

**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



*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
<b>Grand Total</b>		<b>18</b>	<b>1</b>	<b>12</b>	<b>25</b>	<b>350</b>	<b>175</b>	<b>175</b>		<b>700</b>

- 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
<b>Grand Total</b>		<b>18</b>	<b>1</b>	<b>13</b>	<b>26</b>	<b>340</b>	<b>185</b>	<b>175</b>	<b>700</b>

- 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.

<i>Sr.</i>	<i>Skill Development in</i>	<i>Course of which some laboratory hours can be used</i>
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**

**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
	<b>Sub Total</b>	<b>16</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>16</b>	<b>150</b>	<b>350</b>	<b>-</b>	<b>500</b>
MEV21	Environmental Sciences	1	-	-	-	-	-	-	-	-

**Semester I: Laboratory / Tutorial Courses**

Course code	Name of Laboratory /Tutorial Course	Hrs./week				Credits	ISE	ESE		ICA	Total
		L	T	P	D			POE	OE		
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
<b>ME216</b>	<b>Professional Elective-I</b>	1	-	2	-	2	-	25	-	25	50
ME217	Workshop Practices -II	-	-	2	-	1	-	-	50	50	
	<b>Sub Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>8</b>	<b>-</b>	<b>25</b>	<b>50</b>	<b>225</b>	<b>300</b>
	<b>Grand Total</b>	<b>16</b>	<b>02</b>	<b>08</b>	<b>04</b>	<b>24</b>	<b>150</b>	<b>425</b>	<b>225</b>	<b>800</b>	

**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
<b>ME225</b>	<b>Professional Elective-II</b>	3	-	-	-	3	30	70	-	100
	<b>Sub Total</b>	<b>16</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>16</b>	<b>150</b>	<b>350</b>	<b>-</b>	<b>500</b>
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
<b>ME225</b>	<b>Professional Elective-II</b>	-	-	2	-	1	-	-	-	25	25
ME226	Computer Aided Machine Drawing	1	-	2	-	2	-	50	-	50	100
ME 227	Workshop Practices -III	-	-	2	-	1	-	-	-	50	50
	<b>Sub Total</b>	<b>-</b>	<b>-</b>	<b>14</b>	<b>-</b>	<b>07</b>	<b>-</b>	<b>75</b>	<b>225</b>	<b>300</b>	
	<b>Grand Total</b>	<b>16</b>	<b>-</b>	<b>14</b>	<b>-</b>	<b>23</b>	<b>150</b>	<b>425</b>	<b>225</b>	<b>800</b>	

**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



# **SOLAPUR UNIVERSITY, 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**





**SOLAPUR UNIVERSITY, SOLAPUR**

**FACULTY OF ENGINEERING & TECHNOLOGY**

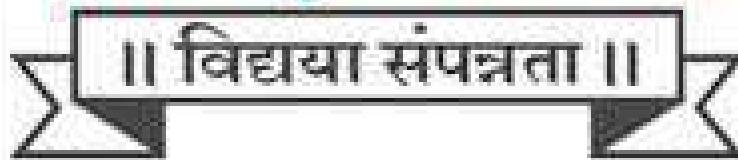
**MECHANICAL ENGINEERING**

**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
<b>ME315</b>	<b>Professional Elective -III</b>	3	-	-	-	3	30	70	-	100
ME316	Advanced Computer Programming -I	1	-	-	-	1	-	-	-	-
	Workshop Practices -IV	-	-	-	-	-	-	-	-	-
SLH31	Self Learning(HSS)	-	-	-	-	2	-	50		50
	<b>Sub Total</b>	<b>16</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>18</b>	<b>150</b>	<b>400</b>		<b>550</b>

**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
<b>ME315</b>	<b>Professional Elective -III</b>	-	-	2	-	1	-	-	-	25	25
ME316	Advanced Computer Programming -I	-	-	2	-	1	-	-	-	25	25
ME317	Workshop Practices -IV	-	-	2	-	1	-	-	-	50	50
	<b>Sub Total</b>	<b>-</b>	<b>01</b>	<b>12</b>	<b>-</b>	<b>7</b>	<b>-</b>	<b>-</b>	<b>50</b>	<b>200</b>	<b>250</b>
	<b>Grand Total</b>	<b>16</b>	<b>01</b>	<b>12</b>	<b>-</b>	<b>25</b>	<b>150</b>	<b>450</b>	<b>200</b>	<b>800</b>	

**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
<b>ME325</b>	<b>Professional Elective -IV</b>	3	-	-	-	3	30	70	-	100
ME326	Advanced Computing Techniques <sup>2</sup> -II	1	-	-	-	1	-	-	-	-
	<b>Sub Total</b>	<b>16</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>16</b>	<b>150</b>	<b>350</b>	<b>-</b>	<b>500</b>

**Semester II : Laboratory / Tutorial Courses**

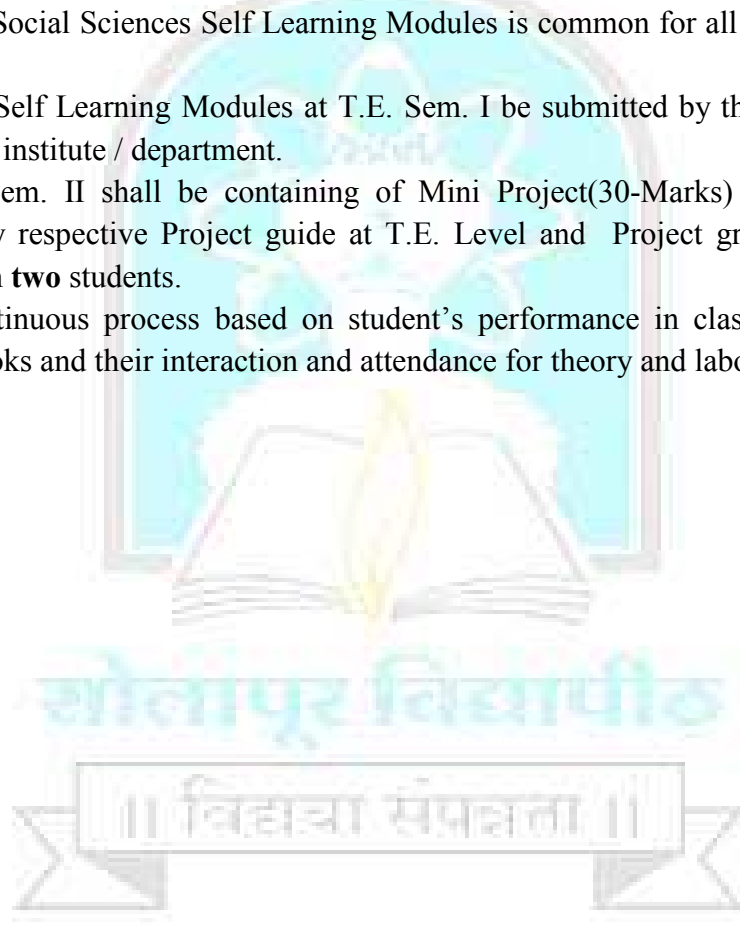
Course code	Name of Laboratory / Tutorial Course	Hrs./week				Credits	Examination Scheme				
		L	T	P	D		ISE	ESE		ICA	Total
								POE	OE		
ME321	Heat and Mass Transfer	-	-	2	-	1	-	25	-	25	50
ME322	Internal Combustion Engine	-	-	2	-	1	-	-	-	25	25
ME323	CAD-CAM & CAE	-	-	2	-	1	-	-	-	25	50
ME324	Machine Design -II	-	01	2	-	1	-	-	25	25	50
<b>ME325</b>	<b>Professional Elective - IV</b>	-	-	2	-	1	-	-	-	25	25
ME326	Advanced Computing Techniques <sup>2</sup> -II	-	-	2	-	1	-	-	-	25	25
ME327	Workshop Practice –V	-	-	2	-	1	-	25#	-	25	75
SLH32	Self Learning (Technical)	-	-	-	-	-	-	-	-	50	-
	<b>Sub Total</b>	<b>-</b>	<b>01</b>	<b>14</b>	<b>-</b>	<b>7</b>	<b>-</b>	<b>75</b>	<b>225</b>	<b>300</b>	
	<b>Grand Total</b>	<b>16</b>	<b>01</b>	<b>14</b>	<b>-</b>	<b>23</b>	<b>150</b>	<b>425</b>	<b>225</b>	<b>800</b>	

**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.





# **SOLAPUR UNIVERSITY, 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**



**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
<b>ME414</b>	<b>Professional Elective-V</b>	3	-	-	-	3	30	70	-	100
<b>ME415</b>	<b>Free Elective-I</b>	3	-	-	-	3	30	70	-	100
ME416	Project Work -I	-	-	-	-	-	-	-	-	-
ME417	Industrial Training	-	-	-	-	-	-	-	-	-
<b>Sub Total</b>		<b>15</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15</b>	<b>150</b>	<b>350</b>	<b>-</b>	<b>500</b>

**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
<b>ME414</b>	<b>Professional Elective-V</b>	-	-	2	-	1	-	-	25	25	50
<b>ME415</b>	<b>Free Elective-I</b>	-	-	2	-	1	-	-	25	25	50
ME416	Project Work -I	-	-	6	-	3	-	-	-	25	25
ME417	Industrial Training	-	-	1	-	1	-	-	50	25	75
<b>Sub Total</b>		<b>-</b>	<b>-</b>	<b>17</b>	<b>-</b>	<b>09</b>	<b>-</b>	<b>-</b>	<b>125</b>	<b>-</b>	<b>300</b>
<b>Grand Total</b>		<b>16</b>	<b>-</b>	<b>17</b>	<b>-</b>	<b>24</b>	<b>150</b>	<b>475</b>	<b>175</b>	<b>800</b>	

**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
<b>ME423</b>	<b>Professional Elective -VI</b>	3	-	-	-	3	30	70	-	100
<b>ME424</b>	<b>Free Elective-II</b>	3	-	-	-	3	30	70	-	100
ME425	Project Work -II	-	-	-	-	-	-	-	-	-
	<b>Sub Total</b>	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
<b>ME423</b>	<b>Professional Elective -VI</b>	-	-	2	-	1	-	25	-	25	50
<b>ME424</b>	<b>Free Elective-II</b>	-	-	2	-	1	-	25	25	25	75
ME425	Project Work -II	-	-	10	-	5	-	-	100	100	200
	<b>Sub Total</b>	-	-	18	-	9	-	200		200	400
	<b>Grand Total</b>	12	-	18	-	21	120	480		200	800

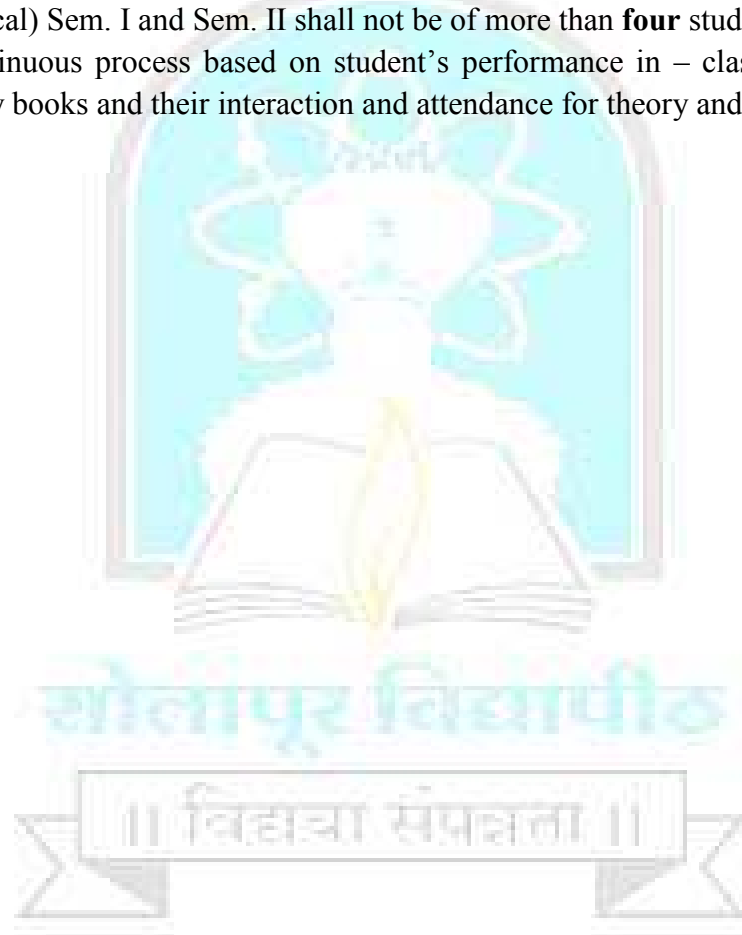
**Abbreviations:** L- Lectures, P –Practical, T- Tutorial, ISE- In Semester Examination, ESE - End Semester Examination (University Examination for Theory & / POE & / Oral), ICA- Internal Continuous Assessment.

**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			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
<b>Total</b>		<b>17</b>			<b>17</b>	<b>350</b>	<b>175</b>		<b>525</b>

• Semester I : Laboratory / Tutorial Courses

Course Code	Name of the Course	Engagement Hours			Credits	FA			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
<b>Total</b>			<b>1</b>	<b>12</b>	<b>7</b>			<b>175</b>	<b>175</b>
<b>Grand Total</b>		<b>17</b>	<b>1</b>	<b>12</b>	<b>24</b>	<b>350</b>	<b>175</b>	<b>175</b>	<b>700</b>
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
<b>Grand Total</b>		<b>15</b>	<b>1</b>	<b>14</b>	<b>23</b>	<b>330</b>	<b>170</b>	<b>200</b>	<b>700</b>
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**



**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
	<b>Sub Total</b>	<b>15</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15</b>	<b>150</b>	<b>350</b>	<b>-</b>	<b>500</b>
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	
ME213	Manufacturing Processes	-	-	2	-	1	-	-	25	25	
ME214	Machine Drawing & CAD	-	-	-	4	2	-	50	-	50	
ME215	Professional Elective-I	-	-	2	-	1	-	-	-	25	
	<b>Sub Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5</b>	<b>-</b>	<b>50</b>	<b>25</b>	<b>125</b>	
	<b>Grand Total</b>	<b>15</b>	<b>01</b>	<b>04</b>	<b>04</b>	<b>20</b>	<b>150</b>	<b>425</b>	<b>125</b>	<b>700</b>	

**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
<b>Sub Total</b>		<b>15</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15</b>	<b>150</b>	<b>350</b>	<b>-</b>	<b>500</b>
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
<b>Sub Total</b>		<b>-</b>	<b>01</b>	<b>12</b>	<b>-</b>	<b>07</b>	<b>-</b>	<b>50</b>	<b>200</b>	<b>200</b>	<b>250</b>
<b>Grand Total</b>		<b>15</b>	<b>01</b>	<b>12</b>	<b>-</b>	<b>22</b>	<b>150</b>	<b>400</b>	<b>200</b>	<b>200</b>	<b>750</b>

**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.

