

**Complex Engineering Activity**

**SOFTWARE PROJECT MANAGEMENT**

# Student Name: Student ID:

| **CEP**  **Statement** | | Gather information from a respective domain and identify emerging problems in manual management systems, then Design and implement automated version of manual management systems with embedded solutions of identified problems, to solve a real-life management issues. | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | |
| **PLO’s** | | **PLO2 – Problem Analysis** | | | Bloom’s Taxonomy | **C4 – Analyze** | | |
| **PLO3 – Design and Development** | | | **C3 – Apply** | | |
| **PLO9 – Team Work or Individual** | | | **A3 – Assume Responsibility** | | |
| **COMPLEX ENGINEERING ACTIVITY** | | | | | | | | |
| **CPA** | **CLO’s** | | **Aspects of Assessments** | **Excellent**  **(75-100%)** | **Average**  **(50-75%)** | **Poor (<50%)** | **Marks** | |
| **CEA-2**  **CEA-5** | **CLO2**  **PLO2** | | **Problem Analysis** Problem identification, analysis /literature review, resulting in meaningful conclusions | Completely identifies the problem in question through efficient analysis/produces near to exact results | Partially identifies the problem in question and with academic support produces the required results. | Lack of identification of the problem, needing more than par support to analyze the problem and production of results. | **Project**  **Idea**  **(15%)** |  |
| **Proposal**  **(15%)** |  |
| **CEA-1**  **CEA-2**  **CEA-5** | **CLO3**  **PLO3** | | **Design & Development** Design/Develop solution of real-life management issues using knowledge gather while learning SPM course. | A complete solution / Explain necessary theories according to task description with great use of time and resource material. | Solution was complete but need minor modifications / student could have followed specification more closely. | Solution was complete but did not work, needed several modifications / did not make correct use of resource material or instructions. | **Project Progress**  **(40%)** |  |
| **CEA-2**  **CEA-5** | **CLO8**  **PLO9** | | **Teamwork** Completion of project tasks with proper team work and contribution. | Proactively work with other team members to complete assigned tasks. | Worked well with team but did not offer much positive feedback. | Very little, if any, contributions to group and less contribution in completion of overall lab tasks. | **Demo**  **(15%)** |  |
| **Report**  **(15%)** |  |
|  | **Total Marks: 30** | | | | | |  | |

**Graded by Engineer:** \_ **Date:**

**Remarks:**

## Complex Engineering Activity

The semester project is designed in a way to able students to solve a complex engineering Activity. The following characteristics of Complex Engineering Activity are targeted in this semester’s project on Software Project Management:

| **CEA-1** | Range of resources | **Diverse resources** (people, money, equipment, materials, information, and technologies |
| --- | --- | --- |
| **CEA-2** | Level of interaction | Require resolution of significant problems arising from interactions between **wide-ranging** or **conflicting** technical, engineering, or other issues. |
| **CEA-5** | Familiarity | Can extend **beyond previous** experiences by applying **principles-based** approaches |

| **Course** | **CPA Attributes** | **CLO** | **PLO (WA)** | **Bloom’s Taxonomy** |
| --- | --- | --- | --- | --- |
| **Software Project Management**  **(Lab)** | CEA-2  CEA-5 | CLO2 | PLO2 | C4 **(Analyze)** |
| CEA-1  CEA-2  CEA-5 | CLO3 | PLO3 | C2 **(Apply)** |
| CEA-2  CEA-5 | CLO8 | PLO9 | A3 **(Assume Responsibility)** |

## CEP Statement:

Gathers information from a respective domain and identify emerging problems in manual systems, then Design and implement automated version of manual management systems with embedded solutions of identified problems, to solve a real-life management issues.

## Design Constraints:

Select your project idea keeping the below points under view:

* A project must be unique in that it is not a routine business operation. The project has a unique set of operations that aim to accomplish one goal.
* Estimating how long it will take to complete and specifying the quality of deliverables. Also, listing what the project requires and what resources to use, tracking the project’s progress against the original plan, using any project management tool.
* Projects may include developing software like jira or even various web sources like torrent websites, online apps etc. for an improved business process.

## Project Phases

The project is carried out in three phases

1. **Problem Identification/Idea/Initial Study:**

In the first phase, students are asked to bring the problems they intend to work on. Counseling is given to students in the lab and contact hours for finalizing their ideas and preparing a proposal. Students have to explore the problems/issues around them, which they can solve using programming constructs. If the problems brought by the students are irrelevant to the course or not feasible at this level, they are asked to bring up some other problem. Once ideas are finalized, constant counseling must be provided by the Course Instructor/Lab Engr.

1. **Project Proposal:**

In this phase, students have to explore the literature or existing solutions for their selected project idea. In this phase, students are also encouraged to have a detailed analysis of the problem to solve it in a better way. Each student’s project is unique and may have many possible solutions as well as may be explored and developed in a different way. After discussion, students are asked to submit a proposal on one idea approved by the Instructor/Lab Engr.

**Project Demonstration**

Every project is checked by running and observing the output. Students had the option of using any programming language and tool to develop a project. Students have to apply in-depth engineering knowledge to complete each project **(CEA1, CEA5**). During the initial study and formulation of the proposed solution, they focused on the detailed requirements **(CEA-2)**, and real-time constraints **(CEA-2)** and performed an in-depth analysis.

Projects were evaluated on the following criteria:

* **Idea/Initial Study** (CEA-2) **15%**
* **Project Proposal** (CEA-2, CEA-5) 1**5%**
* **Project Progress** (CEA-1, CEA-2, CEA-5) **40%**
* **Demo/Report** (CEA-2, CEA-5) **30%**

## Summary:

The following are salient outcomes of the semester project in terms of Complex Engineering Activity:

* Brainstorming exercises forced them to explore the surrounding environment to sort out the problems to be solved using programming constraints.
* Problem formulation enhances their ability to gather real-time requirements and address conflicts/constraints.
* Design/Implementation gave them a chance to go through the in-depth engineering knowledge to solve the problem and analyze it in an effective way