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 BOOK:

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 Private Limited ,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/.