PSE101 SOFTWARE ENGINEERING CONCEPTS AND METHODOLOGIES			
	L	T	P	Cr
	3	0	2	4.0

Course Objectives: To apply principles of software development and evolution. To specify, abstract, verify and validate solutions to large-size problems, to plan, develop and manage large software and learn emerging trends in software engineering.

Principles and Motivations: History; definitions; Engineered approach to software development; Software development process models from the points of view of technical development and project management: waterfall, rapid prototyping, incremental development, spiral models, Aspect Software Development, Agile Software Development, Emphasis on computer-assisted environments. Selection of appropriate development process.

Software Development Methods: Formal, semi-formal and informal methods; Requirements elicitation, requirements specification; Data, function, and event-based modeling; Popular methodologies such as Yourdons SAD, SSADM; Managing the Software Projects

Software Engineering Tools and Environments: upper and lower CASE tools, evolution of CASE tools-classification, features, strengths and weaknesses; ICASE; CASE standards. Role of the repository for supporting incremental development, software reuse

Software Quality Assurance:SQA Tasks, Goals and Metrics, Software ReviewTechniques: Informal reviews-Formal Technical Reviews, Software Reliability, Software risk management, Case Studies. Real Time Systems

Configuration Management: Need, Configuration management functions and activities; Configuration management techniques; Case studies.

Software Testing Fundamentals: Basic Terminology, Testing Techniques and strategies. Brief introduction to various standards related to Software Engineering.

Recommended Books

1. Pressman, Roger, Software Engineering - A Practitioners Approach, McGraw Hill ,2014 8thed.
2. WamanJawadekar, Software Engineering: Principles & Practices, 1st edition 2004
3. Sommerville, Ian, Software Engineering, Addison-Wesley Publishing Company, 2006 8thed.
4. Jalote, Pankaj, An integrated Approach to Software Engineering, Narosa, 2005.