CS6403 SOFTWARE ENGINEERING L T P C
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OBJECTIVES:

The student should be made to:

Understand the phases in a software project

Understand fundamental concepts of requirements engineering and Analysis Modelling.

Understand the major considerations for enterprise integration and deployment.

Learn various testing and maintenance measures

UNIT I SOFTWARE PROCESS AND PROJECT MANAGEMENT 9

Introduction to Software Engineering, Software Process, Perspective and Specialized Process Models – Software Project Management: Estimation – LOC and FP Based Estimation, COCOMO Model – Project Scheduling – Scheduling, Earned Value Analysis - Risk Management.

UNIT II REQUIREMENTS ANALYSIS AND SPECIFICATION 9

Software Requirements: Functional and Non-Functional, User requirements, System requirements, Software Requirements Document – Requirement Engineering Process: Feasibility Studies, Requirements elicitation and analysis, requirements validation, requirements management-Classical analysis: Structured system Analysis, Petri Nets- Data Dictionary.

UNIT III SOFTWARE DESIGN 9

Design process – Design Concepts-Design Model – Design Heuristic – Architectural Design - Architectural styles, Architectural Design, Architectural Mapping using Data Flow- User Interface Design: Interface analysis, Interface Design –Component level Design: Designing Class based components, traditional Components.

UNIT IV TESTING AND IMPLEMENTATION 9

Software testing fundamentals-Internal and external views of Testing-white box testing - basis path testing-control structure testing-black box testing- Regression Testing – Unit Testing – Integration Testing – Validation Testing – System Testing And Debugging – Software Implementation Techniques: Coding practices-Refactoring.

UNIT V PROJECT MANAGEMENT 9

Estimation – FP Based, LOC Based, Make/Buy Decision, COCOMO II - Planning – Project Plan,Planning Process, RFP Risk Management – Identification, Projection, RMMM - **Scheduling and Tracking** –Relationship between people and effort, Task Set & Network, Scheduling, EVA - **Process and Project Metrics.**

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to

Identify the key activities in managing a software project.

Compare different process models.

Concepts of requirements engineering and Analysis Modeling.

Apply systematic procedure for software design and deployment.

Compare and contrast the various testing and maintenance

TEXT BOOKS:

1. Roger S. Pressman, “Software Engineering – A Practitioner‟s Approach”, Seventh Edition,Mc Graw-Hill International Edition, 2010.

REFERENCES:

1. Ian Sommerville, “Software Engineering”, 9th Edition, Pearson Education Asia, 2011.
2. Rajib Mall, “Fundamentals of Software Engineering”, Third Edition, PHI Learning PrivateLimited, 2009.
3. Pankaj Jalote, “Software Engineering, A Precise Approach”, Wiley India, 2010.
4. Kelkar S.A., “Software Engineering”, Prentice Hall of India Pvt Ltd, 2007.
5. Stephen R.Schach, “Software Engineering”, Tata McGraw-Hill Publishing Company Limited,2007.
6. http://nptel.ac.in/.