SEMESTER S6

SOFTWARE PROJECT MANAGEMENT

Course Code	PEITT633	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	PCITT503 - Software Engineering	Course Type	Theory

Course Objectives:

1. To provide an in-depth understanding of the software project management process, including its key concepts, methodologies, and frameworks.
2. To equip students with the skills required to evaluate, plan, and estimate software projects, ensuring effective management of project portfolios and individual projects.
3. To develop students' ability to apply principles of activity planning, risk management, and resource allocation to ensure efficient sequencing, scheduling, and management of project activities and resources.
4. To enhance students' knowledge of monitoring and control processes, contract management, people management, and teamwork, enabling them to support successful project execution and delivery.

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SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	**Introduction to Software Project Management**: Introduction, Importance, Activities, Plans, methods and methodologies, Categorization, Project Charter, Stake holders, Setting Objectives, **Management**: Management Control, Project Management Life Cycle, Traditional vs Modern project management	9
2	**Project Evaluation:** Project portfolio management- Evaluation of individual projects- Cost benefit evaluation techniques- Risk evaluation- Programme Management- Managing allocation of resources-Strategic Programme Management-Creating a Programme- Aids to Programme Management-	9

	Benefits Management. **Project Planning**: Step wise Project Planning **Software Estimation:** Basis for software estimation- Software Effort estimation techniques- Bottom-up and Top-down estimation- Function Point Analysis- COCOMO II. Cost Estimation- Staffing Pattern- Schedule compression.	
3	**Activity Planning:** Objectives- Project Schedules- Projects and Activities- Sequencing and Scheduling Activities- Network Planning Models- Forward Pass- Backward pass- Identifying Critical Path – Activity Float- Shortening the Project Duration- Identifying Critical Activities- Activity-on-arrow networks. **Risk Management:** Risk- Categories of Risk- Risk Management Approaches-Risk Identification- Risk Assessment- Risk Planning- Risk management- Risk Evaluation- PERT, Monte Carlo Simulation, Critical Chain. **Resource Allocation:** Nature of Resources- Identifying and Scheduling Resources- Creating Critical Paths- Cost Schedule- Scheduling sequence.	**9**
4	**Monitoring and Control:** Creating the framework- Collecting data- Review - Visualizing Progress- Cost Monitoring- Earned Value Analysis- Prioritizing Monitoring-Getting the project back to target- Change control- Software Configuration Management. **Managing Contracts**- Types of Contract-Stages in Contract Placement- Contract Management **Managing People:** Organizational Behaviour- Selecting the right Person- Motivation- The Oldham-Hackman Job Characteristics Model-Stress- Stress Management- Health and Safety- Ethical and Professional Concerns **Working in Teams**- Becoming a Team- Decision Making- Organization and Team Structures- Coordination Dependencies- Dispersed and Virtual Teams – Communication Genres- Communication Plans- Leadership.	**9**

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Course Assessment Method
(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/ Micro project	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	15	10	10	40

End Semester Examination Marks (ESE):

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks **(8x3 =24marks)**	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. **(4x9 = 36 marks)**	**60**

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Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Explain the fundamentals of software project management	**K2**
CO2	Apply project evaluation, planning, and software estimation techniques to effectively manage project portfolios, individual projects ensuring optimal resource allocation and cost estimation	**K3**
CO3	Describe the principles of activity planning, risk management and resource allocation to effectively sequence, schedule and manage project activities and resources	**K2**
CO4	Explain the principles of monitoring and control, contract management, people management, and team work to effectively support project execution and delivery	**K2**

Note*: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create*

CO-PO Mapping Table (Mapping of Course Outcomes to Program Outcomes)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	-	-	2	-	-	-	2	3	2
CO2	3	2	-	-	-	-	-	-	2	2	3	2
CO3	3	-	-	-	2	-	-	-	2	3	3	2
CO4	3	-	-	-	-	-	-	-	3	2	3	2

Note: *1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), -: No Correlation*

Text Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Software Project Management	Bob Hughes, Mike Cotterell, Rajib Mall	Mc Graw Hill India	6th edition, 2017

Reference Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Software Project Management in Practice	Pankaj Jalote	Pearson	1st edition, 2015
2	Software Engineering	Ian Somerville	Pearson	10th edition,2017
3	Software Engineering : A Practitioner's Approach	Roger S Pressman, Bruce R Maxim	Tata McGraw Hill	8th edition, 2019

Video Links (NPTEL, SWAYAM…)	
No.	**Link ID**
1	https://onlinecourses.nptel.ac.in/noc24_mg78/preview

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