CSD 334	MINI PROJECT	Category	L	T	P	Credit	Year of Introduction
		PCC	0	0	3	2	2019

Preamble:

The objective of this course is to apply the fundamental concepts of Software Engineering principles for the effective development of an application/research project. This course helps the learners to practice the different steps to be followed in the software development process such as literature review and problem identification, preparation of Software Requirement Specification &Software Design Document (SDD), testing, development and deployment. Mini project enables the students to boost their skills, widen the horizon of thinking and their ability to resolve real life problems.

Prerequisite:

A sound knowledge in any programming language and fundamental concepts of Software Engineering.

Course Outcomes: After the completion of the course the student will be able to

CO#	CO
CO1	Identify technically and economically feasible problems **(Cognitive Knowledge Level: Apply)**
CO2	Identify and survey the relevant literature for getting exposed to related solutions and get familiarized with software development processes **(Cognitive Knowledge Level: Apply)**
CO3	Perform requirement analysis, identify design methodologies and develop adaptable & reusable solutions of minimal complexity by using modern tools & advanced programming techniques **(Cognitive Knowledge Level: Apply)**
CO4	Prepare technical report and deliver presentation **(Cognitive Knowledge Level: Apply)**
CO5	Apply engineering and management principles to achieve the goal of the project **(Cognitive Knowledge Level: Apply)**

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4	✓	✓	✓	✓				✓	✓	✓	✓	✓
CO5	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Abstract POs defined by National Board of Accreditation			
PO#	Broad PO	PO#	Broad PO
PO1	Engineering Knowledge	PO7	Environment and Sustainability
PO2	Problem Analysis	PO8	Ethics
PO3	Design/Development of solutions	PO9	Individual and team work
PO4	Conduct investigations of complex problems	PO10	Communication
PO5	Modern tool usage	PO11	Project Management and Finance
PO6	The Engineer and Society	PO12	Lifelong learning

Assessment Pattern

Mark Distribution

Total Marks	CIE Marks	ESE Marks	ESE Duration
150	75	75	

Continuous Internal Evaluation Pattern:

Attendance	**10 marks**
Project Guide	**15 marks**
Project Report	**10 marks**

Evaluation by the Committee (will be evaluating the level of completion
and demonstration of functionality/specifications, presentation,
oral examination, work knowledge and involvement)   : **40 marks**

Student Groups with 3 or 4 members should identify a topic of interest in consultation with a Faculty/Advisor. Review the literature and gather information pertaining to the chosen topic. State the objectives and develop a methodology to achieve the objectives. Carryout the design/fabrication or develop codes/programs to achieve the objectives by strictly following steps specified in the teaching plan. Innovative design concepts, performance, scalability, reliability considerations, aesthetics/ergonomic, user experience and security aspects taken care of in the project shall be given due weight.

The progress of the mini project is evaluated based on a minimum of two reviews. The review committee may be constituted by the Head of the Department comprising HoD or a senior faculty member, Mini Project coordinator and project guide. The internal evaluation shall be made based on the progress/outcome of the project, reports and a viva-voce examination, conducted internally by a 3-member committee. A project report is required at the end of the semester. The project has to be demonstrated for its full design specifications.

End Semester Examination Pattern:

The marks will be distributed as

     Presentation : **30 marks**

     Demo   : **20 marks**

     Viva   : **25 marks.**

     Total   : **75 marks**.

TEACHING PLAN

Students are expected to follow the following steps.

1. Review of Literature and Identification of a problem

2. Create an abstract with a problem statement, solution approach, technology stack, team, etc. and get department approval. Register Online course/ Collect study materials.

3. Create Software Requirements Specification (SRS Document)

4. Create Software Design Document (SDD). This may include designs like,
    a. System Architecture Design
    b. Application Architecture Design
    c. GUI Design (Mockups)
    d. API Design
    e. Database Design
    f. Technology Stack

5. Create Test Plan, Test Scenarios and Test Cases (Test Case Document) & Traceability Matrix

6. Create a Project Plan (with Modules, Tasks, Resources, Time schedule) [May use any project management tool or excel for this] – Choose and follow agile or waterfall models.

7. Development
    a. Set coding standards
    b. Environment Setup
    c. Source Code Control Setup (Like Subversion(SVN), Git)
    d. Development
    e. Unit Testing
    f. Integration Testing
    g. Testing /Quality Assurance(QA)
        i. Functional Testing
        ii. Load Testing
        iii. Report Bugs
    h. Resolve Bugs & Retest

8. Deployment (of software from local development environment to a production environment)

9. Test Run & Get Results

10. Prepare Project Report

Guidelines for the Report preparation

A bonafide report on the mini project shall be submitted within one week after the final presentation. Minimum number of pages should be 40.

● Use Times New Roman font for the entire report – Chapter/Section Title – Times New Roman18, Bold; Heading 2 – Times New Roman16, Bold; Heading 3 – Times New Roman14, Bold; Body- Times New Roman 12, Normal.

● Line Spacing – Between Heading 2 – 3 lines, between lines in paragraph 1.5 lines.

● Alignments – Chapter/Section Title – Center, Heading 2 & 3 should be Left Aligned. Ensure that all body text is paragraph justified.

● Figures & Tables – Ensure that all Figures and Tables are suitably numbered and given proper names/headings. Write figuretitle under the figure and table title above the table.

● **Suggestive order of documentation:**

 i. Top Cover

 ii. Title page

 iii. Certification page

 iv. Acknowledgement

 v. Abstract

 vi. Table of Contents

 vii. List of Figures and Tables

 viii. Chapters

 ix. Appendices, if any

 x. References/Bibliography