

Cour se No.	Type	Subject	L	T	P	Credits	CA	MS	ES	Pre-requisites
		Current Trends in Software Development	3	1	0	4	25	25	50	Software Engineering, and Object Oriented Concepts

COURSE OUTCOMES

- Acquire knowledge on the wider perspective of software engineering and architecture issues
- Implement the mathematical notation of the software systems through formal methods.
 - Design and construct the software systems using reusable software “components” by acquiring the knowledge about domain engineering and component based development
- Merge the conventional principles, concepts and methods in software engineering with the elements of object oriented and CBSE to create client/server systems.
- Create high quality web applications by using software engineering concepts and principles like formulation, planning, analysis testing and evaluation.

COURSE CONTENTS:**UNIT I**

Basic concepts, mathematical preliminaries, applying mathematical notations for formal specification, formal specification languages, using Z to represent an example software component, the ten commandments of formal methods

UNIT II

Approach, functional specification, design and testing. Component-Based Software Engineering: CBSE process, domain engineering, component-based development, classifying and retrieving components, and economics of CBSE. Client/Server Software Engineering: Structure of client/server systems, software engineering for Client/Server systems, analysis modelling issues, design and testing issues.

UNIT III

Attributes of web-based applications, the WebE process, a framework for WebE, formulating, analysing web-based systems, design and testing for web-based applications, Management issues.

Business process reengineering, software reengineering, reverse reengineering, restructuring, forward reengineering, Economics of reengineering. Building blocks and taxonomy for CASE, integrated CASE environments, integration architecture, CASE repository, case Study of tools like TCS Robot.

UNIT IV

Model View Controller, Presentation Abstraction Control, UML based development, Use cases, Testing: Mobile infrastructure, Validating use cases, Effect of dimensions of mobility on testing, Case study: IT company, design, Implementation.

UNIT V

Characteristics, I/O, Embedded systems/real time systems. Embedded software architecture, control loop, interrupts control system, co-operating multitasking, pre-emptive multitasking, Domain analysis, Software element analysis, requirement analysis, Specification, Software architecture, Software analysis design, implementation, testing, validation, verification and debugging of embedded systems

SUGGESTED READINGS:

- Software Engineering a Practitioners Approach, Roger S. Pressman, McGraw-Hill, 8 th Edition(2014)
- Formal Specification and Documentation using Z - A Case Study Approach, J.Bowan, International Thomson Computer Press (2003)
- Software Engineering for Embedded Systems: Methods, Practical Techniques, and Applications, Robert Oshana, Mark Kraeling, Newnes Publisher (2013)

