

OBJECTIVES: The objective of the courses is to make the learner efficiently work as software engineer. Design, implement, and evaluate software- based systems, complements or programs of varying complexity that meet desired needs, satisfy realistic constraints, and demonstrate accepted design and development principles.

COURSE:

UNIT – I: INTRODUCTION TO SOFTWARE ENGINEERING.

Definition of software and software engineering, characteristics of software, software myths. Modeling with UML:- UML Concepts, diagrams.

SOFTWARE PROCESS: software process models - the waterfall model , incremental process model, prototyping model, spiral model, RAD model.

UNIT – II: SOFTWARE REQUIREMENT ANALYSIS

Requirements engineering, requirement elicitation for software, developing use cases, requirement validation, requirement specification.

Requirement analysis introduction, elements of the analysis model – data objects, attributes.

UNIT – III: SOFTWARE DESIGN:- The software design process , design concepts, object – oriented design concepts. System design activities :- architectural design, user interface design, component level design, pattern based design.

UNIT – IV: SOFTWARE TESTING: Software testing fundamentals, white box testing, black box testing Software testing strategies:- unit testing, integration testing, regression testing , smoke testing, validation testing, system testing, debugging.

UNIT – V: MANAGING CHANGE: Project management concepts, process improvement, process and product quality, process analysis and modeling, process measurement, process classification, the CMMI process improvement frame work, software maintenance, s/w supportability, s/w reengineering , reverse engineering.

TEXT BOOK:-“Software engineering- a practitioners approach “ by roger s. pressman, MCGRAW HILL, 7th edition.

REFERENCE BOOK:- “Software engineering “by Ian sommersille, pearson education, 7th edition. Software engineering – design reliability and management “by Richard Fairley.