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-engineering, Coguration Management, Documentation

References / Text Books:

- Prof: KK Aggarwal & Yogesh Singh: SOFTWARE ENGG:
- Pankaj Jalote, " An Integrated Approach to Software Engg" Narosa Publishing House, New Delhi.
- Pressman"Priciples of Software Engg" TMC, 5th Ed. 2005

Computer Usage / Software Requires: