K. S. INSTITUTE OF TECHNOLOGY

An Autonomous Institution under VTU, Approved by AICTE

Department of Computer Science & Engineering

M.Tech SECOND SEMESTER SYLLABUS

Course: Software Project Planning and Management		Semester	II
Course Code	**25MSCS215C**	CIE Marks	50
Teaching Hours/Week (L:P:SDA)	3:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Examination type (SEE)	**Theory**		

Course Objectives (Course Skill Set)

- Enhance software delivery predictability and includes requirements gathering, planning and designing the product.
- Planning a framework enables the manager to make reasonable estimates of resources, cost, and schedule.

Module-1

Metrics: Introduction, The Metrics Roadmap, A Typical Metrics Strategy, What Should you Measure?, Se Targets and track Them, Understanding and Trying to minimize variability, Act on data, People and Organizational issues in Metrics Programs, the processes and activities of software configuration management, configuration status accounting, configuration audit, software configuration management in geographically distributed teams, Metrics in software configuration management, software configuration management tools and automation.

Module-2

Risk Management: Introduction, What is risk management and why is it important?, Risk management cycle Risk identification: common tools and techniques, Risk Monitoring, Risk Mitigation, Risks and Mitigation in the context of global project teams, some practical techniques risk management, Metrics in risk management Project Planning and Tracking: Components of Project Planning and Tracking, The "What" Part of a Project Plan, The "What Cost" Part of a Project Plan, The "When" Part of Project Planning, The "How" Part of a Project Planning: Tailoring of Organizational Processes For the Project, The "By Whom" Part of the Project Management Plan : Assigning Resources, Putting it all together : The Software Management Plan, Activities Specific to Project Tracking, Interfaces to the Process Database.

Module-3

Software Requirements gathering: Inputs and start criteria for requirements gathering, Dimensions of requirements gathering, Steps to be followed during requirements gathering, outputs and quality records from the requirements phase, Metrics for requirements phase. Estimation: What is Estimation? When and why is Estimation done?, the three phases of Estimation, Estimation methodology, formal models for size Estimation Metrics for the Estimation processes. Design and Development Phases: Some differences in our chosen approach, salient features of design, evolving an architecture/ blueprint, design for reusability, technology choices/ constraints, design to standards, design for testability, design for diagnose ability, design for install ability, interoperability design, challenges during design and development phases, metrics for design and development phases.

Module-4

Project management in the testing phase: Introduction, What is testing?. Project management in the Maintenance Phase: Introduction, Activities during Maintenance Phase, management issues during Maintenance Phase, Configuration management during Maintenance Phase, skill sets for people in the maintenance phase, estimating size, effort, and people resources for the maintenance phase, advantages of using geographically distributed teams for the maintenance phase, metrics for the maintenance phase.

Module-5

Globalization issues in project management: Evolution of globalization, challenges in building global teams, Models for the execution of global projects, some effective management techniques for managing global teams. Impact of the internet on project management: Introduction, the effect of internet on project management, managing projects for the internet, Effect on the project management activities. People focused process models: Growing emphasis on people centric models, people capability maturity model(P-CMM), other people focused models in the literature, how does an organization choose the models to use?

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

1. Three Unit Tests each of **25 Marks**
2. Two assignments each of **25 Marks** or **one Skill Development Activity of 25 marks** to attain the COs and POs
3. The sum of three tests, two assignments/skill Development Activities, will be scaled down to **50 marks.**

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

1. The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
2. The question paper consists of Part A and Part B. Part A consists of 10 questions from 5 modules, each carrying 2 marks.
3. Part B consists of 10 questions. Each full question is for 16 marks. There will be two full questions (with a maximum of three sub-questions) from each module.
4. Each full question will have a sub-question covering all the topics under a module.
5. The students will have to answer five full questions, selecting one full question from each module.

Suggested Learning Resources:

Text Books:

1. Ramesh Gopalaswamy: "Managing Global Projects ", Tata McGraw Hill, 2013.

Refence Books:

1. Watts Humphrey, "Managing the Software Process ", Pearson Education, New Delhi, 2000
2. Pankaj Jalote, "Software Project Management in practice", Pearson Education, New Delhi, 2002.Hill,2009

Web links and Video Lectures (e-Resources):

- https://onlinecourses.nptel.ac.in/noc19_cs70/preview 2.
- https://www.tutorialspoint.com/software_engineering/software_requirements.htm 3.
- https://prezi.com/p/9aroyjox8hce/globalization-issues-in-project-management/ 4. https://www.youtube.com/watch?v=ZRaZVLRXctU

Skill Development Activities Suggested:

The students with the help of the course teacher can take up relevant technical activities which will enhance their skill. The prepared report shall be evaluated for CIE marks.

Course outcome (Course Skill Set):

At the end of the course the student will be able to :

Sl. No.	Description	Blooms Level
CO1	Identify the resources required for a project and produce a work plan and resource schedule	L2
CO2	Monitor the progress of a project and to assess the risk of slippage, revising targets counteract drift	L4
CO3	Use appropriate metrics to management the software development outcome	L4, L5

Program Outcome of this course:

Sl. No.	Description	POs
1	**Engineering Knowledge:** Apply knowledge of mathematics, science, engineering fundamentals, and a specialization to the solution of complex engineering problems.	PO1
2	**Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles.	PO2
3	**Design/Development of Solutions:** Design solutions for complex engineering problems and design system components that meet specified needs with consideration for public health and safety, cultural, societal, and environmental concerns.	PO3
4	**Conduct Investigations of Complex Problems:** Use research-based knowledge and methods including design of experiments, analysis, and interpretation of data, and synthesis of information to provide valid conclusions.	PO4
5	**Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools to complex engineering activities with an understanding of limitations.	PO5
6	**Engineer and Society / Project Management & Finance:** Demonstrate knowledge and understanding of engineering and management principles to manage projects, as well as societal, health, safety, legal, and cultural issues.	PO6

Mapping of COs and POs

	PO1	PO2	PO3	PO4	PO5	PO6
CO1						x
CO2				x	x	
CO3				x		