Branch: BCA	Semester-IV
Subject Code: 4103	Lecture: 04 Credit: 04
Subject Title	INTRODUCTION TO SOFTWARE ENGINEERING

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weightage %
UNIT-I	1	Introduction: Definition, need, software engineering methods, Tools, and procedures, Software Process: Software Engineering layers, SEI-CMM, process framework, Development Lifecycle models: Waterfall, spiral, iterative, enhancement and phased development, RAD model, Component based development model, Prototyping model. Overview, various phases, analysis, design, development and implementation.	5	10
	2	Software project planning :Overview, objectives, scope, resources	3	6
UNIT-II	3	Cost Estimation Techniques : Metrics for software productivity and quality Productivity metrics: direct and indirect methods, size and function oriented metrics, Decomposition techniques: LOC and FP estimation, Effort Estimation: Overview, COCOMO, putnam, esterling models, automated Estimation tools. Configuration and Administration; virtual hosting	5	10
	4	Software Project Scheduling:Task definition and parallelism, effort distribution, scheduling , Methods: PERT and CPM, Software project plan outline Software prototyping : Overview, steps, methods, tools, specification, guidelines	5	10
UNIT-III	5	Requirement analysis methods: introduction, methods Object oriented, data flow and data structure oriented, comparisons, application results, automated tools , Software design Methods: iterative, top-down, bottom-up	5	10
	6	Design representations: flow charts, pseudo code, HIPO and techniques , Modular design: Overview, module coupling and cohesion, various types of coupling, merits and demerits, other approaches to programming.	6	12
	7	Software implementation: Issues, concept of	6	12

		programming support environment,Risk Management Software testing Overview Various tests and methods: top-down, bottom-up, Debugging: definition, techniquesandstrategies,exhaustivetesting, classification, cyclomatic complexity, Overview, integration of hardware and software components		
UNIT-IV	8	Strategies software configuration management, Management activity, planning, monitoring , Controlling, resource management,	5	10
	9	Product assurance: overview, quality assurance, Software quality assurance: definitions for software quality, various types, trade-offs, verification and validation	5	10
	10	Configuration management: identification, control, auditing, status accounting, , overview,definition, V and V life cycle.	5	10
		Total	50	100

Text Books:

1. Pressman "Software Engineering A Practitioner's Approach" McGraw-Hill, 5th Edition, 2005

Reference Books:

1. Shooman "Software Engineering Design, Reliability and Management" McGraw Hill 1983
   Fairley "Software Engineering Concepts" " McGraw--Hill Series, New York, 1985