Software Project Management

Course Code: **MCA-215** **L T C**
Course Name: **Software Project Management** **3 1 4**

INSTRUCTIONS TO PAPER SETTERS:

1. Question No. 1 should be compulsory and cover the entire syllabus. There should be 10 questions of short answer type of 2.5 marks each, having at least 2 questions from each unit.
2. Apart from Question No. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions to evaluate analytical/technical skills of candidate. However, student may be asked to attempt only 1 question from each unit. Each question should be of 12.5 marks, including its subparts, if any.
3. Examiners are requested to go through the Course Outcomes (CO) of this course and prepare the question paper accordingly, using Bloom's Taxonomy (BT), in such a way that every question be mapped to some or other CO and all the questions, put together, must be able to achieve the mapping to all the CO(s), in balanced way.

LEARNING OBJECTIVES:

In this course, the learners will be able to develop expertise related to the following:-

1. Effective management of software projects.
2. Tools and techniques used for project management.
3. The model-based software architectures.
4. Workflows of the process of Software project Management.

PRE-REQUISITES:

1. Software Engineering Concepts
2. Academic Projects

COURSE OUTCOMES (COs):

After completion of this course, the learners will be able to:-

CO #	Detailed Statement of the CO	BT Level	Mapping to PO #
CO1	Illustrate project scheduling within time and budget	BTL2	PO1, PO2, PO3, PO5
CO2	Identify ethical issues related to software project management.	BTL3	PO1, PO2, PO3
CO3	Apply the model-based software architectures.	BTL3	PO1, PO2, PO3, PO4, PO5
CO4	Analyse how a project can be monitored, controlled and assessed.	BTL4	PO1, PO2, PO3, PO4, PO5, PO6, PO10
CO5	Evaluate risk associated with project development, and design policies to reduce risk.	BTL5	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO10
CO6	Develop an efficient project to reduce rework and labour-intensiveness.	BTL6	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10,

			PO11, PO12

UNIT – I

No. of Hours: 10 **Chapter / Book Reference: TB1 [Chapter 3]; TB2 [Chapter 4]; TB3 [Chapters 6-9]**

Introduction: Introduction to software project management and control, Comparative study of different software projects, scope of project management, project life cycle management, role of the Software Project Manager, Software Tools for Project Management.

Project Planning: Business Planning - Determining Objectives, Forecasting demand for the Product, Proposal Writing, Requirements analysis, Legal issues (patent, copyright, liability, warranty), Financial planning – budgeting, Resource Allocation, Organizational considerations, (teams, hierarchies, etc.), Human factors and usability.

Use of Software (Microsoft Project/Project Libre/Open Source) to Assist in Project Planning Activities.

UNIT – II

No. of Hours: 10 **Chapter / Book Reference: TB1 [Chapters 1-2]; TB2 [Chapters 1-3]; TB3 [Chapters 1-2]**

Project Scheduling: Time Management, Project Network Diagram, Critical path Analysis, PERT, Gantt Chart, Finalizing the project schedule.

Project Cost Management: Resource planning, Cost Metrics, Cost Estimation (Types, Expert Judgment, Estimation by Analogy, COCOMO I & COCOMO II, Earned Value Management), Monitoring & Controlling the project budget.

UNIT – III

No. of Hours: 10 **Chapter / Book Reference: TB1 [Chapters 4-6]; TB2 [Chapter 5]**

Project Quality Management: Stages, Quality Planning, Quality Assurance, Quality Control, Quality Standards, Tools and Techniques for Quality Control.

Project Human Resource Management: Definition, Introduction to CRM, Key terms to management, Issues in Project Staff Acquisition and Team Development, Performance Reporting.

UNIT – IV

No. of Hours: 10 **Chapter / Book Reference: TB2 [Chapter 6, 8-11]; TB3 [Chapters 11-13]**

Project Risk Management: Introduction and Importance of project risk management, Common Sources of risk in IT projects, Risk Identification, Risk Quantification, Risk Response Development and Control.

Project Procurement Management: Definition, Procurement Planning, Procurement phases.

Project progress monitoring, Configuration Management, Software project metrices, Project Execution and Closure.

TEXT BOOKS:

TB1. Bob Hughes, Mike Cotterell, "Software Project Management" Tata McGraw-Hill, 6th Edition, 2017.