

## Course Details

Program(s)	Subject Name	Academic Session, Semester	Subject Code & Credit	
B.Tech.	Software Engineering	Autumn, 2025 (5 <sup>th</sup> Semester)	CS-31001	Cr-4, <b>L – T – P</b> <b>3 – 1 – 0</b>

**Note: 4 Credits = 15x4= 60 Hours (as per National Credit Framework, 1 credit = 15 Hours)**

Subject Faculty: Dr. Hitesh Mohapatra

## Activity 4

Sl. No	Questions	CO's	Bloom's Taxonomy
1.	Define the five main phases of project management in the context of a software development lifecycle. Provide one key activity from each phase.	CO1	Knowledge
2.	List and describe at least four commonly used software estimation techniques (e.g., Function Point, Use-Case Point, Expert Judgment, etc.). Mention one scenario where each is preferred.	CO2	Knowledge
3.	What are software project metrics? Name and briefly explain three types of project metrics and how they are collected.	CO3	Knowledge
4.	Explain the role of risk management in software projects. What is the difference between risk mitigation, risk avoidance, and risk transfer? Provide one example for each.	CO3	Comprehension
5.	Given a case where a development team consistently misses sprint deadlines, explain how poor project scheduling might be the root cause. What scheduling techniques could address this issue?	CO2	Comprehension
6.	You're assigned to a team estimating a new mobile app project. <ul style="list-style-type: none"> <li>• Use Function Point Analysis or any other estimation method to estimate size and effort.</li> <li>• Provide assumptions and derive person-month values using COCOMO (basic level).</li> </ul>	CO3	Application
7.	Create a project schedule for a 12-week software project using either a Gantt Chart or PERT diagram. Include tasks like requirement gathering, design, development, testing, deployment.	CO4	Application
8.	You've been asked to assess the failure of a project that exceeded budget and missed deadlines.	CO5	Analysis

	<ul style="list-style-type: none"> <li>Analyze which metrics, estimation errors, and scheduling gaps could have led to the failure.</li> <li>Include a table of “planned vs. actual” figures.</li> </ul>		
9.	<p>Perform a comparative analysis of software maintenance vs. software re-engineering. Under what conditions should re-engineering be chosen over maintenance?</p> <ul style="list-style-type: none"> <li>Provide 2 case-based examples to support your answer.</li> </ul>	CO5	Analysis
10.	<p>Imagine you're leading a project to re-engineer a legacy payroll system.</p> <ul style="list-style-type: none"> <li>Draft a high-level re-engineering plan that includes reverse engineering, risk assessment, and re-documentation.</li> <li>Include a diagram representing the re-engineering workflow.</li> </ul>	CO6	Synthesis
11.	<p>In a group of 3–4, prepare a detailed Risk Mitigation Plan for a healthcare mobile app.</p> <ul style="list-style-type: none"> <li>Identify at least 5 project-specific risks,</li> <li>Describe the mitigation strategies, triggers, and contingency plans.</li> <li>Represent your plan in a risk matrix.</li> </ul>	CO6	Synthesis
12.	<p>Evaluate a recently failed government IT project (choose from Aadhaar, GST Portal, or IRCTC revamp).</p> <ul style="list-style-type: none"> <li>Based on your research, critically evaluate its project management practices: estimation, risk management, scheduling, or maintenance.</li> <li>Use industry standards (like PMBOK or IEEE standards) as reference points and recommend how such failures can be avoided in the future.</li> </ul>	CO6	Evaluation