Paper Code   **:** SWE 502
Paper Name   **:** Software Engineering

Teaching Hours (Per Week)		Examination Scheme		
TH. (hours)	Pr. (hours)	Internal	External	Total
		Th. (marks)	Th. (marks)	100 (marks)
4		30	70	

Lectures   =   68 Hours

UNIT 1 :   **(13 hrs)**
Introduction: The importance of software, software myths, software engineering paradigms, generic view of software engineering, Software Crisis, Software processes, Software life cycle models : Waterfall, Prototype, Evolutionary and Spiral models.

UNIT 2 :   **(15 hrs)**
Software matrices like LOC, token count, Function count, Design Metrics, Data Structure matrices, Information Flow Metrics, Software Project Planning : Cost Estimation, static, Single and multivariate models, COCOMO Model, Putnam Resource Allocation Model, Risk management.

UNIT 3 :   **(15 hrs)**
Software Requirement Analysis and Specifications:
Overview of DFD, Data Dictionary, E-R Diagrams, Software requirement and Specifications, Behavioral and non-behavioral requirements, Software prototyping.
Software Design : Cohesion & Coupling, Classification of cohesiveness & Coupling, Function Oriented Design, User Design Interface.

UNIT 4 :   **(10 hrs)**
Software quality assurance: Quality concept, quality movement, Software quality assurance, Software review, formal technical review, formal approach to SQA, statistical SQA, Software Reliability, Mistake proofing of software, SQA plan, ISO quality standards

UNIT 5 :   **(15 hrs)**
Software Testing: S/W Testing Fundamentals, White Box Testing, Black Box Testing, Validation Testing, System Testing, Debugging.
Software Maintenance:
Management of Maintenance, Maintenance Process and Models, Reverse Engineering and Re-engineering, Documentation.
Book References:
1.   R. Pressman, "Software Engineering"
2.   K. K. Agarwal and Y. Singh, "Software Engineering"