II YEAR SEM-II B.Tech CSE	CORE	L	T	P	C
CODE:CS2201	SOFTWARE ENGINEERING	2	2	0	4

Outcomes:

1. Comprehend software development life cycle
2. Estimating various estimation techniques of software metrics.
3. Apply software design and development techniques
4. Identify verification and validation methods in a software engineering project
5. Implement testing methods on sample project
6. Apply Non Functional Requirement techniques (Reliability, Risk management) for a case study

Syllabus:

UNIT - I
Introduction: Emergence, Software development life cycle, Process Models;

UNIT - II
Software Project management: project Planning, estimation, Software requirements and specification: gathering, analysis, specification, characteristics, organization

UNIT - III

Software design: overview, characteristics of good design, function-oriented software design, object-oriented design, UML, design patterns

UNIT-IV
Implementation, Coding Standard and Guidelines, review, Unit Testing; Verification and validation

UNIT-V
Integration and systems testing, Black box & White Box Testing, debugging techniques

UNIT-VI
Software quality, SEI CMM and ISO- 9001, Reliability, Safety, Risk Analysis, computer-aided software engineering (CASE).

Text Books:
1. Rajiv Mall, Fundamentals of Software Engineering, PHI; Fourth edition (2014)
2. Pressman, R.S., Software Engineering: A Practitioner's Approach, McGraw Hill, seventh edition, 2010.
3. PankajJalote. An Integrated Approach to Software Engineering, 2nd edition, Narosa Publishing House
Reference Books:
1. Bennett S., McRobb S. & Farmer R., Object Oriented Systems Analysis and Design using UML, Tata McGraw-Hill, second edition, 2004.
2. Summerville, Ian, Software Engineering, Addison-Wesley, fifth edition, 2000.

NPTEL: Prof. sarda, IITB