

**MC5203 SOFTWARE ENGINEERING**

DETAILED SYLLABUS

**OBJECTIVES:**

- To provide an insight into software life cycle and various software process models
- To estimate the resources for developing the application and to prepare the schedule
- To know the various designing concepts and notations for modeling the software.
- To prepare the test cases for the project, apply various testing techniques, strategies and metrics to evaluate the software.
- To construct software with high quality and reliability.

**UNIT I INTRODUCTION**

Software Engineering Paradigms – Waterfall Life Cycle Model – Spiral Model – Prototype Model – Agile Process Model – Unified Process Model - Planning – Software Project Scheduling – SRS - Case Study: Project Plan and SRS

**UNIT II SOFTWARE DESIGN**

Designing Concepts - Abstraction – Modularity – Software Architecture – Cohesion – Coupling – Dataflow Oriented Design - Jackson System Development - Real time and Distributed System Design – Designing for Reuse — Case Study: Design for any Application Oriented Project.

**UNIT III SOFTWARE TESTING AND MAINTENANCE**

Software Testing Fundamentals – Software Testing Strategies – Black Box Testing – White Box Testing – System Testing – Object Orientation Testing – State Based Testing – Testing Tools – Test Case Management – Types of Maintenance – Case Study: Testing Techniques.

**UNIT IV SOFTWARE METRICS**

Scope – Classification of metrics – Measuring Process and Product attributes – Direct and Indirect measures – Cost Estimation - Reliability – Software Quality Assurance – Standards – Case Study for COCOMO model.

**UNIT V SCM & WEB ENGINEERING**

Need for SCM – Version Control – SCM process – Software Configuration Items – Taxonomy – Re Engineering – Reverse Engineering - Web Engineering - CASE Repository – Features.

**REFERENCES:**

1. Ali Behforroz, Frederick J. Hudson, "Software Engineering Fundamentals", Oxford Indian Reprint, 2012.
2. Jibitesh Mishra, Ashok Mohanty, "Software Engineering", Pearson Education, First Edition, 2011.
3. Kassem A. Saleh, "Software Engineering", First Edition, J. Ross Publishing, 2009.
4. Pankaj Jalote, "An Integrated approach to Software Engineering", Third Edition, Narosa Publications, 2011.
5. Roger S. Pressman, David Lowe, "Web Engineering: A Practitioner's Approach", Special Indian edition, McGrawHill, 2008.