Course Code	21MGH303P	Course Name	IT PROJECT MANAGEMENT	Course Category	H	HUMANITIES & SOCIAL SCIENCES	L	T	P	C
							2	1	0	3

Pre-requisite Courses	Nil	Co- requisite Courses	Nil	Progressive Courses	Nil		
Course Offering Department		Faculty of Management	Data Book / Codes / Standards		Nil		

Course Learning Rationale (CLR):	The purpose of learning this course is to:	Program Outcomes (PO)												Program Specific Outcomes		
CLR-1:	familiarize the software life cycle methods and overview of software project	1	2	3	4	5	6	7	8	9	10	11	12			
CLR-2:	understand the various techniques for requirements, planning ,managing and estimation of a technology project	Engineering Knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern Tool Usage	The engineer and society	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning	PSO-1	PSO-2	PSO-3
CLR-3:	examine the project management features															
CLR-4:	understand the Agile methodologies															
CLR-5:	understand the SCRUM methodologies															

Course Outcomes (CO):	At the end of this course, learners will be able to:															
CO-1:	identify the process of project life cycle model and process	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
CO-2:	analyze and specify software requirements through a productive working Relationship with project stakeholders	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1
CO-3:	understand and implement the project management features	-	2	-	-	-	-	-	3	-	-	3	-	-	-	3
CO-4:	design the system based on Agile process model	-	2	-	3	-	-	-	-	-	-	-	-	-	-	2
CO-5:	develop the product using SCRUM model	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2

Unit-1 - Introduction to Project management — 9 Hour

Software project management and its scope – Phases of project management – Initiation phases and contracting - Project Identification and selection – Project scope management - Planning phase - Project cost estimation and capital budgeting - Software process Models - Traditional Models, Conventional models - Requirement Analysis - Requirement Engineering - Requirement elicitation - Market and Demand Analysis - Software project effort

Practical:
1. Project requirement Gathering and analysis, 2. Project identification process methodology and stake holder description
3. Project cost estimation and capital budgeting (Software Cost Estimation models using various techniques), 4. Market demand analysis and demand planning

Unit-2 - Project Scheduling — 9 Hour

Work breakdown structure (WBS) - Program Evaluation Review Techniques (PERT) and Critical Path method (CPM) – Gantt Chart – Project team formation methods and structure – Selection of project manager – Roles and responsibilities of project manager – Project execution – Project resource allocation and levelling techniques – Project crashing methods

Practical:
1. Project Evaluation and Review Technique (PERT) analysis, 2. Critical Path Method (CPM) analysis, 3. Project resource levelling techniques, 4. Project crashing techniques

Unit-3 - Project Monitoring — 9 Hour

Cost, Time, Scope and performance monitoring – Analyzing cost and schedule performance index – Project performance analysis - Project controlling techniques – Cost controlling techniques, Project change control - Project quality controlling techniques - Project Risk Analysis - Project Risk management - RMMM plan and control - Other project Management feature discussion

Practical:
1. Project performance analysis, 2. Risk Management and Mitigation, 3. RMMM Plan Configuration Management, Software Configuration Management GitHub, 4. Unit testing with test cases

Unit-4 - Project Closing Phase	9 Hour

Project audits: Objectives and goals, Types of audits - Project Termination - Software Testing, testing strategies - Types of Testing, Evaluation of project - Introduction to Agile process development - Manifesto of Agile process - Agile Principles - Agile practices - Agile methodologies - Agile Framework – Phases of development - Relationship between Conventional Agile - IT Service Management-Lifecycle

Practical:

1. Project audits, 2. Agile Approaches Framework - Sprint Planning, Review, 3. Daily Scrum Planning, Story Boards Creation, Tracking Progress, Sprint Review
4. Agile Approaches - Extreme Programming - Small releases Scrum, Lean

Unit-5 - Scrum Methodology and its Terminologies	9 Hour

Framework and its scope - Project management activities- sprint backlog, sprint review - Retro perspective, Best practices of Scrum, Roles in Scrum - Slack, Ten minute build, Continuous Integration - Introduction to DevOps - Introduction to XP -   Process methodology - Framework and its limitation

Practical:

1. Scrum method and framework, 2. Weekly cycle, Pair programming, Coding Standards, 3. DevOps using Docker, 4. XP Programming

Learning Resources	1. Roger S. Pressman, Software Engineering – A Practitioner Approach, 11th ed., McGraw Hill, 2015 2. Lan Sommerville, Software Engineering, 10th ed., Pearson Education, 2010 3. Rajib Mall, Fundamentals of Software Engineering, 4th ed., PHI Learning Private Limited, 2014	4. Roman Pichler, Agile Product Management with Scrum 5. Ken Schwaber, Agile Project Management with Scrum (Microsoft Professional) 6. Jim Smith Agile Project Management: Creating Innovative Products,Pearson 2008. 7. Mike Cohn, Succeeding with Agile: Software Development Using Scrum

Learning Assessment

	Bloom's Level of Thinking	Continuous Learning Assessment (CLA)						Final Examination (0% weightage)	
		Formative CLA-1 Average of unit test (20%)		Project Based Learning CLA-2 (60%)		Report and Viva Voce (20%)			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	40%	-	-	20%	-	20%	-	-
Level 2	Understand	40%	-	-	20%	-	20%	-	-
Level 3	Apply	10%	-	-	20%	-	20%	-	-
Level 4	Analyze	10%	-	-	20%	-	20%	-	-
Level 5	Evaluate	-	-	-	10%	-	10%	-	-
Level 6	Create	-	-	-	10%	-	10%	-	-
	Total	100 %		100 %		100%		-	

Course Designers

Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
Expert Member from TCS		
1. Mr. Girish Raghavan, Senior DMTS Member, Wipro Ltd.	1. Dr. Srinivasa Rao Bakshi, IITM Chennai, sbakshi@iitm.ac.in	1. Dr.Yaseen Masvood, FOM
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