

SVKM's Narsee Monjee Institute of Management Studies
Mukesh Patel School of Technology Management & Engineering

Program: Master of Computer Applications					Semester : II
Course : Software Engineering					Code : 703IT0C001
Teaching Scheme				Evaluation Scheme	
Lecture (Hours per week)	Practical (Hours per week)	Tutorial (Hours per week)	Credit	Internal Continuous Assessment (ICA) (Marks- 50)	Term End Examinations (TEE) (Marks- 100)
2	2	0	3	Marks Scaled to 50	Marks Scaled to 50
Prerequisite: Programming for Problem Solving					
Course Objective The objective of the course is to familiarize the students with Software engineering principles, practices and standards required to develop a quality software. The course also intends to develop the ability and skills for the task of requirement analysis, design and modelling.					
Course Outcomes After completion of the course, the student will be able to - <ol style="list-style-type: none"> 1. Explain the characteristics of various process models used in the development of a Software project 2. Demonstrate an understanding of various Analysis and Design models that provide a basis for the software development 3. Apply UML concepts for modeling software functionality for a given scenario 4. Create test cases for validating the working of the software developed 					
Detailed Syllabus					
Unit	Description				Duration
1.	Importance of Software Engineering Role of Software, Categories of Software, Legacy Software, Software Myth.				03
2.	Prescriptive Process Models Process Framework, Capability Maturity Model Integration, Waterfall Model, Incremental & RAD Models, Prototyping, Spiral Model, Concurrent Development Model. Agile Process Models Agility, Agile Process, Extreme Programming, Adaptive Software Development, SCRUM				07
3.	UML Modeling Visual modeling with UML, Use case model, Modeling with classes, Identifying classes and objects of real world problems, Defining events and attributes, process of creating class diagram.				08




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	State diagram, Activity diagram, Modeling interaction and behaviour, Sequence and Collaboration Diagram.	
4.	Requirement Analysis & Design Requirement Engineering tasks, Elements of Analysis Model, Data Modeling Concepts, Data Flow Model, and Control Flow Model.	03
5.	Architectural Design Software Architecture, Data Design, Architectural Styles, Representing System in Context, Refining Architecture into Components, Mapping Data Flow into a Software Architecture.	03
6.	User Interface Design Golden Rules for User Interface Design, Interface Analysis & Design, Interface Design Steps.	02
7.	Testing Strategies & Software Quality Test Strategies for Software, Verification & Validation Testing, Unit Testing, Integration Testing, System Testing. McCall's Software Quality Factors, ISO 9126 Quality Factors, Process & Project Metrics, Metrics for Software Quality, SQA Activities, CMMI.	04
	Total	30

Text Books

1. Pressman and Roger S., *Software engineering: a practitioner's approach*, 9th Edition, McGraw Hill, 2019.

Reference Books

1. Sommerville and Ian., *Software engineering*, 10th Edition, Pearson Education, 2017.

Laboratory Work

8 to 10 programming exercises (and a practicum) based on the syllabus.



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