

SOFTWARE ENGINEERING

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UNIT I Introduction to Software Engineering

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Introduction to Software Engineering - A systems Approach- An Engineering Approach- Members of the Development Team- How Has Software Engineering changed?- Information Systems Example- Real- Time Example

Modeling the process and Life cycle

The meaning of process –Software process Models- Tools and Techniques for Process Modeling- Practical process modeling- Information system Example- Real- Time Example

Unit II

9

Planning and Managing the project

Tracking progress-project personnel-Effort Estimation-Risk Management-The project Plan-Process Models and Project Management-Information System Example- Real Time Example

Capturing the Requirements

The Requirements Process- Requirements Elicitation-Types of Requirements- Characteristic of Requirements- Modeling Notations- Requirements and Specification Languages-Prototyping Requirements-requirements Documentation-Validation and Verification- Measuring Requirements –choosing a specification Technique.

Unit III

9

Designing the System

Introduction to Design- decomposition and Modularity-Architectural styles and Strategies-Issues in Design Creation-Characteristics of Good Design-Techniques of Improving Design-Design Evaluation and Validation-Documenting the Design-Information system Example-Real-Time Example

Considering objects

What is OO-the OO Development process –use cases- Representing OO:An Example using UML-OO System Desing-OO Program Desingn-OO Measurement-Information systems Example-Real-Time Example

Unit IV

9

Writing the programs

Programming standards and procedures-Programming Guidelines-Documentation-The Programming process-Information systems Example-Real-Time Example

Testing the programs

Software faults and failures-Testing Issues-unit Testing Integration Testing-Testing Object-Oriented Systems-Test Planning-Automated Testing Tools-When to stop Testing-Information's Systems Example-Real-Time Example

Testing the Systems

Principles of system testing -function testing-performance Testing-Reliability, Availability and Maintainability-Acceptance Testing-Installation Testing-Automated system Testing-Test Documentation-Testing safety-Critical systems-Information systems Example.

Maintaining the system

The changing system-The nature of maintenance-Maintenance Problems-Measuring Maintenance characteristics-Maintenance Techniques and Tools-Software Rejuvenation-Information Systems Example-Real-Time Example.

Total : 45

Text Book:

1. Software Engineering Theory and Practice, Shari Lwarence Pfleeger, Joanne M.Atlee, Third Edition, Pearson Education, 2006
2. Object-Oriented Software Engineering Using UML, Patterns, and Java,Bernd Bruegge,Allen H.Dutoit, Second Editon, Pearson Edition, 2006
3. Roger S. Pressman, Software Engineering- A Practitioners Approach, McGraw-Hill International Edition, Seventh Edition, 2009