

Branch Name:	MCA
Program Code:	CS201
Course Name:	SOFTWARE ENGINEERING AND PROJECT MANAGEMENT
Course Code:	4CS2010301T
Pre-requisite Course:	Systems & Object-Oriented Design Methodologies, Programming experience Of higher-level languages.

Course Objective:

1. The course intends to introduce the concepts of software engineering and software development.
2. The course provides the opportunities for the learner to learn the fundamentals, software processes.
3. This course also covers the requirements engineering and its use in software modeling and design.
4. This course equips the learner with the knowledge of software project management.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
4	1	-	5	60	40	-	-	100

Subject Contents				
Sr. No	Topic	Total Hours	Weight (%)	
1	Introduction to Software Engineering & Process Models Software, Software Engineering, Software Characteristics, Software Application, Software Process, Layered Technology. Process Models – Waterfall, Incremental, Evolutionary Process Model– Prototype and Spiral Model.	12	25	
2	Principles of Software Engineering; and Requirements Modeling Introduction, Core Principles of Process and Practice, Principles Guiding Each Framework Activity. Requirements engineering: Functional and nonfunctional requirements, Requirements engineering processes, Requirement elicitation, Requirement specification, Requirement validation, Requirements change.	12	25	
3	Introduction to Object Oriented Analysis and Design Overview of UML, Conceptual Model of UML, Architecture, Software development life cycle Basic Structural Modeling Classes, Relationships, Class Diagrams Behavioral Modeling Interactions, Use Cases, Use Case Diagrams, Interaction Diagrams, Activity Diagrams Events and Signals, State Machines, State chart Diagram	12	25	
4	Software Project Management : Software Project Management , COCOMO Model , Project Scheduling , Software Configuration Management , Software Maintenance , Quality Assurance Plans , Verification and Validation , Project Monitoring Plans , Software Risk Management , Project Planning.	12	25	

Text Books:

1. Roger S. Pressman, “Software Engineering – A Practitioner’s Approach”, 7th Edition, McGraw Hill Publications
2. Sommerville, “Software Engineering”, 8th Edition, Pearson Education

References Books:

1. Waman S. Jawadekar, “Software Engineering – Principles and Practices”, TMGH Publication
2. The Unified Modeling Language - User Guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson Education Publication, 2009 Reprint
3. Pankaj Jalote, Software Engineering –A Precise Approach, Wiley India
4. Object-Oriented Modeling and Design with UML by Michael Blaha, James Rumbaugh, Pearson Education Publication, 2nd Edition, 2007 Reprint
5. Object Oriented Analysis and Design Using UML by Mahesh P. Matha, PHI Publication

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom’s Taxonomy Level
CLO1	Design a solution to a given problem using one or more design patterns and implement the design in a programming language.	3 Applying,
CLO2	Understand common lifecycle processes including waterfall (linear), incremental approaches (such as Unified process), and agile approaches.	2 Understanding, 1 Remembering
CLO3	Learn Key modeling concepts that apply to both the traditional structured approach and the newer object- oriented approach	4 Analyzing
CLO4	Identify and analyze the system requirements using various system analysis techniques	2 Understanding,
CLO5	Design information system using structured and object-oriented techniques	6 Creating
CLO6	Model different views of information systems using object-oriented design patterns	4 Analyzing
CLO7	Discuss importance of project management and quality management.	3 Applying 2 Understanding,

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1	H	H	M	L		L			M			M	M	L
CLO2		L			M		L	M			M		M	M
CLO3	M		M		H	M			M			M	M	M
CLO4	L	M		L		M	L		M	L		M	L	H
CLO5		M	M		L		M		H		L		L	H
CLO6	M		M		M	L	M	M		M	L		M	M
CLO7	M	L		L	M	M	H		M		M	L	H	M

H: High, M: Medium, L: Low