

SHIVAJI UNIVERSITY KOLHAPUR

REVISED SYLLABUS AND STRUCTURE

FINAL YEAR (FINAL YEAR B. Tech) BACHELOR OF TECHNOLOGY

IN

Computer Science and Engineering

To be introduced from the academic year 2021-22

(w.e.f. June 2021) onwards

	FINAL YEAR COMPUTER SCIENCE AND ENGINEERING - CBCS PATTERN																
	SEMESTER - VII																
		TEACHING SCHEME							EXAMINATION SCHEME								
Sr. No.	Course Subject / Title	THEORY			TUTORIAL		PRACTICAL		THEORY				ORAL / PRACTICAL		TERMWORK		
		Credits	N0. Of Lectures	Hours	Credits	No. of Hours	Credits	No. of Hours	mode	marks	Total Marks	MIN.	MAX	MIN.	MAX	MIN.	
1	PCC-CS701 Advanced Computer Architecture	4	4	4	1	1			CIE ESE	30 70	100	40			25	10	
2	PCC- CS702 Cloud Computing	3	3	3			1	2	CIE ESE	30 70	100	40			25	10	
3	PCC- CS703 Advanced Database Systems	3	3	3			1	2	CIE ESE	30 70	100	40	50	20	25	10	
4	PCE- CS704 Elective-I	3	3	3	1	1			CIE ESE	30 70	100	40			25	10	
5	PCC- CS705 Web Technologies	3	3	3			2	4					50	20	50	20	
6	PW- CS706 Project – I						2	4					50	20	50	20	
7	SI-CS707 Internship						1								50	20	
	Total (SEM –VII)	***16***	***16***	***16***	***2***	***2***	***7***	***12***			***400***		***150***		***250***		

FINAL YEAR COMPUTER SCIENCE AND ENGINEERING - CBCS PATTERN

SEMESTER - VIII

Sr. No.	Course Subject / Title	TEACHING SCHEME							EXAMINATION SCHEME							
		THEORY			TUTORIAL		PRACTICAL		THEORY				ORAL / PRACTICAL		TERMWORK	
		Credits	N0. Of Lectures	No. of Hours	Credits	No. of Hours	Credits	No. of Hours	mode	marks	Total Marks	MIN.	MAX	MIN.	MAX	MIN.
1	PCC- CS801 Big Data Analytics	4	4	4			1	2	CIE ESE	30 70	100	40	50	20	25	10
2	PCC- CS802 Deep Learning	3	3	3	1	1			CIE ESE	30 70	100	40			25	10
3	PCE- CS803 Elective-II	3	3	3	1	1			CIE ESE	30 70	100	40			25	10
4	PCE- CS804 Elective-III	3	3	3	1	1			CIE ESE	30 70	100	40			25	10
5	PCC- CS805 Mobile Application Development	3	3	3			2	4					50	20	50	20
6	PW- CS806 Project – II						2	4					50	20	50	20
7	HM-CS807 Professional Skills				1	1									50	20
	Total (SEM –VIII)	***16***	***16***	***16***	***4***	***4***	***5***	***10***			***400***		***150***		***250***	
	Total	**32**	**32**	**32**	**6**	**6**	**12**	**22**			**800**		**300**		**500**	

CIE- Continuous Internal Evaluation

ESE – End Semester Examination

Final Year B. Tech (Computer Science and Engineering) Sem– VII

8. Project-I (PW- CS706)

TEACHING SCHEME	EXAMINATION SCHEME
Theory : NA	**Theory** : NA
Tutorial : NA	**Term work: 50 Marks**
Practical : 4 Hrs./Week	**Demo & OE: 50 Marks**

Pre-requisites: Software Engineering, Mini Project.

Course Objectives

1. Identify the area of project work
2. Recognize the need and ability to engage in lifelong learning
3. Function effectively on teams and to communicate effectively
4. Able to prepare the technical report

Course Outcomes

Upon successful completion of this course, the students will be able to:

1. Explain the need of a software project for the society
2. Identify requirement analysis like functional and technical requirements for the project
3. Come up with design documents for the project consisting of Architecture, Dataflow diagram, Class Diagram, Algorithmic descriptions of various modules, collaboration diagram, ER Diagrams, Database Design Documents, Sequence Diagram, Use Case Diagram
4. Able to demonstrate analysis and design.
5. Prepare the technical report consisting of Requirement specification, Analysis and Design of Project

Contents

The project work is to be carried out in two semesters of Final Year Computer Science and Engineering.

The project should be undertaken preferably by group of 4-5 students who will jointly work and implement the project in the two semesters.

In Semester VII, the group will select a project with the approval of the Guide (staff member) and submit the Name of the project with a synopsis of the proposed work of not more than 02 to 08 pages before second week of August in the academic year. The group is expected to complete detailed system design, analysis, data flow design, procurement of hardware and/or software, implementation of a few modules of the proposed work at the end of semester –VIII as a part of the term work submission in the form of a joint report.

The term work assessment will be done jointly by teachers appointed by Head of the Institution.

The oral examination will be conducted by an internal and external examiner

Note:

1. Project work should be continually evaluated based on the contributions of the group members, originality of the work, innovations brought in, research and developmental efforts, depth and applicability, etc.
2. Two mid-term evaluations should be done, which includes presentations and demos of the work done.
3. **Care should be taken to avoid copying and outsourcing of the project work.**

Final Year B. Tech (Computer Science and Engineering) Sem- VII

9. Internship (SI-CS707)

TEACHING SCHEME	EXAMINATION SCHEME
Theory : NA	**Practical:1 Credit**
Tutorial :NA	**Term work: 50 Marks**
Practical : Minimum4 Weeks duration	**Mode of Evaluation : –**Internship Report, Presentation and Project Review.

Pre-requisites: Completion of minimum of Six semesters**,** Knowledge of Basic Programming Languages, Database Software.

Course Objectives

The course is designed to expose the students to industry environment and to take up on-site assignment as trainees or interns.

Course Outcomes

At the end of this internship the student should be able to:
1. Have an exposure to industrial practices and to work in teams
2. Communicate effectively
3. Understand the impact of engineering solutions in a global, economic, environmental, and societal context
4. Develop the ability to engage in research and to involve in life-long learning
5. Comprehend contemporary issues
6. Engage in establishing his/her digital footprint

Duration: Minimum 4 Weeks
Details:
Four weeks of work at industry site.
Supervised by an expert at the industry.

Term Work

1. Mode of Evaluation: Internship Report, Presentation and Project Review.
2. Collect the Internship Completion Letter given by authorized industry.
3. Assess the work based on progress report (signed by industry expert).

Final Year B. Tech (Computer Science and Engineering) Sem– VIII

10. Project-II (PW- CS806)

TEACHING SCHEME	EXAMINATION SCHEME
Theory : NA	**Theory** : NA
Tutorial : NA	**Term work: 50 Marks**
Practical : 4 Hrs./Week	**Demo & OE : 50 Marks**

Pre-requisites: Project - I.

Course Objectives

1. Students should learn to design and develop usable User Interface
2. Students should learn to analyze and apply emerging technologies in development of a project
3. Students should learn to test the modules in Project
4. Students should learn to demonstrate working of project

Course Outcomes

Upon successful completion of this course, the students will be able to:

1. Design and develop usable User Interface
2. Analyze and apply emerging technologies in development of a project
3. Test the modules in Project
4. Demonstrate working of project

Contents

The group will continue to work on the project selected during the semester VII and submit the completed

Project work to the department at the end of semester VIII as mentioned below.

1. The workable project.
2. The project report in the bound journal complete in all respect with the following : -
    i. Problem specifications
    ii. System definition – requirement analysis.
    iii. System design – dataflow diagrams, database design
    iv. System implementation – algorithm, code documentation
    v. Test results and test report.
    vi. In case of object oriented approach – appropriate process be followed.

CIE will be jointly assessed by a panel of teachers appointed by head of the Institution. SEE examination will

be conducted by internal and external examiners

Note:

1. Project work should be continually evaluated based on the contributions of the group members, originality of the work, innovations brought in, research and developmental efforts, depth and applicability, etc.
2. Two mid-term evaluations should be done, which includes presentations and demos of the work done.
3. **Care should be taken to avoid copying and outsourcing of the project work**



SHIVAJI UNIVERSITY, KOLHAPUR

REVISED SYLLABUS AND STRUCTURE

THIRD YEAR (C.B.C.S.) BACHELOR OF TECHNOLOGY

IN

Computer Science and Engineering

To be introduced from the academic year 2020-21

(w. e. f. June 2020) onwards

	THIRD YEAR COMPUTER SCIENCE AND ENGINEERING - CBCS PATTERN															
	SEMESTER - VI															
		TEACHING SCHEME							EXAMINATION SCHEME							
Sr. No.	Course Subject / Title	THEORY			TUTORIAL		PRACTICAL		THEORY				ORAL / PRACTICAL		TERMWORK	
		Credits	N0. Of Lectures	No. of Hours	Credits	No. of Hours	Credits	No. of Hours	mode	marks	Total Marks	MIN.	MAX	MIN.	MAX	MIN.
1	**PCC-CS601** Compiler Construction	3	3	3			1	2	CIE ESE	30 70	100	40			25	10
2	**PCC- CS602** Operating System-II	4	4	4			1	2	CIE ESE	30 70	100	40			25	10
3	**PCC- CS603** Database Engineering	4	4	4			1	2	CIE ESE	30 70	100	40	50	20	25	10
4	**PCC- CS604** Machine Learning	3	3	3	1	1			CIE ESE	30 70	100	40			25	10
5	**OEC- CS605** E-Commerce & Digital Marketing **OEC - CS606** ii) Cyber Security	3	3	3					CIE ESE	30 70	100	40				
6	**PCC- CS607** C# Programming	2	2	2			1	2					50	20	25	10
7	**PW- CS608** Domain Specific Mini Project						1	2					50	20	25	10
	Total (SEM –VI)	***19***	***19***	***19***	***1***	***1***	***5***	***10***			***500***		***150***		***150***	
	Total (SEM - V+ SEM - VI)	**38**	**38**	**38**	**3**	**4**	**9**	**18**			**1000**		**250**		**350**	

CIE- Continuous Internal Evaluation

ESE – End Semester Examination

T. Y. B. Tech (Computer Science and Engineering) Sem – VI

7. Domain Specific Mini-project (PW - CS608)

TEACHING SCHEME	EXAMINATION SCHEME
Theory : -----	**Theory : -----**
Tutorial : -----	**Term work :** 25 marks
Practical : 2 Hrs./Week	**Practical :** 50 marks

Pre-requisites:

1. Software Engineering Concepts
2. Object Oriented Concepts

Course Objectives

1. To expose the students to use engineering approach to solve domain specific real time problem.
2. To use the appropriate and newer technologies while developing the project.
3. To learn the skills of team building and team work.

Course Outcomes

Upon successful completion of this course, the student will be able to –

1. Identify specific problem statement from a selected domain.
2. Analyze the problem and prepare SRS and design document.
3. Write code and carry out testing.
4. Write a report covering details of the project and give presentation on a project.

Contents

The students should form group of 4 to 5 students and every group is supposed to choose a specific domain (preferably from Smart India Hackathon problem statement) to do the mini project. Further the group should identify the relevant problem in the selected domain and propose the solution, which can be implemented as a mini-project using suitable technology. The mini-project work should be evaluated by a team of teachers appointed by the department. The evaluation and marking should include Continuous Internal Evaluation (CIE) and Semester End Examination (SEE) during which the group should give presentation and demonstration of their work done. Care should be taken to avoid out-sourcing of the work.

शिवाजी विद्यापीठ, कोल्हापूर
SHIVAJI UNIVERSITY, KOLHAPUR

Second Year B. Tech. Computer Science and Engineering Semester – IV

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs./Wk.	Course Credits	EXAM SCHEME			
									MSE	ISE/CA	ESE	TOTAL
1	PCC	CSE2201	Operating System	3	--	--	3	3	30	10	60	100
2	PCC	CSE2202	Object Oriented Programming	2	--	--	2	2	30	10	60	100
3	PCC	CSE2203	Automata Theory	3	1	--	4	4	30	10	60	100
4	MDM	CSE2204	Multi-disciplinary Minor – 02	2	--	--	2	2	30	10	60	100
5	OE	CSE2205	Open Elective -02	2	--	--	2	2	30	10	60	100
6	HSSM (AEC)	CSE2206	Soft Skills	--	2	--	2	2	-	25	25	50
7	HSSM (EEMC)	CSE2207	Employability Enhancement Skills-II	2	--	--	2	2	-	25	--	25
8	VSEC	CSE2208	Operating System Lab	--	--	2	2	1	--	50	--	50
9	HSSM (VEC)	CSE2209	Object Oriented Programming Lab	--	--	4	4	2	-	50	25	75
10	VSEC	CSE2210	Mini Project-I Lab	--	--	2	2	1	--	25	25	50
11	BSC	CSE2211	Environmental Science	2	--	--	2	Audit	30	10	60	100
12	VSEC	CSE2212	Computer Maintenance Technology	--	--	2	2	1		50	--	50
			Total	16	03	10	29	22	180	285	435	800+100 (Audit)

Course Category	Basic Science Courses (BSC)	Engineering Science Courses (ESC)	Programme Core Course (PCC)	Programme Elective Course (PEC)	Open Elective other than particular Programme (OE/MDM)	Vocational and Skill Enhancement Course (VSEC)	Humanities Social Science and Management (HSSM)	Experiential Learning (EL)	Co-curricular and Extracurricular Activities (CCA)
Last Sem. Cumulative Sum	16	16	10	--	06	06	08	02	02
Semester Credits	--	--	09	--	04	03	06	--	-
Cumulative Sum	16	16	19	--	10	09	14	02	02
PROGRESSIVE TOTAL CREDITS: 66 + 22 = 88									

Year and Semester	Second Year B. Tech - Semester IV - Computer Science and Engineering				
Course Category	Vocational and Skill Enhancement Course (VSEC)				
Title of Course	Mini Project-I Lab			Course Code	CSE2210
Teaching Scheme	L	T	P	Contact Hrs/Week	Credits
	--	--	02	02	01
Examination Scheme	MSE	ISE/CA	ESE	Total	
	--	25	25	50	

Course Pre-Requisite	Knowledge of software engineering and C/C++/Python	
Course Objective	1	To expose the students to solve the real-world problems.
	2	To utilize the techniques. Skills and modern Engineering tools for building the project.
	3	To follow the methods and tasks as per SDOLC Approach
Course Outcomes	After completion of this course Students will be able to	
	CO1	Define the problem statement.
	CO2	Organize, Plan and prepare the detailed project activities.
	CO3	Construct Flowchart, System Architecture based on the project description
	CO4	Implement the solution for their problem.
	CO5	Demonstrate project management principles during project work
	CO6	Demonstrate capabilities of oral communication and self-learning in a group, which leads to lifelong learning.

CO PO Mapping												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3										
CO2	2	3										
CO3	2	2	3									
CO4	2	2	2	3								
CO5											3	
CO6							2	2	3	3		2
Level of Mapping as: Low 1, Moderate 2, High 3												

In Semester Evaluation (ISE)/Continuous Assessment (CA)		
The review/ progress monitoring committee shall be constituted by head of departments of each institute. The progress of mini project to be evaluated on continuous basis, minimum two reviews.		
In continuous assessment focus shall also be on each individual student, assessment based on individual's contribution in group activity, their understanding and response to questions.		
Distribution of ISE/ CA marks shall be as below:		Marks
1	Marks awarded by guide/supervisor	10
2	Marks awarded by review committee	10
3	Quality of Project report	05

Guidelines for Mini Project
✓ Students shall form a group of 3 to 4 students, while forming a group shall not be allowed less than three or more than four students, as it is a group activity. ✓ The Mini Project topic should be based on the any one subject concept that students have studied for their Academic Year. ✓ Students should do survey and identify needs, which shall be converted into problem statement for mini project in consultation with faculty supervisor/head of department/internal committee of faculty members ✓ In the Synopsis they have to state Flowchart, Usage of the logic, algorithm, functions and suitable data structure for implementing the solution. They have to implement project using C, C++ and Python languages. ✓ Faculty supervisor may give inputs to students during mini project activity; however, focus shall be on self-learning. ✓ Students in a group shall understand problem effectively, propose multiple solution and select best possible solution in consultation with guide/ supervisor.

Guidelines for Assessment of Mini Project Lab	
1	Report should be prepared as per the guidelines issued by the Shivaji University, Kolhapur
2	Mini Project shall be assessed through a presentation and demonstration of working model by the student project group to a panel of Internal and External Examiners preferably from industry or research organizations having experience of more than five years approved by head of Institution.
Mini Project shall be assessed based on following points;	
1	Quality of problem and Clarity
2	Innovativeness in solutions, Cost effectiveness and Societal impact
3	Full functioning of working model as per stated requirements
4	Effective use of skill sets & programming languages learnt.
5	Contribution of an individual's as member or leader
6	Presentation and ability to explain the project.