

**OBJECTIVE**

This course is intended to provide the students with an overall view over Software Engineering discipline and with insight into the processes of software development.

**UNIT - I SOFTWARE PROCESS MODELS 9**

The Evolving role of Software – Software – The changing Nature of Software – Legacy software — A generic view of process– A layered Technology – A Process Framework – The Capability Maturity Model Integration (CMMI) – Process Assessment – Personal and Team Process Models – Product and Process – Process Models – The Waterfall Model – Incremental Process Models – Incremental Model – The RAD Model – Evolutionary Process Models – Prototyping – The Spiral Model – The Concurrent Development Model – Specialized Process Models – the Unified Process.

**UNIT – II REQUIREMENT ENGINEERING 9**

Software Engineering Practice – communication Practice – Planning practice Modeling practice– Construction Practice –Deployment. Requirements Engineering - Requirements Engineering tasks – Initiating the requirements Engineering Process- Eliciting Requirements – Developing Use cases – Building the Analysis Models – Elements of the Analysis Model – Analysis pattern – Negotiating Requirements – Validating Requirements.

**UNIT – III ANALYSIS MODELLING 9**

Requirements Analysis – Analysis Modeling approaches – data modeling concepts – Object oriented Analysis – Scenario based modeling – Flow oriented Modeling – Class based modeling – creating a behaviour model.

**UNIT – IV DESIGN & TESTING 9**

Design Engineering – Design process -Design Quality-Design model-User interface Design – Testing strategies- Testing Tactics - strategies Issues for conventional and object oriented software-validation testing –system testing –Art of debugging – Project management

**UNIT – V QUALITY & MAINTENANCE 9**

Software evolution - Verification and Validation -Critical Systems Validation – Metrics for Process, Project and Product-Quality Management -Process Improvement –Risk Management- Configuration Management – Software Cost Estimation

**TOTAL: 45**

**TEXT BOOKS:**

1. Roger S.Pressman, Software Engineering: A Practitioner's Approach, McGraw Hill International edition, Seventh edition, 2009.
2. Ian Sommerville, Software Engineering, 8th Edition, Pearson Education, 2008.

**REFERENCES:**

1. Stephan Schach, Software Engineering, Tata McGraw Hill, 2007
2. Pfleeger and Lawrence Software Engineering: Theory and Practice, Pearson Education, second edition, 2001