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) 1. Economics 2. Psychology 3. Philosophy 4. Sociology 5. Humanities	Subjects for Self Learning for Technical Subjects 1. Computer Modeling and Simulation 2. Software licenses and practices 3. Network set up & management tools 4. Ethical Hacking 5. Data Science 6. UI Technologies

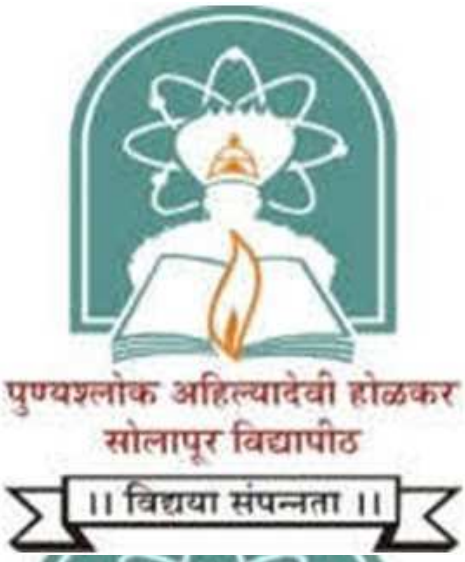
Note:

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

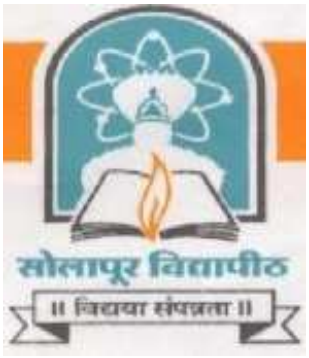
FACULTY OF ENGINEERING & TECHNOLOGY

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 ।।