SOFTWARE ENGINEERING

Paper Code   CEN-602

Course Credits   4

Lectures / week   3

Tutorial / week   1

Course Description

UNIT – I

Definition, Program Vs Software, Software processes, Software life cycle models: Build and Fix, Waterfall, Prototype, Iterative Enhancement Model, Evolutionary and Spiral models, RAD Model.

UNIT- II

Size Metrics like LOC, Token Count, Function Count, Design Metrics, Data Structure Metrics, Information Flow Metrics.

UNIT- III

Cost estimation, static, Single and multivariate models, COCOMO model, Putnam Resource Allocation Model, Risk management. Problem Analysis, Data Flow Diagrams, Data Dictionaries, Entity-Relationship diagrams, Software Requirement and Specifications, Behavioral and non-behavioral requirements, Software Prototyping.

UNIT- IV

Cohesion & Coupling, Classification of Cohesiveness & Coupling, Function Oriented Design, Object Oriented Design, User Interface Design. Software Reliability: Failure and Faults, Reliability Models: Basic Model, Logarithmic Poisson Model, Calendar time Component, Overview of Quality Standards like ISO 9001, SEI-CMM

UNIT – V

Software process, Functional testing: Boundary value analysis, Equivalence class testing, Decision table testing, and Cause effect graphing, Structural testing: path testing, Data flow and mutation

	testing, unit testing, integration and system testing, Debugging, Testing Tools, & Standards. Software Maintenance: Management of maintenance, Maintenance Process, Maintenance Models: Quick fix, Iterative Enhancement, Reuse Oriented etc. Reverse Engineering, Software RE-enginnfieering, Coguration Management, Documentation
References / Text Books:	• Pressman, "Software Engineering- A Practioner's Approach, 7th Edition", Tata McGraw Hill. • Prof. K.K.Aggarwal & Yogesh Singh: Software Engineering, New Age International.
Computer Usage / Software Requires:	• Pankaj Jalote, "An Integrated Approach to Software Engg" Narosa Publishing House, New Delhi.