Importance, Types.

4 Marketing Agencies, Institutions and Channels.
Introduction. Marketing Agencies. Marketing Institutions. Marketing channels:-Definition, Marketing channels for:-cereals, Oilseeds, Pulses. Innovative marketing Channel:-farmers Markets. Contract Marketing:-Meaning, Advantages, types.

5 Marketing of Farm Inputs:-
Theory of determination of input Price. Supply, demand, distribution, Marketing Pattern and Price policy of important farm inputs: Chemical fertilizers, seeds, Plant Protection chemicals (Pesticides), Electricity, Farm Machinery.

6 Government intervention and Role in Agricultural Marketing.
Characteristics of Traditional Agricultural Marketing System. Directorate of marketing and Inspection. Regulation of Agricultural Marketing:- Definition, Features, Classification. State Trading:- Objectives, Types.

7 Rural Marketing:
Introduction, Classification, Characteristics, Rural Consumer, Segmentation, Rural Product, Rural Price, Rural Distribution, Rural Communication.

Books Recommended:


1. Arora R.C.-Integrated Rural Development.
2. Mishra S.N.- Politics and Society in Rural India.
3. Porter, Michael E- Competitive Strategy
4. Philip Kotler -Marketing Management.
5. Rudra AShok-Indian Agricultural Economics-Myths and Realities.
6. Stalk George-Competing Against Time.
7. Export Management -Prof. Laxmi Narayn

# MBA Part-II SEM. III (CBCS)

## Group G – International Business- Paper I

## INTERNATIONAL BUSINESS ENVIRONMENT

1. Introduction to International Business: Importance nature and scope of International business; modes of entry into International Business internationalisation process and managerial implications. Globalization - Forces, Meaning, dimensions and stages in Globalization, impact of globalization on India, Introduction to theories of International Trade by Adam Smith, Ricardo and Ohlin & Hecksher

2. Environmental Context of International Business: Framework for analyzing international business environment – Domestic, foreign and global environments and their impact on international business decisions (PESTEL analysis).

3. Global Trading Environment: World trade in goods and services – Major trends and developments; World trade and protectionism – Tariff and non-tariff barriers; Counter trade.

4. Definition and Scope of competitiveness. Indicators of world competitiveness. Ranking of the current year and India's position.

5. International Economic Institutions and Agreements: GATT, WTO, IMF, World Bank, IMF, UNCTAD, Agreement on Textiles and Clothing (ATC), GSP, GSTP and other International agreements; International commodity trading and agreements.

6. Regional Economic Groupings in Practice: Regionalism vs. multilateralism, Trading blocs - Structure and functioning of EC and NAFTA; Regional economic cooperation.

7. Multinational Corporations and their involvement in International Business: Issues in foreign investments, technology transfer, pricing and regulations; International collaborative arrangements and strategic alliances. Potential, Need and Problems of MNCs.

8. Business culture and corporate culture; Cross -cultural values and business management; Management of Personnel with Different Social and Cultural Background. Cultural Factor in human resource policies; Complexities and issues in managing human resource across countries.

9. Emerging Developments and Other Issues: Growing concern for ecology; Counter trade; IT and international business. Business values ethics and social responsibilities

Suggested Readings:

1. Bennet, Roger, International Business, Financial Times, Pitman Publishing, London, 1999.
2. Bhattacharya, B., Going International: Respon se Strategies of the Indian Sector, Wheeler Publishing, New Delhi, 1996.
3. Czinkota, Michael R., et. al., International Business, the Dryden Press, Fortworth, 1999.
4. Danoes, John D. and Radebaugh, Lee H., International Business: Environment and Operations, 8th ed., Addison Wesley, Readings, 1998.
5. Griffin, Ricky W. and Pustay, Michael W, International Business: A Managerial Perspective, Addison Wesley, Readings, 1999.

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# MBA Part-II SEM. III (CBCS)

## Group G – International Business- Paper Ii

## INTERNATIONAL TRADE PROCEDURES AND DOCUMENTATION

1. EXIM Operations and Documentation: Trade operations and documentation; Documentation areas and dimensions; Nature and characteristic features of Exim documents; EDI and documentation. Preparation for Exports. Categories of Export . Current trends in exports and imports in India.

2. EXIM Policy Framework: Legal framework, Objective of EXIM policy; Policy overview – Facilities and restrictions; Convertibility of Rupee and its impact on foreign trade.

3. Foreign Exchange Facilities and Regulations: Legal framework in India – FEMA- Origin and objectives, Main provision o f FEMA; Other relevant acts.

4. International Trade Terms: Trade contract and trade terms; Trade terms and need for standardisation; INCO terms.

5. Export Payment Terms: Credit risk management and payment terms; Main features of payment terms -Advance payment, open account, documentary collection, documentary credit – Documentary collection –DP and DA process and operation; Letter of credit and parties involved; Process of opening and advising LC, Types of LC; Process and operation; UCPDC - Major clauses; Consignment sale.

6. Transit Risk Management: Nature of transit risk; Contract of cargo insurance Parties involved – Insurer/assured, Indemnity and insurable value; Perils and losses; Insurance policy and certificate; Cargo loss claims – Procedure and documentation.

8. Credit Risk Management: Export credit insurance – Concept and importance; Role of Export Credit Guarantee Corporation (ECGC); Covers issued by ECGC; Financial guarantees; Coverage of commercial and political risks – procedures and documentary requirements.

9. Customs Clearance of Export and Import Cargo: Legal framework – Customs Act 1962;. Customs Tariff Act 1975; Foreign Trade (Development and Regulations) Act 1992; Valuation and types of duties and Harmonised System of Nomenclature; Documentation requirements and document processing; Physical examination of goods; EDI and customs operations.

11. Export benefits: Duty Drawback, Advances Licensing CENVAT, Sales Tax Exemption, IPRS, Excise Clearance Benefit / Rebate, Income Tax Benefit. Central Excise Clearance:

12. Import Policy and Export Promotion: Duty exemption schemes (export promotion schemes); Import of capital goods; Export, trading star trading, super star trading house policy and procedures; EoU's/EPZs/SEZs schemes and procedures. Export promotion councils.

Provision and restrictions for import and export in India. Import Procedures:

13 Global trade and its growth, India's relative position in the world trade over a period of Time. Analysis of India's Foreign trade since 1950 – Commodity, Composition, Direction Changes

*BOOKS RECOMMENDED*


1. New Import Export Policy - Nabhi Publications
2. EXIM Policy & Handbook of EXIM Procedure – VOL I & II
3. A Guide on Export Policy Procedure & Documentation– Mahajan
4. How to Export – Nabhi Publications
5. Export Management – D.C. Kapoor
6. Foreign Exchange Hard Book – H. P. Bhandari
7. Annual Report (Recent Years) Ministry of Commerce, Government of India
8. India Balance of Payments, RBI Bombay
9. Economic Survey Ministry of Finance Government of India.
10. Nabhi's How to import –
11. The New Export Marketer -Young G.
12. Practical Guide to the Foreign Trade of India -Arora R.S.

# MBA Part-II SEM. IV (CBCS)

## M.B.A. – II – SEM. IV

## Paper-XXVI

## Entrepreneurship Development and Project Management

1. Foundations of Entrepreneurship Development: Concept and Need of Entrepreneurship Development Definition of Entrepreneur, Entrepreneurship,Innovation, Invention, Creativity, Business Idea, Opportunities through change.

Concepts of Entrepreneur, Manager, Intra preneur / Corporate Entrepreneur –comparative study - Roles, Responsibilities, Career opportunities.Entrepreneurship as a career, Entrepreneurship as a style of management, The changing role of the entrepreneur: mid career dilemmas – Closing the window.Sustaining Competitiveness - Maintaining competitive advantage.Contemporary issues in Entrepreneurship.

2. Theories of Entrepreneurship:

· Innovation Theory by Schumpeter & Imitating
· Theory of High Achievement by McClelland
· X-Efficiency Theory by Leibenstein
· Theory of Profit by Knight
· Theory of Social change by Everett Hagen

3. Influences on Entrepreneurship Development :

a. Entrepreneurial Traits

b. External Influences on Entrepreneurship Development: Socio- Cultural, Political, Economical, Personal. Entrepreneurial culture with special reference to Intrapreneurship / Corporate Entrepreneurship.

c. Entrepreneurial Success and Failure: Reasons and Remedies.

4. Women Entrepreneurs: Challenges to Woman Entrepreneurs, Achievements of Woman Entrepreneurs, Role Models of Woman Entrepreneurs.. Social Entrepreneurship. Concept, examples of Social Entrepreneurship and its features.

5. Creating Entrepreneurial Venture - Entrepreneurship Development Cycle . Business Planning Process - The business plan as an entrepreneurial tool Elements of Business Plan, Objectives, Market Analysis, Development of product / idea, Marketing, Finance, Organisation & Management, Ownership, Critical risk contingencies of the proposal, Scheduling and milestones.

7. Project Management

Technical, Financial, Marketing Personnel and Management feasibility Reports

Financial schemes offered by various financial institutions like Commercial Banks, IDBI, ICICI, SIDBI, SFCs, Venture Capital Funding, Angle Capitalist

8. Entrepreneurship Development and Government

Role of Central Government and State Government in promoting Entrepreneurship with various incentives, subsidies, grants etc. – with special reference to ‘Export oriented unites’

Role of the following agencies in the Entrepreneurship Development

1. DIC – District Industrial Center
2. SISI – Small Industries Services Institute
3. EDII – Entrepreneurship Development Institute of India
4. NIESBUD – National Institute of Entrepreneurship and Small Business Development
5. NEDB – National Entrepreneurship Development Board

Note:

Case studies of Entrepreneurs – successful, failed, turnaround ventures should be discussed in the class.

Exercises should be given for preparation Business Plan for a group of 3-4 students, Interactive sessions with Entrepreneurs, authorities of financial institutions, Government officials should be organized

Books Recommended:

1. Dynamics of Entrepreneurship Development – Vasant Desai.
2. Entrepreneurship: New Venture Creation – David H. Holt
3. Entrepreneurship Development New Venture Creation – Satish Taneja,S.L.Gupta
4. Project management – K. Nagarajan.
5. Entrepreneurship: Strategies and Resources – Marc J. Dollinger
6. The Culture of Entrepreneurship – Brigitte Berger.
7 Entreprenurship – Robert D.Hisrich, Michael P.Peters, Dean A.Shephered
8.Entrepreneurship as Strategy- G.Dale Meyer, Kurt A.Heppard
9. Entrepreneurship and Small Business Management – Siropolis
10. Lead like a Entrepreneur – Neal Thornberry
11. You Too can become an Entrepreneur – Nalinaksha Mutsuddi
12 Corporate Entrepreneurship – Vijay Sathe
13 Make the move : Demystifying Entrepreneurship – Ishan Gupta and Rajat Khare
14 Entrepreneurship – Text and Cases – P. Narayana Reddy (Cengage)

# MBA Part-II SEM. IV (CBCS)

Paper-XXVII

**Excellence in Management**

1. Excellence: concept, foundation of Excellence, Necessary Skills to achieve Excellence, . Creating Excellence

2. Leadership : Role of Individual Leaders in Creating Excellence b) Leadership Styles- Charismatic Leadership, Transformational Leadership, Visionary Leadership c) Contemporary Issues in Leadership – Emotional, Intelligence and Leadership, Team Leadership, Cross-cultural Leadership.

3 Emotional Intelligence : Importance of Emotions and Emotional Intelligence in creating Excellence : Emotional Literacy – a concept, Emotional Intelligence Applied, Improving Emotional Literacy

4 ) Knowledge Management – Concept, KM Strategies, Architecture and Tools – KM practices. Designing and building a talent reservoir, segmenting talent reservoir, Talent management grid, creating a talent management system, institutional strategy for dealing with talent management.

5) Business Process Reengineering – Reengineering and its relationship with functional areas of business, history of reengineering, making effective BPR IT enabled services Business/Knowledge Process Outsourcing.

6. Corporate social responsibility- concept, practices adopted by Indian Companies, government policy towards SCR

7. E- business: Traditional commerce v/s e-commerce, e-commerce v/s e-business, category of e-commerce, development and growth of e-commerce, advantage and disadvantage of e-commerce. E-commerce Indian experience.

8. Creating Excellence in the process :a) TQM – Objectives , procedure b)ISO series – an overview, c) Quality Standards d) Kaizen way of thinking– Usefulness of Kaizen in managing for Excellence – e) 5 S concept, Total Productivity maintenance f) Six Sigma – Concept, a tool to make improvements in all operations within a process g) Stages of six sigma implementation – Discover, Decide, Organize, Initialize, Deploy, Sustain h) Studying minimum one international company that achieved an excellence and sustained growth with the help of application of Six Sigma Strategy.

**Books Recommended –**

1. Creating Excellence – Craig R.Hickman & Michael A.Silva – George Allen & Unwin, London Universal Book Stall, New Delhi
2. Six Sigma – Mikel Harry and Richard Scroeder Doubleday, A division of Random House Inc. Newyork.
3. Secrets of Break- through Leadership – Peter Capezio and Debra Morehouse – Jaico Publishing House, Mumbai.
4. Organizational Behaviour – Stephen Robbins – PHI, New Delhi
5. Achieving Managerial Excellence – S.K.Bhattacharya – Published by S.G.Wasani for Macmillan India Ltd., New Delhi
6. Managing Creativity for Corporate Excellance- P.N.Rustogi
7. The EQ Edge- Stevan J.Stein and Howard E.Book
8. Talent Management Handbook- Berger and Berger (Tata McGraw)
9. E Commerce Strategy Technology and Implementation- Gary P Schneider (Cengage Publication)

# MBA Part-II SEM. IV (CBCS)

## GROUP A : MARKETING MANAGEMENT PAPER-III

## INTEGRATED MARKETING COMMUNICATIONS & CONSUMER BEHAVIOUR

1. Concept and Process of Integrated Marketing Communications (IMC): Elements -
a) Advertising – Classification of advertising, types, advertising appropriation, advertising campaigns
b) Sales Promotion – Different types of Sales Promotion, relationship between Sales promotion and advertising
c) Publicity – Types of Publicity , relationship between advertising and publicity
d) Personal Selling
e) Direct marketing and direct response methods
f) Event Management
g) E-Commerce
h) Corporate Communication
i) Public Relations – Types of PR
j) Media relations
k) Community relations
l) Industrial relations and
m) Government relations
n) Employee relations (House Journals / Newsletter)
o) Crisis Management
p) Trade Fairs and Exhibitions

2. IMC Message Design: AIDA model - Considerations for creative idea, visualization

3. Media Management - Media Process - Media Jargons - Media Buying - Strategies and execution

4. Suppliers in IMC: Hoarding Contractors/Printers etc., Ad. Agency – Departments of Ad. Agency, Client Servicing-client Agency relationship, account planning

5. Consumer Behavior: Concept, diversity of consumer behavior, Characteristics of Indian Consumers. Consumer Decision Making & Consumer Behaviour Model.

6. Influences on the Consumer: Consumer needs, motives - positive and negative motivation - rational versus emotional motives. Consumer relevant reference groups - opinion leaders - family decisions making and consumption related roles - family life cycle - social class and consumer behaviour - influence of culture on consumer behaviour - cross cultural context. Diffusion of innovations: the diffusion process - the adoption process - consumer innovativeness and personality traits.

7 Post purchase behavior: Consumer satisfaction concept & Models – Expectancy Disconfirmation, Desires Congruency Model, Equity Theory, Attribution Theory, Cognitive dissonance, Consumer delight, consumer complaint behaviour. Changing pattern of Consumer Behaviour.

8. Consumerism: Evolution of consumer society. Definition of consumerism, buyer's & seller's rights, effects of consumerism.Dimensions of Consumerism.

Books recommended:


1 Advertising and Promotions - Belch & Belch,Tata Mcgrew Hill 2001
2 Advertising Management - Rajeev Batra,John G.Myers & David A Aaker-PHI
3 International Edition - Contemporary Advertising Irwin/McGraw –Hill
4 Integrated Marketing Communications - Duncon- TMH
5 Foundations of Advertising Theory & Practice- S.A.Chunawalla & K.C.Sethia- Himalya Publishing
6 Consumer Behaviour – Suja Nair (HPI)
7 Consumer Behavior – Leon Schiffman, Leslie Lazar Kanuk – Pearson / PHI, 8/e
8 Consumer Behavior – Hawkins, Best, Coney – TMH, 9/e, 2004
9 Customer Behavior – A Managerial Perspective – Sheth, Mittal – Thomson,
10 Conceptual Issues In Consumer Behavior Indian Context – S Ramesh Kumar – Pearson,
11 Consumer behaviour - Louden, Delebeta
12 Consumer Behaviour – Srabanti Mukharjee

# MBA Part-II SEM. IV (CBCS)

## GROUP A : MARKETING MANAGEMENT PAPER-IV

## RETAIL AND RURAL MARKETING

Chapter 1 Retail Marketing

Definition and scope of retailing, retailing scenario – Indian vs Global Prospects of Retailing in India, Role of service in retailing, Functions of retailing Key drivers of retailing in India, Challenges & Opportunities for Retailing in India Foreign direct investment in retail in India.

Chapter 2 Retail Formats

Types of retailers non-store, store based service retailing, Retail formats and their evolution Different kinds of formats – convenience store, supermarket, departmental store, hypermarket, mall, etc. Franchising

Chapter 3 Store Planning, Design and Layout

Store planning, Location planning, Site selection, Store design, Retailing image mix The space mix, Effective retail space management, Store layout, Floor space management

Chapter 4 Retail Merchandising

Meaning and concept, Nature and process of merchandising, the evolution of merchandising

The merchandiser: role and responsibility, Planning, Directing, Co- ordinating, Controlling The Buyer: role and responsibility, Function of buying for different types of organizations Buying for- Single store, Chain store, Non-store Retailers

Chapter 5 Rural Marketing

Introduction, Phased Evolution of rural marketing, Rural marketing model, Rural vs Urban Marketing, Nature and characteristics of rural marketing, challenges and opportunities in rural marketing, segmentation, approaches for segmenting the rural market in India.

Chapter 6 Rural Marketing Mix

Rural marketing mix, Additional Ps of Rural Marketing 4 As of Rural Marketing Mix, Needs and wants of Rural Consumer Profile and Lifestyle of Rural Consumer

Chapter 7 Marketing Strategies for Retail and Rural Market

Development of retail brand, Strategies on social-group influence, Need for paradigm shift in strategic perspective for rural markets Rural marketing strategies, new product development for rural market, e-Rural marketing, Application of product life cycle in rural market IT as a tool for sustainable rural development

Rural retail channel management, Rural marketing of FMCG, Rural marketing of Consumer Durables, Marketing for Agriculture Inputs, Marketing for Financial Services.

References:

Retailing Management – Swapna Pradhan (The McGraw-Hill companies)
Retail Management – Gibson Vednani
Channel Management & Retail Management – Meenal Dhotre
Retail Management – Suja Nair ( Homalaya Publishing House, Mumbai)
Rural Marketing Concept and Practices – Balram Dogra and Karminder Ghuman (The McGraw-Hill companies)
Rural Marketing – T.P. Gopalswamy (Vikas Publishing House)
Rural Marketing – C S G Krishnamacharyula and Laltha Ramkrishnan (Pearson Education)
Rural Marketing – R V Badi and N.V. Badi (Himalaya Publishimh House)

# MBA Part-II SEM. IV (CBCS)
## GROUP A : MARKETING MANAGEMENT PAPER-V
## INTERNATIONAL MARKETING

1. Introduction To International Marketing

Concept, scope & Objectives. Challenges and opportunities in International Marketing, Underlying forces of International Marketing. Deciding whether to go abroad, Deciding which markets to enter, Deciding how to enter the market, Deciding on the marketing programme, Deciding on marketing organization.

2. Global Marketing Environment

Economic, Social, Cultural, Demographic, Political, Legal and Regulatory, Geographic , Technological Environment. Internatinal trading Environment, trading blocks and intra-regional trade – EU, Euro, SAARC, Indo-Sri Lanka Free Trade Agrrement, WTO, GATT, UNCTAD, UNIDO, WTO, ITC.

3. Global Segmentation Targeting and Positioning

Global Market Segmentation, market segment selection, Global Targeting – Global Product Positioning [Study few Indian multinational companies entered into Global Market]

4..Global Marketing Mix

Product - International Product life cycle, Product decisions, Price - Pricing objectives, Pricing for exports, Pricing problems, Essential matters of export prices, Factors influencing international pricing decisions, Place – Channel objectives and constraints, channel structure, channel strategy for new market entry, Promotion – Global media decisions

6. Market Entry Strategies

Licensing and franchising, exporting, Contract manufacturing, Turnkey contract, Fully owned manufacturing facilities, assembly operations, joint ventures, Third country Location, Mergers and acquisition, Strategic alliances, Counter trade.

7. Export Procedure And Documentation

Important steps in export procedure, Documents – Pre-shipment document, Documents related to goods, Certificate related to shipments, documents related to payment, documents related to inspection, documents related to excisable goods, Compulsory Quality Control and Pre-shipment Inspection, Excise Clearance, Marine Insurance.

8. Trade Policy and Regulation of India

Trade strategy in India, Foreign trade policy, Regulation and Promotion of Foreign trade.

Reference Books :

1) Global Marketing Management – Warren J. Keegan
2) International Marketing – Francis Cherunilam
3) Export Marketing – B.S.Rathor and J.S.Rathor
4) Global Marketing Management – S.A.Sherlekar and V.S.Sherlekar
5) Marketing Management – Philip Kotler
6) International Marketing – Sak Onkvisit & John Shaw – Pearson .
7) International Marketing, R.M. Joshi

# MBA Part-II SEM. IV (CBCS)

## Group B- Financial Management -Paper III

## Project Planning And Working Capital Management

1 Project planning- Generation and screening of project ideas, Market and Demand Analysis, Technical Analysis, Financial Estimates and projections.

2. Capital Budgeting-Techniques- Pay Back Period, ARR, NPV, PI, IRR,MIRR.
Project selection under Capital Rationing. Inflation and Capital Budgeting. Risk Analysis in Capital Budgeting- Definition of risk- Sensitivity analysis, Scenario Analysis, Simulation Analysis and Decision Tree Analysis. Risk Analysis in Practice.
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3 Development of Financial Institution – Financial institution: IFCI, IIBI Ltd., IDFC Ltd. The Export Import Bank of India, SICOM. Major schemes of Project financing and appraisal of term loans by financial institutions.
Venture Capital- Concept, features, venture capital financing- early and later stage, after care stage. Disinvestment mechanism, Indian venture capital scenario. .

4. Financial Management in Sick Units- Definition of Sickness, Causes of Sickness, Symptoms of sickness, Prediction of Sickness, Revival of a Sick Units. Introduction to BIFR.

5 Working Capital Management – Need for working capital, Determinants of working Capital, Computation of working capital Working Capital Financing- Trade Credit, Bank Credit, Commercial Papers, Factoring.

6 Management of Cash- Motives of holding cash, Objectives of cash management, Factors determining the cash need, Cash Management Techniques. Cash Budget. Options for investing surplus funds and strategies for managing surplus funds. Determining the Optimum level of cash balance – Baumol Model, The Beranek Model.

7 Receivables Management Objectives, Costs - Collection Cost, Capital Cost, Delinquency cost, Default Cost. Benefits of Management of Receivables, Credit Policies, Credit Terms and Collection Policies. Collection experience Matrix, Aging Analysis of Account Receivables.

8 Inventory Management- Concept, Benefits and costs of holding inventories, Inventory Control Techniques- ABC Analysis, EOQ, Reorder level, Maximum and Minimum Level, Danger level, Safety stock.

Books Recommended


1. Projects : Planning, Analysis, Selection, . Implementation and Review- Prasanna Chandra
2. Financial Management – Paresh Shah( Biztantra)
3. Financial Management – Eugene F.Brigham, Michael C. Ehrhardt

4. Financial Management- P.V.Kulkarni & B.G.Satyaprasad
5 Financial Management – M.Y.Khan & P.K.Jain
6. Working Capital Management- V.K.Bhalla
7. Working Capital Management- Scherr F.C.
8. Working Capital Management – J.J.Hampton and C.L.Wagner

# MBA Part-II SEM. IV (CBCS)

## Group B- Financial Management -Paper IV

### INVESTMENT MANAGEMENT

1. Investment : Concept, Investment v/s speculation, Characteristics of Investment, Investment Attributes, Investment Avenues, Tax saving avenues, Meaning of Portfolio, Benefits of Portfolio
2. Risk and Return— Meaning of Risk, Types of Risk, Elements of Risk- Systematic Risk and Unsystematic Risk, Measurement of Risk - Variance, Standard Deviation, Beta, Measuring Return: Ex-Post and En-Ante, Risk and Return of Two and Three Assets Portfolio, Effect on Portfolio return due to Risk free assets.
3. Asset Pricing Model – Markowitz Model, Capital Market Line, Sharpe Model, Security Market Line.
4. Random Walk Theory- Assumptions of Random Walk Theory, Efficient Market Hypothesis- Weak, Semi-strong, Strong efficient markets.
5. Bond valuation - Types and features of Bonds, Bond Pricing, Bond Yields, Risks in Bonds, Rating of Debt Securities- Various Rating Companies in India, Process of Rating adopted by these companies, Bond Portfolio Management- Passive Strategy and Active Strategy.
6. Analytical Framework for investment in Share- Fundamental Analysis- Economic Analysis, Industry Analysis and Company Analysis, Technical Analysis - Charting Techniques, Technical Indicators. Trends, Indicators, Indices and moving averages applied in Technical Analysis, Difference between Fundamental and Technical Analysis.
7. Portfolio Management – Specification of Investment Objectives and Constraints, Selection of Assets Mix, Formulation of Portfolio Strategy, Selection of Securities, Portfolio Execution, Portfolio Revision, Performance Evaluation.
8. Personal Financial Planning: Meaning, Rewards of Financial Planning, Steps in Financial Planning Process, Financial Planning for Life time, Planning Environment, Determinants of Personal Income.

Problems to be covered for following topics:

1. Risk and Return
2. Sharpe Model i.e. CAPM
3. Bond Valuation

Books Recommended:


1. Security Analysis and Portfolio Management – Donald E. Fischer and Ronald J. Jordon
2. Modern Investments and Security Analysis – Russell J.Fuller & James L. Farrell, Jr.
3. Investment Analysis and Portfolio Management – Prasanna Chandra
4. Investment Analysis and Portfolio Management- M. Ranganatham and R.Madhumathi
5. Security Analysis and Portfolio Management – Punithavathy Pandian
6. Investment Management - V.A.Avadhani
8. Portfolio Management – Samir Barua, J.R.Varma, V.Raghunathan
9. Personal Financial Planning guide - Ernst and Young's

# MBA Part-II SEM. IV (CBCS)

## Group B- Finance Management -Paper V

## INTERNATIONAL FINANCE

1 International Business Environment : Nature and characteristics of International Business, Globalisation and India's financial sector reforms. Scope of International Finance, Importance of International Finance.

2 World Financial Markets and Institutions: International Banking, International Bond Market, International Equity Market. Introduction to NASDAC.

3 Foreign Exchange Market - Structure of Foreign Exchange Market, Types of Transactions, Exchange Rate quotations and arbitrage, Interrelationship between Exchange and Interest Rate.

4. Exchange Rate Mechanism- Exchange rate quotations, Determination of exchange rate in spot market and forward market. Factors influencing exchange rate, Theories of Exchange Rate Behavior– Purchasing Power Parity, Interest Rate Parity,

5. Risks in International Operations : Exchange rate risk, Interest rate risk and political risk. Techniques of covering risks- Internal and External.

6. Exchange Control Regulations – Export Credit Guarantee Corporation – EXIM Bank – Foreign Exchange Dealers' Association of India – Convertibility,

7. Export Import Financing Mechanism – Buyers' Credit – Suppliers' Credit – Financing in foreign currency for exports and rupee finance

8. Financial Management of the Multinational Firm – Foreign Direct Investment – Cost of Capital and Capital Structure of a Multinational Firm - Multinational Capital Budgeting – Multinational Cash Management – Country Risk Analysis

– International Taxation – Double Taxation Avoidance Agreements Problems should be covered on following topics only.

a) Exchange Rate quotations and arbitrage

b) Determination of exchange rate in spot market and forward market. c) Techniques of covering risks

d) Multinational Capital Budgeting – Books Recommended

1. International Financial Management- Cheol Eun & Burce Resnick

2 Finance of International Trade – Alastair Watson, Paul Cowdell 3.International Corporate Finance- Madura (Cengage Learning)

4 International Finance – Mihir Desai ( Wiley India Edition)

4. International Finance – P.G.Apte

5. Exchange Control Regulations – Nabhi

6 Global Business Finance- V.A.Avadhani

7 International Financial Management- P.K Jain & others.

# MBA Part-II SEM. IV (CBCS)

## Group C HUMAN RESOURCE MANAGEMENT. PAPER – III

## INDUSTRIAL RELATIONS & LABOUR REGULATIONS

**1. Industrial Relation & Democracy –**

Definition and concept of industrial relation, scope, importance of industrial relations, Approaches to Industrial relations-Karl Mark's approach, Gandhian approach, Human Relations approach. **Collective bargaining-** meaning, definition, importance, types ,prerequisites of effective collective Bargaining & Collective Bargaining at different levels; **Workers participation:** Concept & meaning, Aims & objective, Forms & levels of participation, conditions essential of working of the scheme.

**2. Grievances & Disputes –**

**Industrial Dispute Act-1947**, Object Definition, Authorities, duties of authorities, Industrial Disputes-causes, remedial & prevention measures, settlement machinery,. Consequences of Industrial disputes on Industry & Society, Significance of Peace & Harmony to Industrial Productivity & progress, Grievances- concept, causes, Grievance procedure Disciplinary procedure

**3. Labour Welfare & Social Security Concept –**

Meaning & scope, Labour welfare & welfare officer role, duties and responsibilities, Social Security, meaning, importance Aims of social security ,methods of providing social security, evolution, origin and growth of the idea of social security.

**4. Labour Legislations & ILO –**

Meaning, objectives, Scope, growth & development of labour legislation In India, Constitution, working & impact of ILO on Labour Legislations in India, objectives of ILO

**5. Industrial Relations Legislations –**

**Factories Act 1948-** object of the act, applicability, provisions, **Trade Union Act 1926-** object of the act, applicability, provisions, registration , cancellation, re-registration, duties and liabilities of registered trade union, **Industrial Employment standing order Act 1946-** object of the act, applicability, provisions, pre-requisites

**6. Wage Legislation –**

**Minimum wages Act1948-** object of the act, applicability, provisions, fixation and revision of wages, fixing up of hours of work, **Payment Of wages Act 1936-** object of the act, applicability, provisions, authorities, obligation of the employer, rights of employer and employee, **Payment of Bonus Act 1965-** object of the act, applicability, provisions, definition, allocable surplus, appropriate government.

**7. Social Security Legislations –**

**Workmen's compensation Act -1923** object applicability, payment of compensation doctrine , **Employees state Insurance Act 1948-** object, applicability, provisions benefits, obligation of the employer, penalties and damages, recommendations and suggestions, **The Maternity Benefit Act, 1961**

**8. Social Security Legislations -**

**Provident Fund Act 1952**- object of the act, applicability, provisions, main features of the act, The Employees Pension Scheme 1995 , The Employee's Deposit Linked Insurance Scheme 1976 , **Payment of Gratuity Act 1972**

**Reference Books.**


1. Dynamics of Industrial Relations by Mamoria & Mamoria – Publisher: Himalaya Publishing House.
2. Industrial Jurisprudence & Labour Legislation by A.M. Sarma, 9 th revised edition – Publisher: Himalaya Publishing House
3. Industrial Relations and Labour Laws by P.C.Tripathi. C.B.Gupta, N.D.Kapoor-Publisher: Sultan Chand and Sons.
4. Labour Laws for Managers by B.D.Singh, Publisher- Excel Books
5. Industrial Relations and Collective Bargaining- Theory and Practices, Publisher- Deep & Deep Publications Pvt. Ltd.
6. Labour Welfare, Trade Unionism and Industrial Relation by Punekar, Deodhar and Sankaran, publisher Himalaya Publishing House

# MBA Part-II SEM. IV (CBCS)
## Group C HUMAN RESOURCE MANAGEMENT. PAPER – IV

### Performance Management & Compensation

1. **Performance Management -** Concept, scope, significance, Advantages of Performance Management(PM) process, Implication of PM process, PM framework.

**2Performance Appraisal –**Meaning, Need & Purpose, Who should appraise, When to appraise, Method to Performance appraisal- Trait Methods, Behavioural Methods, Result Method. |Ethical approach to appraisal, Use of Performance appraisal, Problem to appraisal, Essential characteristics of effective appraisal system.Appraisal Process, Challenges of appraisal, Legal issues associated to performance appraisal, Potential appraisal. Basic concepts in performance management and appraisal.

**3Assessment Centre** – Origin, Process of designing of assessment centre. Essential features of assessment centre, Accuracy of assessment centre, Development centre.

**4Job Evaluations / Grade Structure –** Meaning, objectives, Procedure of job evaluation, Methods to Job Evaluation – Non-Quantitative Methods- Ranking Systems, Job Classification / Grading method. Quantitative methods - Points rating, Factor Comparison Method, Advantages of job evaluation and problems to evaluation.

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**5Wage and salary administration –** Concepts, objectives, Principles, Wage & salary differentials, Components of remuneration, Challenges to remuneration.

**6Incentives** – Meaning, nature, scope, pre-requisites of an effective incentive system, Types of incentive schemes. Individual employee incentives and recognition programs - Piecework plans, Merit pay as an Incentives, Merit pay options, Incentives for professional employees, recognition based awards. Incentives for salespeople- salary plan, commission plan, combination plan, setting sales quotas, strategic sales incentives. Team/Group incentives. Incentives for managers and executives.

**7 Fringe Benefit**s: Meaning, Objectives, Types of fringe Benefits- Payment for time not worked, Employee Security, Safety & Health, Welfare Recreational facilities, Old age & Retirement benefits.

**8. HR Accounting** – Meaning, Objectives, need, methods of valuation of HRA, Benefits of HRA

**Reference books:**


1. Essentials of Human Resource Management by P. Subba Rao (PHP)
2. Human Resource Management, by Biswajeet Pattnayak (PHI)
3. Human Resource Management, by Gary Dessler Publication (PHI)
4. Human Resource Management by VSP Rao (Excel Books)
5. Human Resource Management by K Ashwathapa (Tata McGraw Hill)
6. Performance Management – Soumendra Narain Bagchi (Cengage)

# MBA Part-II SEM. IV (CBCS)

## Group C HUMAN RESOURCE MANAGEMENT. PAPER – V

### Global Human Resource Management

1) Global business and Human Resource: HR managers global challenge, Impact of inter country differences on HRM, Legal, political and labour relation factors, ethics and code of conduct.
2) Staffing the Global Organisation: International staffing, Off-shoring – meaning, offshoring & HR, international staffing policy- ethnocentric, polycentric, regiocentric, geocentric, Selecting expatriate managers, sending women managers abroad.
3) Recruitment and selection of international managers: Criteria for recruitment and selection, Gender & ethnicity in recruitment and selection, Online recruitment websites, Employee leasing and applicability, Headhunting.
4) Human resource practices in Multinational companies: Diffusability of employment practices- meaning, process.
5) International Pay and Reward: Meaning, Cross- national variation in reward structure, strategies in international rewards, best practice in international rewards, Steps in establishing a global pay system.
6) Managing HR in challenging times: International Labor Relations, Terrorism – safety and global HR, Kidnapping & Ransom Insurance, Traveling with Google Mps.
7) Knowledge management and IHRM: Meaning, Knowledge and knowledge transfer, Knowledge management in MNC, Knowledge management in IHRM.
8) International Corporate Social Responsibility and employment relations: HRM and corporate social responsibility, Brands and Multinationals, Codes of conduct: mandatory or voluntary?

**Reference Books:**


1) International Human Resource Management by 'Tony Edwards and Chris Rees'. – Pearson Publications
2) Human Resource Management by 'Gary Dessler and Biju Vakkey'.- Pearson Publication
3) Essentials of Human Resource Management by 'Indranil Mutsuddi'. – New Age International Publishers
4) International Human resource Management by 'P Subba Rao'. – Himalaya Publishing House

# MBA Part-II SEM. IV (CBCS)

Group D – System Management Paper-III

**Relational Database Management System**

1. Introduction -History : Advantages and limitations of RDBMS; Users of RDBMS,

Software Modules in RDBMS; Architecture of RDBMS.

2 Modeling Techniques: Different Types of Models, Hierarchical Database, Network Database, Relational Database Introduction, Comparison between HDB-NDB-RDB, ERD in detail.

3 Relational Database- Codd's Rules; Concept of Domain, Tuple, cardinality; Relational data model & relational algebra, Relational model concept, Relational model constraints, Relational Algebra

4 Relational Database Design- Database Design – ER to Relational Functional dependencies, Normalization- Normal forms based on primary keys (1 NF, 2 NF, 3 NF, BCNF, 4 NF, 5 NF), Advantages and Disadvantages of Normalization, Anomalies

5 SQL Basics- Basic Structure, Data Types, Operators- Arithmetic, Logical, Comparison. Functions- Date- Sys_date , next_day, Add_months, last_day, months_between,

Numeric- round, trunc, abs, ceil, cos, exp, floor
Character- initcap, lower, upper, ltrim, rtrim, translate, length, lpad, rpad, replace
Conversion- to_char, to_date, to_number
Miscellaneous- Uid, User, nvl, vsize, decode, rownum
Group function- avg, max, min, sum, count

6 SQL Commands- DDL commands-Create, Alter, Drop, Truncate, Rename, Constraints DML Commands- Insert, Update, Delete with where clause. Queries- SELECT Statement with all clauses, Subqueries and joins

7 Report Writing- Title, Btitle. Skip, set, pause, column, sql.pno, Break on, computer sum, set server output on

REFERENCE BOOKS:


1. An introduction to Database
2. Mastering SQL- Martine Gruber-BPB
3. Database System Concept
4. Database System-Connollytm-Pearson
5. Database Management System-P K Gupta-PHI
6. An Introduction to Database System-Date C J-Pearson
7. An Introduction to Database System-Bipin Desai-Galgotia

# MBA Part-II SEM. IV (CBCS)

Group D – System Management Paper-IV

## Security and control Information system

Security Concepts – Introduction, Need for security and control, risks to information system data and resources, Confidentiality, integrity, availability, Security policies, security mechanisms, assurance, types of Security Introduction

Cryptography – Introduction, Historical background, Transposition/ Substitution, Caesar Cipher, Introduction to Symmetric crypto primitives, Asymmetric crypto primitives, and Hash functions, Secret Key Cryptography, Data Encryption Standard (DES), Advanced Encryption Standard (AES)

Message Digests – Introduction, Applications, Strong and weak collision resistance, The Birthday Paradox, MD5, SHA-1

Operators – Arithmetic, Relational, Logical, Unary-Binary, Increment-Decrement, Assignment, Conditional. Operator Precedence

Authentication – Introduction, Basic concepts of identification and authentication, Password authentication, Authentication protocols

Trusted Intermediaries: Introduction, Public Key infrastructures, Certification authorities and key distribution centers, Kerberos

Real-time Communication Security Introduction, IPsec: AH and ESP, IPsec: IKE, SSL/TLS, and Firewall, Auditing and intrusion detection

Access Control- Introduction, Basic concepts of access control, Discretionary access control and mandatory access control, Lattice-based Models, Covert Channels, Role based Access Control

Security audit- Introduction, Assurance and Evaluation of Secure Information Systems, Database Security (Security requirements in databases, Access control and authorization in databases, Inference control), Malicious software, Administrating Security (Risk Analysis, Security Planning, Organizational, Security Policies

REFERENCE BOOKS:


- Charlie Kaufman, Radia Perlman, and Mike Speciner, *Network Security: Private Communication in a Public World*, *2nd Edition*, Prentice Hall, 2002, ISBN: 0-13-046019-2. (Price: USD 54.99)
- EDP Auditing by Ron Weber
- PC and LAN security by Stephan Cobb
- Enterprise Security- protecting information assets by Michael E. Kabey
- Enterprise Disaster Recovery Planning by Miora
- Computer Security for Dummies
- Internet Security by Derek Atkins et al
- Systems Audit - Revati Shrira

# MBA Part-II SEM. IV (CBCS)

Group D: System Management -**Paper V**

**Programming Concepts & Advanced Excel**

Programming Concepts :

1. Introduction to Programming, Structured Programming, Object Oriented Programming, Difference between Structured & OOP.
2. Algorithm, Flowchart, Identifiers, Data Types, Character Codes (ASCII).
3. Variable, Constant, Variable Declaration & Initialization, Expressions, Array ( single, Two-Dimensional)
4. Operators – Arithmetic, Relational, Logical, Unary-Binary, Increment-Decrement, Assignment, Conditional. Operator Precedence
5. Programming Construct – Branching Purpose, IF, IF-ELSE, Nested IF, SWITCH-CASE
6. Programming Construct – Looping Purpose, FOR, WHILE, DO-WHILE, Jump Statements – Break, Continue.
7. Functions – Definition and Purpose, Inbuilt functions, User-defined, Without Parameters, With Parameters, Return Statement, Local-Global variables, Recursion.

Advanced Excel

8. Revising Important Basic Functions, Advanced Functions – AND, OR, RAND, DGET, LOOKUP, VLOOKUP, HLOOKUP, Data Filter and Advanced Filter, Subtotals, Goal Seek, Solver, Scenario Manager, Data Tables, Pivot Tables. Security – Cell Level, Sheet Level, Book Level.

Reference Books:


1. Concepts, Techniques, and Models of Computer Programming by Peter Van Roy and Seif Haridi- MIT Press
2. Comdex Book on Excel
3. Microsoft Excel by Microsoft Press
4. Computer Today by Suresh K Basendra- Galgotia Publications Pvt. Ltd.
5. Computer Programming in C- V. Rajaraman- PHI Learning
6. Computer Concepts and Programming in C- J.B.Dixit

# MBA Part-II SEM. IV (CBCS)

Group E PRODUCTION & MATERIALS MANAGEMENT - PAPER III

**INDUSTRIAL ENGINEERING**

1. Productivity: - Production System. Definition of Productivity, Factors affecting productivity, Kinds of Productivity Measures, Increasing Productivity of Resources.

2. Work Study: - Definition and Concept, Objectives and need, Basic Procedure.

3. Method Study: - Need for method study, Procedure, Principles of motion Economy.

4. Recording of Method Study: - Use of various chart, Outline charts. Flow process chart for Worker and Materials and Equipment. Man-machine chart, Two hundred chart, SIMO Chart, Multiple Chart, Multiple Activity Chart, Travel Chart, String diagram.

5. Work- Measurement: - Technique of work, Measurement including estimating, Stop watch time study, Pre-determined time standards, Synthetic estimate of work times, Activity Sampling, Computation of Standard Time – Elements – Types of Elements – Performance Rating – Allowances – Types of Allowances.

6. Computation Of Standard Time :- Elements, Types of Elements, Performance Rating, Allowances, Need for Allowances, Types of Allowances.

7. Ergonomics: - Nature of, Factors in ergonomics, Socio-technical System.

8. Business Process Reengineering: Concept of BPR, process of BPR, prerequisites for effective BPR implementation, application of BPR in productivity improvement.

**Books Recommended :-**

1. Work Study – I.L.O.
2. Work study of Ergonomics – L.C. Jhamb
3. Work Study – Curie and Faraday
4. Industrial Engg. And Management – O.P.Khanna

# MBA Part-II SEM. IV (CBCS)

Group E – PRODUCTION & MATERIALS MANAGEMENT - PAPER IV

## QUALITY MANAGEMENT

1. Basic concept of Total Quality, Quality & Competitive Advantage, Quality Policy, Quality objectives, Leadership for Quality

2. Principles of Total Quality Management, Elements of Total Quality Management, Malcolm Baldrige National Quality Award Criteria, Benefits of Total Quality Management. Deming Management Philosophy, Deming's 14 Points for Management. The Juran Philosophy Juran Quality Trilogy, Crosby's Philosophy, Taguchi Loss Function.

2. Concepts of Quality Control, Acceptance Sampling, inspection plans, Statistical Process Control, Control charts, benefits of control charts.

3. Quality assurance, Quality Audit, Quality certification systems-Introductory treatment to ISO 9000,QS 14,000 and QS 9000 and other standards.

4. Management of Quality Circles and Zero Defect Program, Ishikawa Fish Done diagram, Pokka Yoke

5. Quality Improvement team, Role of workers, Supervisors and Management in TQM, Team building, cross functional teams.

6. Quality Costs-Analysis of various quality cost and losses, balance between cost of quality and value of quality.

7. Failure Analysts, functional linkage of Quality with Reliability and Maintainability.

8. Marketing aspects of TQM, Total quality of Service, Total quality and safety, Six Sigma.

**BOOKS RECOMMENDED:**


1. Statistical Quality Control-R.C.Gupta.
2. ISO 9000 Handbook-Ed.Robert Peach.
3. Total Quality control-Armond V.Flegenbaum.
4. ISO 9000 Quality management system-International Trade Center Geneva.
5. Six Sigma – Deepali Desai
6. Total Quality Management – K.Shridhar Bhat
7. Quality Management – Gitlow, Opperheim
8. Quality Control - Dale H Bester field – Pearson Education
9. The essence of Total Quality Management – Hunsen & Ghare
10. Managing for Total Quality – Logothetic
11. Manuals of various standards.

# MBA Part-II SEM. IV (CBCS)

Group E - PRODUCTION & MATERIALS MANAGEMENT -PAPER V

**WORLD CLASS MANUFACTURING**

1. World Class Manufacturing Environment, Imperatives for success, System approach and change in mindset, Strategic decisions in Manufacturing Management. Choice of technology, Capacity and layouts, Automation in Material handing system.

2. State of international business Excellence, Globalization and Global Companies.Managerial attitude towards globalization of business, entering the international area, Managerial challenges for the future, Experience of Indian Companies in World Class Manufacturing

3. Characteristics of WCM companies**,** what is world class Performance – Six Sigma philosophy, Concepts of benchmarking and best practices

4. Lean Production, Principles advocated in just-in-time system, JIT, manufacturing system , JIT pull system, use of kanban system, JIT purchase, source development, supply chain management.

5. Human Resource Management in WCM: Adding value to the organization. Organizational learning, People as problem solvers, New organizational structures. Associates and Facilitators, Motivation and reward in the age of continuous improvement.

6. Total productive maintain concept of reliability , reliability improvement, concept of maintainability and maintainability improvement.

7. Automation in design and Manufacturing, Role of IT in World class Manufacturing, Concept of Flexible Manufacturing System, Group technology, Cellular Manufacturing Systems.

8. Environment Pollution, Factors causing Pollution, Effect on human health, Control of environment Pollution.

**BOOKS RECOMMENDED:**


1. World Class Manufacturing – K. Shirdhar Bhat
2. Management today- Burton and Thakur.
3. Operation Management- Hughes, Chris.
4. Supply Chain Management for competitive advantage – R. Raghavan
5. World Class Manufacturing - Strategic Perspective - B.S. Sahay, KBC Saxena, Ashish Kumar. (Mac Milan)
6. Making Common Sense Common Practice – Models for manufacturing excellence – Ron Moore (Butter worth Heinmann)
7. The Toyota Way - Jeffrey K.Liker – (Tata McGraw Hill)
8. Just In Time Manufacturing – M.G.Korgaonkar

# MBA Part-II SEM. IV (CBCS)

Group F – Agriculture & Cooperative Management Paper-III

## AGRICULTURAL PRODUCTION MANAGEMENT

Chapter I: Agriculture and Productivity Trends: -

Occupational Structure, Agricultural Production and productivity trends, Causes for low productivity.

Chapter II: Fundamentals of Farm Management:

Scope of modern agriculture, special features of agricultural and industrial production, difference between farm and non-farm business management

ChapterIII: Farm production systems and management functions:

Peasants, proprietorship, co-operative farming. Capital farming, corporate farming. Land tenure systems and agricultural production management

Chapter IV: Farm Economics:

Demand for agricultural products, Production and supply of farm product- Production function and its type, Law of Diminishing Returns Input combinations; Production management decision-Factor-factor decisions, factor-products decision, product-product decision, relationship between outputs.

Chapter V: Farm Technology:

Effects of new technology, management and technology change, gains from technological improvement to producers and consumers, mechanism and automation. Green houses

Chapter VI: Cost of Production:

Farm records, Farm Accountancy, Farm Inventory, Depreciation, Farm Efficiency and measures. Problems on cost estimation

Chapter VII. Issues in Farm Management:

Size-Productivity debate, Measurement of farm efficiently, Irrigation Management, Production Planning -Specialisation and diversification

Books Recommended:

1. Robertson C.A.-An Introduction to Agricultural Production Economics and Farm Management -Tata Mcgraw Iii11.
2. Heady, Earl O and Jensen Herald R-Farm Management Economics - Prentice Hall
3. Barnard C.S. and Nix J.S,-Farm Planning and Control
4. Blake C.D.-Fundamentals of Modern Agriculture
5. Sandhu and singh - Fundamentals of Agriculture
6. Agrawal A.N.-Indian Agriculture
7. Sharma A.N. and Sharma V.K.-Elements of Farm Management.

# MBA Part-II SEM. IV (CBCS)

Group F – Agriculture & Co-operative Management Paper-IV

## AGRO- PROCESSING INDUSTRIES & RURAL INDUSTRIALIZATION

1, Rural Industrialization: Meaning of Rural Industrialization, Role of Agriculture in Rural Industrialization, Dependence on Agriculture, Policies for Agro development, Socio- Eco benefits of Rural Industries, Promotional measures, Need, Opportunities & Constraints

2: Rural Industries

Cottage & Small Scale Industries, genesis of Development of their Industries, Classification: Village & cottage of SSI, SSI: Role of SSI, Problems of SSI, Performance: Production, Employment, Export.

3: Khadi and Village Industry Corporation

Introduction of KVIC, Organization & Administration of KVIC, Promotional measures of KVIC, Subsidies, Incentives, Financial Inputs.

4 Introduction of Agro Processing Cooperatives

Importance & Functions, Pattern of Organization & Management, Growth & Development, Recent positions, Difficulties & problems, role of Agriculture cooperative.

5 Agriculture Produce Pricing

Market forces: - Demand, Supply. Simple market model and Price Determination:-Tabular Approach, Graphical Approach. Fluctuations in Agriculture Prices, causes & Impact, Price Stabilization, trends in Agri Prices.

6 WTO & Its impact on Agro-based Industries

External trade in Agriculture Products, Share in export, Challenges, AOA, Role of Reserve Bank of India In the Agriculture Credit National Bank for agriculture and Rural Development (NABARD)

7 : Agro Processing Cooperatives in Maharashtra

Cooperative Sugar Industries, Cooperative Spinning Mills, Dairy Cooperatives, Fishery Cooperatives, Industrial Cooperative Management, Problems & Prospects for agro processing cooperatives.

8: Rural Credit

Need, Objectives, Sources of Agricultural Finance, Rural indebtness, Factor analysis and implications, systems of rural and agricultural credits in India. Non Agricultural Credit Sector Urban Co-operative Banks: - objects, working of the society Urban Credit societies:- objects, working ,Employees credit societies: -objects, working

Books Recommended:

1. Acharya S. S & Agarwal N. L – Agricultural Marketing in India
2. Dasgupta S.-Diffusion of Agricultural Innovation in village India
3. Desai Vasant – Rural Development
4. Dholkia R. H & Iyengar- Planning for rural Development Issues & Case Studies
5. Hanumantha Rao C. H.- Technological Change & Distribution of Gains in Indian Agriculture.
7 Mamoria,-Agriculture Problems in India,

# MBA Part-II SEM. IV (CBCS)

Group F- Agriculture & Co-operative Management Paper – V

**INTERNATIONAL TRADE AND AGRICULTURE**

Chapter I. Scope and gains from International trade ; Theory of comparative advantages ; trade and welfare; factor mobility ; International capital flows; transfer of technology; Terms of credit, comparative cost.

Chapter II. Trade Policies; tariffs & Quota, Effects of Tariff Monopoly and price discrimination state Trading; Bilateral Trade; Multilateral Trade.

Chapter III. Organisation and Objectives of International Organisation like IMF, IBRD, IDA, IFC, & their Affiliate s; The SDR Mechanism and its working; international liquidity problem; international monetary system & trade, GATT, UNCTAD. WTO, Organisation & their functions.

Chapter IV. World Trade Agreements, trade liberalization, Regional Integration & Economic Growth; Import -Export Procedure; Strategies of Exports for agro based industries.

Chapter V. India's position in the Global market; Loading Agriculture Produces/products for Export Earnings; importing countries of these products; Competing Countries; Strategies to Boost Exports.

Chapter VI. Processing; AGMARK Grading & Quality Control Packaging, Brand Names; Labelling; Sales Promotion with the country & outside the country.

Chapter VII. SWOT Analysis for each of the commodities mentioned below from the point of the view of exports:

A] Cereals--Important crops like wheat, rice, etc…

B] Pulses--Important crops like grams, moong, urd, etc...

C] Oil seeds important crops like soybean, mustard, ground nuts, linseed etc…

D] Commercial Crops --Important crops cotton, jute, sugarcane, textiles, chillies, Onion, potato, etc…

E] Horticulture crops--Important fruits like apple, banana, mango, grapes, pomegranates, etc…

F] Vegetables--Important crops like tomato, brinjal, cauliflower, cabbage, etc… REFERENCE BOOKS:

1. Agricultural Research Through International Co-operatives---Ravi Shrivastav & G.C. Shrivastav
2. International Economics-- Dominik Salvatore
3. Export Management --Prof. Laxmi Narayn
4. Changing Prospective in Indian Agriculture-Bhanushali S.G. & Pujari A.G.

# MBA Part-II SEM. IV (CBCS)

Group G - INTERNATIONAL BUSINESS

**INTERNATIONAL MARKETING – PAPER III**

1. **Introduction**: Nature, importance, objectives and scope of international marketing International market orientation and involvement, Challenges and opportunities in International Marketing, International marketing management process – an overview.
2. **International Marketing Environment** : Influence of physical, economic socio - cultural, political and legal environments on international marketing operations; Scanning and monitoring global marketing environment; International marketing information system. Market selection, International Market entry rategies.
3. **International Market Segmentation and Positioning**; Screening and selection of markets; International market entry strategies -Exporting licensing contract manufacturing, joint venture, setting -up of wholly owned subsidiaries aboard.
4. **International Product Planning**: Major Product decisions-Product features and quality, Product design, labeling, packaging, branding and product support services; Product standardization vs. adaptation; Managing product line; International trade product life cycle; New product development.
5. **Pricing for International Markets** : Factors affecting international price determination; International pricing process and policies; Delivery terms and currency for export price quotations; Transfer pricing.
6. **International Distribution Decisions** : Distribution channel strategy-International distribution channels, their roles and functions; Selection and management of overseas agents; International distribution logistics inventory management Transportation, warehousing and insurance.
7. **International Promotion Strategies** : Communications across countries-complexities and issues; International promotion tools and planning – Advertising, personal selling, publicity and sales promotion; Developing international promotion campaign; Standardistion vs. adaptation issue; Planning for direct mail, sales literature, trade fairs and exhibitions. Brand management
8. **International Marketing Planning, Organising and Control:** Emerging trends in international marketing; International Marketing through Internet; Ecological concerns and international marketing ethics.
9. **International Marketing Research:** Nature, scope and complexities of marketing research; marketing research in international context-importance; International Marketing Information System (IMIS).

***Books Recommended***


1. International Marketing - Rathor Jani Rathor
2. International Business - P. Suhbarau
3. Global marketing Strategy - Jeannet & Hennssey
4. Managing International Marketing - Dr. V. O. Varkey
5. Modern Marketing Research - M. N. Mithani
6. Marketing Research - G. C. Berry
7. Marketing Research: Applied Orientation. - Naresh Malhotra
8. Marketing Research - Boyd, Westfall & Stasch
9. Creating Market across the Globe: Strategies for business excellence – Korwar
10. Essence of International Marketing –Stan Paliwoda.
11. Global Marketing Management-Warren J. Keegan.
12. International Marketing Management-Subhash Jain.
13. International Marketing Micheal- R Czinkota, IIkka A Ronkainen
14. .International Marketing, R.M. Joshi

# MBA Part-II SEM. IV (CBCS)

Group G - INTERNATIONAL BUSINESS

## INTERNATIONAL FINANCIAL SYSTEM AND MARKETS –PAPER IV

1. **Introduction to International Financial System**: International Finance Management: Need and Importance; International Monetary System: Features and requirements; System of exchanging currencies – From Bretton Woods system to free float and convertibility; Fixed-Flexible Exchange Rate Systems; European monetary system; International liquidity. Recent changes in global financial markets.

2. **Foreign Exchange Markets and its Activities:** : Meaning of the Term "Foreign Exchange", Exchange Market, Introduction to Exchange Rate Mechanism: Spot- Forward Rate,Exchange rate quotations and practices; Foreign exchange market activities; Arbitraging, hedging and speculation. Forwards, Swap[s, Futures and Options.

3. **Exchange Rate Determination:** Exchange rate determination in spot and forward market – Interest rate parity (IRP), purchasing power parity, Fisher open equation Monetary and portfolio balance approaches; Short run demand and supply theory, BOP theory, and growth theory; Forecasting exchange rate. Factors affecting exchange rates.

4. **International Financial Markets and Instruments:** Changing scenario; International capital and money market instruments; International development banking; Euro – currency markets; International securities markets and instruments -Bond and notes market; equity market, GDR, ADR, EDR and IDR; Integration of financial markets and approach; Role of financial intermediaries.

5. **International Debt Problem:** Problem of debt servicing and developing countries (with special reference to India). India's Forex Scenario: BOP crisis of 1990; Forfeiting / Factoring,

6. **Managing Company Finance:** Complexities and issues in financial decisions of a multinational firm: Foreign investment decisions: Exchange rate movement and decision to invest; Commercial Borrowings: export finance, import finance, Buyers Credit, Suppliers Credit,
Foreign investment Management: FDI.

***Books Recommended** :*


1. Foreign Exchange Management - H.P. Bhardwaj
2. International Financial Management - P. G. Apte
3. International Financial Management - V. K. Bhalla
4. Multinational Finance - K. C. Bulter
5. International Financial Management - A. K. Seth
6. Multinational Financial Management – Shapiro Allen
7. International Financial Management – V. Sharan

# MBA Part-II SEM. IV (CBCS)

Group G- INTERNATIONAL BUSINESS

**INTERNATIONAL LOGISTICS –PAPER V**

1. **INTRODUCTION:**

International Logistics and Supply chain management: meaning and objectives, importance in global economy , Characteristics of global supply chains,: Supply chain relationship to business performance, -Key tasks of logistics and supply chain managers, Role of Government in controlling international trade and its impact on Logistics and supply chain

2. **SUPPLY CHAIN STRATEGY AND PLANNING:**

Supply chain as a competitive advantage, Global Supply chain strategy, Structuring supply chain capabilities, Business matching supply chain design with business strategy; Planning the global supply chain, Measuring logistics cost and performance. Benchmarking the supply chain, Performance measurement and evaluation in global supply chains

3. **TRANSPORTATION:**

Strategic importance of transport in global logistics, logistical objectives of transport, International Ocean Transportation, International Air Transportation, and International Land Transportation: types, characteristics and salient features, international shipping - characteristics and structure; intermodal transportation in international operations, factors influencing mode and carrier selection decision,

4. **OUTSOURCING AND LOGISTICS SERVICE PROVIDERS**

Intermediaries and Alliances in Global Logistics, Meaning of 3 PL and 4 PL service providers, role in Global logistics, types of services, considerations for hiring 3PL and 4 PL service providers. Concept and need of outsourcing, determinants for outsourcing decisions, role of outsourcing in global supply chain management

5. **CUSTOMER SERVICE:**

The marketing and logistics interface, customer service and customer retention, Service driven logistics systems, customer service priorities and standards, customer service strategy, managing relationships with buyer and seller.

6. **INVENTORY FLOW AND WAREHOUSING:**

Approaches to Inventory Management in Global Supply Chain Management; Distribution Resource Planning; Symptoms of poor Inventory Management, Modeling in Supply chain: inventory models, safety stock determination for service level, and lead time; forecasting models, routing problem; Objectives and functions of warehousing; Warehousing evaluation and requirements; Warehousing location strategies

7. **COORDINATION IN SUPPLY CHAIN**:

Importance of Coordination in Supply Chain, Bullwhip Effect, Effect of lack of Coordination on performance, Obstacles to Coordination, Strategies to achieve coordination, Building Strategic Partnership and Trust In Supply Chain

8. **INFORMATION TECHNLOGY IN SUPPLY CHAIN:**

Role and Importance of IT in Supply Chain Management, IT solutions for Supply Chain Management, Supply Chain Information Technology in Practice, MR, DRP, ERP, PDM, EIP and CPFR. Future trends in logistics.

**9. PERFORMANCE MEASUREMENT AND TRENDS**

Dimensions of Performance Metrics, Approaches/tools for Performance Measurement, Measuring logistics cost and performance. Benchmarking the supply chain, Performance measurement and evaluation in global supply chains, Impediments to improve Performance, Trends in International supply chain management.

**Suggested Readings:**


1. Ballau, R.H., Business Logistics Management, Prentice Hall, Englewood Cliffs, 1992.
2. Cristopher., M., Logistics and Supply Chain Management: Strategies for Reading Cost and improving Services, Pitsman, London, 1992.
3. James, C.J. and D.F. Wood, Contemporary Logistics, Macmillan, New York, 1990.
4. Shapiro, R., Logistics Strategy: Casses and Concepts, West Publishing, St. Paul, 1995.
5. Stern, L.W., et. al., Marketing Channels, Prentice Hall of India private Ltd. New Delhi, 1996.
6. Douglas Long International Logistics: Global Supply Chain Management Springer-Verlag New York, LLC;2004
7. Philippe-Pierre Dornier, Panos Kouvelis, Michel Fender Global Operations and Logistics: Text and Cases Wiley, John & Sons, Incorporated 1998
8. Alan Branch Global Supply Chain Management in International Logistics Routledge 2007
9. Kent N. Gourdin Global Logistics Management: A Competitive Advantage for the New Millennium Blackwell Publishing 2006

# Solapur University, Solapur


## Faculty of Commerce and Management.

## Master of Business Administration (MBA)

## Choice Based Credit System (CBCS)

(June, 2017)

**SOLAPUR UNIVERSITY, SOLAPUR**
**MASTER OF BUSINESS ADMINISTRATION**
**(M. B. A. Part I Sem. - I and II) Semester Pattern**
**(Choice Based Credit System) June 2017**

## 1. Objectives

The basic objectives of an M.B.A. course are-

1) To provide competent young men and women with necessary knowledge, skills, values and attitudes to occupy positions of management and administration in business.
2) To impart the students latest and relevant knowledge from the field of management theory and practice.
3) To provide opportunities to the students for developing necessary managerial skills.
4) To impart/ develop the right kind of values and attitude to function effectively in Managerial/ administrative positions.
5) The course is conducted with semester system which includes Four semesters with following purposes:
    a. Generic core modules in semester I provide Foundation of Management.
    b. Generic core modules in semester II focuses on preliminary knowledge of all the functional areas.
    c. Elective Subject Modules in semester III and IV focus on in-depth knowledge and practical approach with respect to the selected specializations along with Some Advanced Management related modules applicable in all streams of managerial careers.

## 2. Eligibility for Admission

1) Candidate should have passed with minimum 50% marks in aggregate (45% marks in case of Backward class candidates from Maharashtra State only) in any full time Bachelor's Degree of Minimum 3 years duration in any discipline recognized by Association of Indian Universities.
2) Obtained score in one of the following CET examinations conducted by the Competent Authority. CET conducted by the Competent Authority, MBA/MMS CET by Maharashtra State Competent Authority, Graduate Management Aptitude Test Conducted by Graduate Management Admission Council, United States of America (GMAT), Common Admission Test conducted by Indian Institute of Management (CAT), Management Aptitude Test Conducted by All India Management Association (MAT),

Entrance Test for Management Admissions conducted by The Association of Indian Management Schools.(ATMA), Xavier Aptitude Test conducted by Xavier School of Management Jamshedpur (XAT) and Common Management Aptitude Test Conducted by All India Council for Technical Education (CMAT).

3) Candidate should have completed the admission related process as prescribed by the Competent Authority

## 3. Choice Based Credit System

With the view to ensure worldwide recognition, acceptability, horizontal as well as vertical mobility for students completing post graduate degree, the Solapur University is implementing **Choice Based Credit System** (CBCS) of Evaluation at Postgraduate level.

CBCS offers wide ranging choice for students to offer courses based on their aptitude and their career goals. CBCS works on the fundamental premise where students are matured individuals capable of making their own decisions.

Credit is a numerical value that indicates student's work load (Lectures, Seminars, Assignments, Group Exercises, seminars, mini projects etc.) to complete a course unit. In most of the universities 15 contact hours constitute one credit. The contact hours are transformed into Credits. As per present norms, there are 4 contact hours per paper (subject) per week which works out to be 60 contact hours per paper (subject) per semester.

In Solapur University, for M.B.A-I, there are 8 compulsory subjects and each subject has 4 contact hours per paper (subject) per week. Therefore, total contact hours per week are 32. The evaluation process includes a 70 + 30 pattern wherein the candidate has to appear for University Evaluation for 70 marks and a Continuous Internal Evaluation of 30 marks. This format is applicable for theory as well as practical subjects.

**4. MBA Course Structure:**

| SEMESTER - I | | | | | | SEMESTER – II | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks | Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks |
| I. | Principles of Management | 4 | 30 | 70 | 100 | IX. | Marketing Management | 4 | 30 | 70 | 100 |
| II. | Accounting for Managers | 4 | 30 | 70 | 100 | X. | Financial Management | 4 | 30 | 70 | 100 |
| III. | Managerial Economics | 4 | 30 | 70 | 100 | XI. | Human Resource Management | 4 | 30 | 70 | 100 |
| IV. | Organisational Behaviour | 4 | 30 | 70 | 100 | XII. | Production Management and Operational Research | 4 | 30 | 70 | 100 |
| V. | Statistics for Management | 4 | 30 | 70 | 100 | XIII. | International Business | 4 | 30 | 70 | 100 |
| VI. | Managerial Communication-I | 4 | 30 | 70 | 100 | XIV. | Managerial Communication-II | 4 | 30 | 70 | 100 |
| VII. | Legal Aspects of Business | 4 | 30 | 70 | 100 | XV. | Research Methodology | 4 | 30 | 70 | 100 |
| VIII. | IT for Management* | 4 | 30 | 70 | 100 | XVI. | Event Management * | 4 | 30 | 70 | 100 |
| VIII. | Taxation* | 4 | 30 | 70 | 100 | XVI. | Banking and Insurance* | 4 | 30 | 70 | 100 |

* Students can choose any one subject among the two as Choice Based subject. Both the subjects should be conducted simultaneously. However Minimum of 10 students should opt for the subject in the respective institute for conducting the subject. University Paper for both the subjects will be held on the same day.

| SEMESTER – III | | | | | | SEMESTER – IV | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks | Paper No. | Subject | Weekly Theory | Internal Marks | Uni Exam Marks | Total Marks |
| 17 | Corporate Planning & Strategic Mgt | 4 | 30 | 70 | 100 | 25 | Entrepreneurial Development | 4 | 30 | 70 | 100 |
| 18 | Management Accounting | 4 | 30 | 70 | 100 | 26 | Total Quality Management | 4 | 30 | 70 | 100 |
| 19 | Business Ethics | 4 | 30 | 70 | 100 | 27 | Elective-I Paper-III | 4 | 30 | 70 | 100 |
| 20 | Project Report & Viva | - | 50 | 50 | 100 | 28 | Elective-I Paper-IV | 4 | 30 | 70 | 100 |
| 21 | Elective-I Paper-I | 4 | 30 | 70 | 100 | 29 | Elective-I Paper-V | 4 | 30 | 70 | 100 |
| 22 | Elective-I Paper-II | 4 | 30 | 70 | 100 | 30 | Elective-II Paper-III | 4 | 30 | 70 | 100 |
| 23 | Elective-II Paper-I | 4 | 30 | 70 | 100 | 31 | Elective-II Paper-IV | 4 | 30 | 70 | 100 |
| 24 | Elective-II Paper-II | 4 | 30 | 70 | 100 | 32 | Elective-II Paper-V | 4 | 30 | 70 | 100 |

Total Subject Heads: 32 Total Marks: 3200

**Elective Specializations:** Student has to select any Two of the three groups A, B, C and any one specialization subject from a selected group

| Group | Elective Specialization Subjects |
|---|---|
| A | • Marketing Management |
| B | • Financial Management<br>• Production and Materials Management |
| C | • Human Resource Management<br>• International Business Management<br>• Systems Management<br>• Agriculture & Co-operative Management |

**5. Schedule of Teaching and Examination:**

This is full time, Masters Degree program. The curriculum of the course is of Two years divided into Four semesters. The teaching for Semester I and III should be conducted from 20th July to 20th November and teaching for Semester II and IV should be conducted from 1st January to 20th April. There will be an End of Semester University Examination in December and May for all Semesters. In addition there will be internal assessment for each paper conducted by the respective institute.

**6. Internal Evaluation**

The internal evaluation will be undertaken on continuous basis for 30 marks and will consist of following heads scaled down to mentioned weight-age of marks

| Elements for Continuous Internal Evaluation | Marks |
|---|---|
| Seminar / Group Exercises (Minimum 4) | 10 Marks |
| Case Studies (Minimum 4) | 10 Marks |
| Assignments (Minimum 2) | 05 Marks |
| Attendance / Library Exercise | 05 Marks |
| **Total** | **30 Marks** |

The internal evaluation should be done by the institute accordingly throughout the semester and internal marks shall be send to the university through Online Portal before the End of Semester Examination

**7. Passing Criteria and ATKT Rules:**

- Every student must secure a minimum of 40% marks for each subject in End of Semester University Examination and Continuous Internal Evaluation separately for passing in the respective subject.
- The student has to secure a minimum of 4.0 grade points (Grade C) in each paper. A student who secures less than 4.0 grade point (39% or less marks, Grade FC/FR) will be declared 'Fail' in that paper (subject) and shall be required to reappear for respective paper.
- A student who fails in University Examination (Theory) & passed in Continuous Internal Evaluation of the same paper (subject) shall be given FC Grade. Such student will have to reappear for University Examination Only.

- A student who fails in Continuous Internal Evaluation and passed in University examination (Theory) shall be given FR Grade. Such student will have to re-appear for both University examination as well as Continuous Internal Evaluation.

The M.B.A. examination will be held in four semesters. The student will eligible to appear for the examination with a minimum attendance of 75%.

a. A candidate failing in any number of subjects of Semester I, may be allowed to keep the term for Semester-II
b. A candidate seeking admission to Semester III shall not have failed in more than Five subjects of Semester I & Semester II put together.
c. A candidate failing in any number of subjects of Semester III may be allowed to keep the term for Semester IV.
d. A candidate will not be awarded degree unless he/she has passed all subjects of all the semester examinations.

**8. Conversion of Marks into Grades:**

A table for the conversion of the marks obtained by students in each paper (out of 100) to grade and grade points is given below:

| Sr. No. | Range of Marks | Grade | Grade Points |
|---|---|---|---|
| 1 | 80 – 100 | O | 10 |
| 2 | 70 – 79 | A + | 9 |
| 3 | 60 – 69 | A | 8 |
| 4 | 55 – 59 | B + | 7 |
| 5 | 50 – 54 | B | 6 |
| 6 | 45 – 49 | C + | 5 |
| 7 | 40 – 44 | C | 4 |
| 8 | <=39 | FC | 0 - Failed in Semester Exam |
| 9 | <=39 | FR | 0 - Failed in Internal Assessment |

**9. Conversion of Average Grade Points into grades:**

The student's performance of course will be evaluated by assigning a letter grade on ten points scale as given below:

| CGPA / CBCS / FGPA / SGPA | Letter Grade |
|---|---|
| 9.5 – 10 | O |
| 8.5 – 9.4 | A + |
| 7.5 – 8.4 | A |
| 6.5 – 7.4 | B + |
| 5.5 – 6.4 | B |
| 4.5 – 5.4 | C + |
| 4.0 – 4.4 | C |
| < =3.9 | FC |
| < =3.9 | FR |

**10. Additional Specialization:-**

A student who has passed the M.B.A. Examination of this University with any two electives may be allowed to appear for the M.B.A. examination again, in any other one elective, by keeping terms for the third and fourth semester for that special group i.e. for papers comprising of 500 marks, by paying (40%) of the Tuition Fees for that academic year.

**11. Improvement in Marks:**

A student who has passed the MBA examination of this university and has secured less percentage in the last year may be allowed for class improvement in any of the two subjects of last year.

**12. Degree Completion:**

In case a student fails to complete the degree within the stipulated period of 4 years, such a student will be declared INCOMPLETE EXIT and in such a case the student can seek a fresh admission as per the admission rules prevailing at that time.

**13. University Question Paper Pattern:**

The University Examination for all papers will be of 70 marks in the following pattern:

The Question Paper Consists of 7 questions of 14 marks each, of which 5 questions are to be answered

- Q. No. 1 will be compulsory question based on Case Study / Broad Numerical Problem in case of some specific subjects.
- Q. No. 2, 3 & 4 will be short answer questions. Candidate has to attempt any Two of these Three questions. Each question will contain 3 sub-questions of 7 marks each of which any two can be attempted.
- Q. No. 5, 6 & 7 will be broad answer questions. Candidate has to attempt any Two of these three questions.

**Question Paper Pattern:**

Q. 1: Compulsory Question – *Case Study / Broad Numerical Problem* **(14)**

Q. 2: Attempt any Two of the Following: (*Short Questions / Short notes*) **(14)**

a.

b.

c.

Q. 3: Attempt any Two of the Following: (*Short Questions / Short notes*) **(14)**

a.

b.

c.

Q. 4: Attempt any Two of the Following: (*Short Questions / Short notes*) **(14)**

a.

b.

c.

Q. 5: *(Broad Answer Question)* **(14)**

Q. 6: *(Broad Answer Question)* **(14)**

Q. 7: *(Broad Answer Question)* **(14)**

# Solapur University, Solapur


**Faculty of Commerce and Management**

## Master of Business Administration (MBA)

**Syllabus for Year II Sem. III & IV**

**Choice Based Credit System (CBCS)**

(w.e.f. June, 2018)

# Solapur University, Solapur

## MBA Part II Syllabus (CBCS) with effect from 2018-19

| Semester III | | | | | | Semester IV | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Paper No. | Subject | Weekly Theory/ Credits | Internal Marks | Univ. Exam Marks | Total Marks | Paper No. | Subject | Weekly Theory/ Credits | Internal Marks | Univ. Exam Marks | Total Marks |
| 17 | Strategic Management | 04 | 30 | 70 | 100 | 25 | Entrepreneurship Development | 04 | 30 | 70 | 100 |
| 18 | Management Accounting | 04 | 30 | 70 | 100 | 26 | Quality Management | 04 | 30 | 70 | 100 |
| 19 | Skill Development | 04 | 30 | 70 | 100 | *27 | *Elective I - Paper III* | 04 | 30 | 70 | 100 |
| 20 | Project Report & Viva | -- | 50 | 50 | 100 | *28 | *Elective II - Paper-III* | 04 | 30 | 70 | 100 |
| *21 | *Elective I - Paper I* | 04 | 30 | 70 | 100 | *29 | *Elective I - Paper IV* | 04 | 30 | 70 | 100 |
| *22 | *Elective II - Paper-I* | 04 | 30 | 70 | 100 | *30 | *Elective II - Paper-IV* | 04 | 30 | 70 | 100 |
| *23 | *Elective I - Paper II* | 04 | 30 | 70 | 100 | *31 | *Elective I - Paper V* | 04 | 30 | 70 | 100 |
| *24 | *Elective II - Paper-II* | 04 | 30 | 70 | 100 | *32 | *Elective II - Paper-V* | 04 | 30 | 70 | 100 |

*** Electives:**

| Group | Elective Specialization |
|---|---|
| A | • Marketing Management |
| B | • Financial Management<br>• Production and Materials Management |
| C | • Human Resource Management<br>• International Business Management<br>• Systems Management<br>• Agriculture & Co-operative Management |

- **Elective Specializations:** Student has to select **ANY TWO** of the Three Groups **A, B, C** and **ANY ONE** specialization subject from a selected group

**Elective Specialization Groups with Subjects Papers:**

| Group | Specialization | Paper | Subject |
|---|---|---|---|
| A | **Marketing Management** | I | Brand Management and Social Marketing |
| | | II | Sales and Distribution Management |
| | | III | Integrated Marketing Communications |
| | | IV | Services and Retail Marketing |
| | | V | International Marketing |
| B | **Financial Management** | I | Indian Financial System |
| | | II | Financial Decision Analysis |
| | | III | Project Planning and Management of Financial Services |
| | | IV | Investment Management |
| | | V | International Finance |
| | **Production and Materials Management** | I | Purchasing and Inventory Management |
| | | II | Logistics and Supply Chain Management |
| | | III | Industrial Engineering |
| | | IV | Quality Management |
| | | V | World Class Manufacturing |
| C | **Human Resource Management** | I | Strategic Human Resource Management |
| | | II | Human Resource Initiatives |
| | | III | Industrial Relations and Labour Laws |
| | | IV | HRD and Compensation Management |
| | | V | International Human Resource Management |
| | **International Business Management** | I | International Business Environment |
| | | II | Export Policy, Procedures and Documents |
| | | III | International Marketing |
| | | IV | EXIM Management |
| | | V | International Logistics |
| | **Systems Management** | I | Management Information System |
| | | II | ERP and SPD |
| | | III | Relational Database Management System |
| | | IV | Security And Control Information System |
| | | V | Programming Concepts and Practices |
| | **Agriculture & Co-operative Management** | I | Fundamentals of Agriculture & Co-Operative Management |
| | | II | Agricultural Marketing |
| | | III | Agricultural Production Management |
| | | IV | Agro- Processing Industries & Rural Industrialization |
| | | V | International Trade And Agriculture |

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NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Mechanical Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968339 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1. | T.E. Mechanical Engineering | Yes (Elective) | 2014-15 |
| 2. | B.E. Mechanical Engineering | Yes (Elective) | 2015-16 |

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# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## Mechanical Engineering

## Structure of T.E. (Mechanical Engineering) w.e.f. from2014-15

### Semester-I

| Sr.No. | Subject | Teaching / Week | | | | | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Dr | Total | TP | TW | OE | POE | Total |
| 1 | Theory of Machine –II | 3 | | 2 | | 5 | 100 | 25 | 25 | | 150 |
| 2 | Heat and Mass Transfer | 3 | | 2 | | 5 | 100 | 25 | | 25 | 150 |
| 3 | Metallurgy | 3 | | 2 | | 5 | 100 | 25 | 25 | | 150 |
| 4 | Machine Design – I | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 5 | Professional Elective - I | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 6 | Advanced Computer Programming-I | 1 | | 2 | | 3 | | 25 | | | 25 |
| 7 | Workshop Practice – IV | | | 2 | | 2 | | 25 | | | 25 |
| 8 | Self Learning (HSS) | | | | | | 50 | | | | 50 |
| **Total** | | **16** | | **14** | | **30** | **550** | **175** | **50** | **25** | **800** |

| | | | |
|---|---|---|---|
| **Professional Elective I** | Machine Tool Design | Fluid Machinery and Fluid Power | Material Handling Systems |

### Semester-II

| Sr.No. | Subject | Teaching / Week | | | | | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Dr | Total | TP | TW | OE | POE | Total |
| 1 | Metrology and Mechanical Measurements | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 2 | Internal Combustion Engine | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 3 | CAD/CAM | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 4 | Machine Design – II | 3 | | 2 | | 5 | 100* | 25 | 25 | | 150 |
| 5 | Professional Elective –II | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 6 | Advanced Computing Techniques-II | 1 | | 2 | | 3 | | 25 | | | 25 |
| 7 | Workshop Practice- V | | | 2 | | 2 | | 25 | | #50 | 75 |
| 8 | Self Learning (Technical) | | | | | | | 50 | | | 50 |
| **Total** | | **16** | | **14** | | **30** | **500** | **225** | **25** | **50** | **800** |

'#' indicates practical examination only

'*' indicates Open Book theory Examination

| | | | | |
|---|---|---|---|---|
| **Professional Elective II** | 1)Experimental Stress Analysis | 2)Power Plant and Energy Engineering | 3)Tool Engineering | 4) Mecanical Vibration |

**Note** –

- The Practical batch shall be of 15 students. After formation of batches, if the number of students remaining is more than 7 a new batch shall be formed.
- Syllabus of Self learning (H.S.S.) is common for all Under Graduate Programs under Faculty of Engineering and Technology.
- Practical / Tutorial load indicates the load per batch.
- TW: Term work assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.
- Industrial Training (B.E. Part 1) of minimum 30 days in one/two slot shall be completed in any vacation after SE Part-II but before BE Part-I & the report shall be submitted in BE Part-I.
- Electives -: To offer a particular subject as an Elective, minimum 15 students shall opt for the same. Appropriate Electives Subjects may be added when required.
- For the subject Advanced Computing Techniques-I and Advanced Computing Techniques-II any one subject given with syllabus is to be selected by the student.

**SOLAPUR UNIVERSITY, SOLAPUR**

**FACULTY OF ENGINEERING & TECHNOLOGY**

**Mechanical Engineering**

**Structure of B.E. (Mechanical Engineering) w.e.f. from2015-16**

**Semester-I**

| Sr. No. | Subject | Teaching / Week | | | | | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Dr | Total | TP | TW | OE | POE | Total |
| 1 | Automatic Control Engineering | 3 | | 2 | | 5 | 100 | 25 | | | 150 |
| 2 | Operations Research | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 3 | Refrigeration and Air Conditioning | 3 | | 2 | | 5 | 100 | 25 | 25 | | 125 |
| 4 | Professional Elective - 3 | 3 | | 2 | | 5 | 100 | 25 | 25 | | 150 |
| 5 | Free Elective - I | 3 | 2 | | | 5 | 100 | 25 | | | 125 |
| 6 | Industrial Training | | | 1 | | 1 | | 50 | 25 | | 75 |
| 7 | Project Work– I | | | 4 | | 4 | | 50 | | | 50 |
| **Total** | | **15** | 2 | 13 | | **30** | **500** | **225** | **75** | - | **800** |

| | | | |
|---|---|---|---|
| **Professional Elective III** | Finite Element Methods | Automobile Engineering | Process Engineering |

| | | | | |
|---|---|---|---|---|
| **Free Elective I** | Industrial Robotics | Sugar Engineering | Textile Engineering | Entrepreneurship Development |

**Semester-II**

| Sr.No. | Subject | Teaching / Week | | | | | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Dr | Total | TP | TW | OE | POE | Total |
| 1 | Industrial and Quality Management | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 2 | Industrial Engineering | 3 | | 2 | | 5 | 100 | 25 | | | 125 |
| 3 | Professional Elective - 4 | 3 | | 2 | | 5 | 100 | 25 | 25 | | 150 |
| 4 | Free Elective - II | 3 | 2 | | | 5 | 100 | 25 | 25 | | 150 |
| 5 | Project Work – II | | | 8 | | 8 | | 100 | 100 | | 200 |
| 6 | General Proficiency | 2 | | | | 2 | | 50 | | | 50 |
| **Total** | | **14** | 2 | 14 | | **30** | **400** | **250** | **150** | - | **800** |

| | | | |
|---|---|---|---|
| **Professional Elective IV** | Mechatronics | Computational Fluid Dynamics | Production and Operation Management |

| | | | | |
|---|---|---|---|---|
| **Free Elective II** | Software Engineering & cyber security | Agro Machine Engineering | Plastic Engineering | Economics for Engineers |

*w.e.f. academic year 2015-16*

**Note –**

1. The Practical batch shall be of 15 students. After formation of batches, if the number of students remaining is more than 7 a new batch shall be formed.
2. Project group shall not be of more than four students.
3. Practical / Tutorial load indicates the load per batch.
4. TW: Term work assessment shall be a continuous process based on the performance of student in assignment, class test, quizzes, homework, interaction during theory and laboratory session, hand written lab book/ hand written journal, sheet drawing, subject seminar presentation etc. as applicable.
5. For Elective -: To offer a particular subject as an Elective, minimum 15 students should opt for the same. Appropriate Electives Subjects may be added when required.

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NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Computer Science & Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968327 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1. | B.E. Computer Science & Engineering | Yes (Elective) | 2015-16 |

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# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## COMPUTER SCIENCE & ENGINEERING

**Structure & syllabus for**

**B.E. (Computer Science & Engineering)**

**w.e.f. Academic Year 2015-16**

# SOLAPUR UNIVERSITY, SOLAPUR

## Computer Science and Engineering

## Structure of B. E. (Computer Science & Engineering.) w.e.f. July 2015

### SEMESTER – I

| Sr. No | Name of the Subject | Teaching Scheme | | | Examination Scheme | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Paper | T/W | OE | POE | |
| 1 | Advanced Computer Architecture | 3 | - | - | 100 | 25 | - | - | 125 |
| 2 | Distributed Systems | 3 | - | 2 | 100 | 25 | - | - | 125 |
| 3 | Modern Database Systems | 4 | - | 4 | 100 | 25 | - | 50 | 175 |
| 4 | Elective – I | 3 | - | - | 100 | 25 | - | - | 125 |
| 5 | Elective – II | 3 | - | - | 100 | 25 | | | 125 |
| 6 | Vocational Training | - | - | - | - | 25 | - | - | 25 |
| 7 | Lab I - Project Phase I | - | - | 4 | - | 50 | - | 50 | 100 |
| 8 | Lab-II - Python | 2 | | 2 | | 50 | | - | 50 |
| | **Total** | **18** | **-** | **12** | **500** | **250** | **-** | **100** | **850** |

### SEMESTER -II

| Sr. No | Name of the Subject | Teaching Scheme | | | Examination Scheme | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | L | T | P | Paper | T/W | OE | POE | |
| 1 | Management Information System | 3 | -- | | 100 | 25 | | | 125 |
| 2 | Information & Cyber Security | 3 | -- | 2 | 100 | 25 | | 25 | 150 |
| 3 | Elective -III | 3 | -- | | 100 | 25 | | | 125 |
| 4 | Elective – IV | 3 | -- | | 100 | 25 | | | 125 |
| 5 | Lab I - Web Technology | 2 | -- | 4 | | 25 | | 50 | 75 |
| 7 | Lab II - Project Phase II | | -- | 6 | | 100 | | 100 | 200 |
| 8 | Lab-III -Open Source Technology | 2 | -- | 2 | | 50 | | | 50 |
| | **Total** | **16** | **-** | **14** | **400** | **275** | | **175** | **850** |

| **Elective – I** | **Elective – II** |
|---|---|
| 1. Human Computer Interaction<br>2. Digital Signal Processing<br>3. Software Testing & Quality Assurance<br>4. Business Intelligence | 1. Object Oriented Modeling & Design<br>2. Wireless Ad hoc Networks<br>3. Intelligent Systems<br>4. Mobile Application Development |
| **Elective – III** | **Elective – IV** |
| 1. Data Warehousing & Mining<br>2. Image Processing<br>3. Information Retrieval<br>4. Cloud Computing | 1. Storage Area Network<br>2. Web 2.0 & Rich Internet Application<br>3. Artificial Neural Network<br>4. Big Data Analytics |

**Note:**

1. The term-work will be assessed based on continuous internal evaluation including class tests, assignments, performance in laboratories, Interaction in class, quizzes, group discussions as applicable.
2. The batch size for practical/tutorials be of 15 students. On forming the batches, if the strength of remaining students exceeds 7 students, then a new batch may be formed.
3. Vocational Training (evaluated at B.E. Part-I) of minimum 15 days shall be completed in any vacation after S.E. Part-II but before B.E. Part-I & the report shall be submitted and evaluated in B.E. Part-I
4. For project, the group shall be about 4 /5 students.
5. Minimum strength of the students for Electives be 15.
6. A new elective may be introduced at SEMESTER I / II on any advanced topic in Computer Science and Engineering with prior permission from University.

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NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute, ISO 9001:2015 Certified Institute
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Electronics & Tele-communication Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968324 | | | |
| Sr. No. | Class Name | Status of implementation of CBCS / elective course system (Yes/No) | Year of implementation of CBCS / elective course system |
| 1. | B.E. Electronics & Tele-communication Engineering | Yes (Elective) | 2015-16 |

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# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## ELECTRONICS & TELECOMMUNICATION ENGINEERING

## Syllabus for

## B.E. (E & TC Engineering) w.e.f. Academic Year 2015-16

# SOLAPUR UNIVERSITY, SOLAPUR
## FACULTY OF ENGINEERING & TECHNOLOGY
## Electronics & Telecommunication Engineering

## Program Educational Objectives and Outcomes

### Program Educational Objectives (PEO'S)

1 To prepare students to give good theoretical background with sound practical knowledge, enable them to analyze and solve Electronics and communication Engineering problems by applying basic principles of mathematics, science, and engineering and using modern tools and techniques.

2 To make students to test hardware components and software for offering solution to real life situations.

3 To inculcate students to be sensitive to ethical, societal and environmental issues while pursuing their professional duties.

4 To build strong fundamental knowledge amongst students to pursue higher education, and to enhance research and continue professional development in Electronics, communication and IT industries with attitude for lifelong learning.

5 To nurture students with technical and communication skills in order to be able to function on multidisciplinary fields and make them aware of contemporary issues at national and international levels.

6 To develop students for team working and managerial skills leading to entrepreneurship and leadership.

### Program Outcomes (PO's)

1. An ability to apply knowledge of mathematics, science, and engineering,
2. An ability to design and conduct experiments, as well as to analyze and interpret data,
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability,
4. An ability to function on multidisciplinary teams,
5. An ability to identify, formulate, and solve engineering problems,
6. An understanding of professional and ethical responsibility,
7. An ability to communicate effectively,
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context,
9. A recognition of the need for, and an ability to engage in life-long learning,
10. A knowledge of contemporary issues, and
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

# SOLAPUR UNIVERSITY, SOLAPUR

**FACULTY OF ENGINEERING & TECHNOLOGY**

**STRUCTURE OF B.E (Electronics & Telecommunication Engineering)**

**W.E.F 2015-16**

## B. E. (Electronics & Telecommunication Engineering) Semester- I

| Sr. No. | Subject | Teaching Scheme | | | | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | Tut | P | Total | Th. | TW | POE | OE | Total |
| 1 | Computer Communication Network | 4 | -- | 2 | 6 | 100 | 25 | 50 | -- | 175 |
| 2 | VLSI Design | 4 | -- | 2 | 6 | 100 | 25 | 50 | -- | 175 |
| 3 | Satellite Communication | 3 | 1 | -- | 4 | 100 | 25 | -- | -- | 125 |
| 4 | Coding Theory | 3 | 1 | -- | 4 | 100 | 25 | -- | -- | 125 |
| 5 | Elective – I | 4 | -- | 2 | 6 | 100 | 25 | -- | -- | 125 |
| 6 | Seminar & Project | -- | -- | 4 | 4 | -- | 25 | -- | 50 | 75 |
| 7 | Vocational Training | -- | -- | -- | -- | -- | 25 | -- | -- | 25 |
| | **Total** | **18** | **2** | **10** | **30** | **500** | **175** | **100** | **50** | **825** |

**Elective – I** **Advanced Telecommunication Network**
**Image Processing**
**Advance DSP.**

## B. E. (Electronics & Telecommunication Engineering) Semester- II

| Sr. No. | Subject | Teaching Scheme | | | | Examination Scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | Tut | P | Total | Th. | TW | POE | OE | Total |
| 1 | Broadband Communication | 3 | 1 | -- | 4 | 100 | 25 | -- | 25 | 150 |
| 2 | Multimedia Communication Techniques | 4 | -- | 2 | 6 | 100 | 25 | -- | 50 | 175 |
| 3 | Embedded Systems | 4 | -- | 2 | 6 | 100 | 25 | -- | 50 | 175 |
| 4 | Elective – II | 4 | -- | 2 | 6 | 100 | 25 | -- | -- | 125 |
| 5 | Project | -- | -- | 8 | 8 | -- | 100 | 100 | -- | 200 |
| | **Total** | **15** | **1** | **14** | **30** | **400** | **200** | **100** | **125** | **825** |

**Elective – II** **Wireless Sensor Network**
**Pattern Recognition**
**DSP Processors & Application**

**Note**:

- Minimum strength of the students for Elective be 15.
- Term work assessment shall be a continuous process based on student's performance in class tests, assignments, homework, subject seminars, quizzes, laboratory books and their interaction and attendance for theory and lab sessions as applicable.

- The batch size for the practical's/tutorials be of 15 students. On forming the batches, if the strength of remaining students exceeds 7 students, then a new batch be formed. For project the group shall be of three students.

Shri Vithal Education & Research Institute's
COLLEGE OF ENGINEERING, PANDHARPUR
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Website.: www.sveri.ac.in (Approved by A.I.C.T.E., New Delhi and Affiliated to Solapur University, Solapur)
NBA Accredited all eligible UG Programmes, NAAC Accreditated Institute,ISO 9001:2015 Certified Institute.
Accredited by The Institution of Engineers (India), Kolkata and TCS, Pune.

Ref.:- Date:-

## 1.2.1 List of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

| Programme Name : Civil Engineering | | | |
|---|---|---|---|
| Programme Code: 1-1408968331 | | | |
| **Sr. No.** | **Class Name** | **Status of implementation of CBCS / elective course system (Yes/No)** | **Year of implementation of CBCS / elective course system** |
| 1. | B.E. Civil Engineering | Yes (Elective) | 2015-16 |

COLLEGE OF ENGINEERING PANDHARPUR

B. Ranje

PRINCIPAL,
College of Engineering
PANDHARPUR

# SOLAPUR UNIVERSITY, SOLAPUR

## FACULTY OF ENGINEERING & TECHNOLOGY

## CIVIL ENGINEERING

**Syllabus for**

**B.E. (Civil Engineering) w. e. f. Academic Year 2015-16**

*w. e. f. Academic Year 2015-16*

**Solapur University, Solapur**

**Structure of B .E. (Civil Engineering)**

**w. e. f. Academic Year 2015-16.**

**B.E. (Civil Engineering) Semester –VII**

| Sr. No. | Subject | Teaching/Week | | | | | Examination scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | Pr. | Tu. | Dr. | Total | Theory | TW | POE | OE | Total |
| 1 | Design of Concrete Structures-I | 3 | - | 1 | - | 4 | 100 | 25 | - | - | 125 |
| 2 | Quantity Surveying & Valuation | 3 | 4 | - | - | 7 | 100 | 50 | 50 | - | 200 |
| 3 | Earthquake Engg. | 3 | 2 | - | - | 5 | 100 | 25 | - | - | 125 |
| 4 | Water Resources Engg. II | 3 | 2 | - | - | 5 | 100 | 25 | - | 25 | 150 |
| 5 | Elective - I | 3 | 2 | - | - | 5 | 100 | 25 | - | 25 | 150 |
| 6 | Seminar | - | 2 | - | - | 2 | - | 50 | - | - | 50 |
| 7 | a) Project work<br>b) Assessment of report on field training-II | - | 2 | - | - | 2 | - | 25<br>25 | - | - | 25<br>25 |
| **Total** | | 15 | 14 | 1 | - | 30 | 500 | 250 | 50 | 50 | 850 |

**B.E. (Civil Engineering) Semester –VIII**

| Sr. No. | Subject | Teaching/Week | | | | | Examination scheme | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | Pr. | Tu. | Dr. | Total | Theory | TW | POE | OE | Total |
| 1 | Design of Concrete Structures-II | 4 | 2 | - | - | 6 | 100 | 25 | - | - | 125 |
| 2 | Construction Practices and Town Planning | 4 | - | - | - | 4 | 100 | 25 | - | - | 125 |
| 3 | Elective - II | 3 | 2 | - | - | 5 | 100 | 25 | - | 25 | 150 |
| 4 | Elective - III | 3 | 2 | - | - | 5 | 100 | 50 | - | | 150 |
| 5 | R. C. C. Structural Design & Drawing-II | - | - | - | 4 | 4 | - | 50 | - | 50 | 100 |
| 6 | Project work | - | 6 | - | - | 6 | - | 100 | - | 100 | 200 |
| **Total** | | 14 | 12 | - | 4 | 30 | 400 | 275 | - | 175 | 850 |

Notes:

(1) Project group be of @ 7 students.

(2) Elective subject can be offered from the following list, if minimum 15 students opt for that subject.

(3) Term work assessment: Term Work assessment shall be a continuous process based on the Performance of the student in assignments, class tests, quizzes, attendance and interaction during theory and lab sessions, journal writing, report presentation etc., as applicable

# B. E. (CIVIL) - LIST OF ELECTIVES

| B. E. Civil Part-I | | B. E. Civil Part-II | | | |
|---|---|---|---|---|---|
| ELECTIVE I | | ELECTIVE II | | ELECTIVE III | |
| 5.1 | Open Channel & River Hydraulics | 3.1 | Advanced Engg. Geology | 4.1 | Advanced Design of Steel Structures |
| 5.2 | Air Pollution & control | 3.2 | Ground improvement Techniques | 4.2 | Industrial Waste Treatment |
| 5.3 | Design of Foundations | 3.3 | Traffic Engg. & Control | 4.3 | Water Power Engg. |
| 5.4 | Advanced Design of Concrete Structures | 3.4 | Infrastructural Engineering | 4.4 | Advanced Concrete Technology |
| 5.5 | Managerial Techniques | 3.5 | Project Appraisal | 4.5 | Reliability Engg. |
| 5.6 | Computer Applications in Civil Engg | 3.6 | Solid and Hazardous & Waste Management | 4.6 | Finite Element Method |
| 5.7 | Advanced structures | 3.7 | Dynamics of Structures | 4.7 | Experimental Stress Analysis |
| 5.8 | Entrepreneurship | 3.8 | Environmental Management | 4.8 | Optimization Techniques |
| 5.9 | Remote Sensing and GIS Applications | 3.9 | Design of Bridges | 4.9 | Disaster Management |

*w. e. f. Academic Year 2015-16*