

Lectures for the course: Information Systems Design (IT 60012)

Week 1

Lecture 1 (05/01/2004)

- Introduction to the Course
- Contents and Expectations
- Evaluation Process
 - Class Test 1 – 6%
 - Mid-Sem – 30%
 - Term Paper – 6%
 - Class Project – 8%
 - End-Sem – 50%

Lecture 2 (A+B) (07/01/2004)

- IS Project Groups Formed
- Importance of Proper Team Formation Emphasized
- IS Project Roles Defined
 - SPM, PSM, TL, TM, QM, IA
 - Responsibilities of Different Roles Explained
- IS Project Hierarchy Explained
- Importance of Software Quality Assurance vis-à-vis Software Testing
- Definition of Metrics with example

Lecture 3 (08/01/2004)

- Estimation using Function Point Analysis
- How to Obtain a Rupee Value for Quotation using Estimated Effort
- Contract and what Stage it is Developed Explained
- Sample Format for Contract Presented
- Students are Supposed to Present their Contracts in the Next Lecture

Week 2

Lecture 4 (12/01/2004)

- Contract Document was Reviewed
- Date of next Submission Announced.
- Payment Schedule in the Contract Document
- Sub-systems and Module Decomposition in the Contract Document

Lecture 5 (A+B) (13/01/2004)

- Summary of Lectures
- Information System Project Initiation Note (ISPIN) – Importance and Format
- Skills Required for Different Roles
- Concessions on Skill Requirement
- Negotiation and Re-estimation
- T&M Basis Project and Fixed Cost Project
- Submission of Contract Documents

Lecture 6 (14/01/2004)

- Contract Documents were Presented
- Information System Project Plan (ISPP)
 - Front Page
 - Team Structure
 - Revision History and Track Changes
 - Version Numbers and Release of ISPP
 - Reporting Schedule and Mode of Communication
- Senior Management Review and its Importance
- Re-estimation Explained Once Again

Week 3

Lecture 7 (19/01/2004)

- ISPINs presented
- Latest Status of Class and Project Groups
- Importance of Timesheet

Lecture 8 (A+B) (21/01/2004)

- ISPP Continued – Deliverables
- Training Plan
- Risk Management Plan

Lecture 9 (22/01/2004)

- Hardware, Software and Network Requirement Plan
- Testing Plan
- Shared Software Location
- Backup Strategy

Week 4

Lecture 10 (A+B) (28/01/2004)

- SSAD Methodology
- Information Systems – Organization and Environment
- Feasibility Study
- Systems Requirements Analysis and Design
- Context Diagrams
- Data Flow Diagrams
- Processes, Data Flows and Data Stores
- Process Specifications
- Prototyping Approach

Lecture 11 (29/01/2004)

- Metrics and their Importance in Project Monitoring and Control
- Detailed Quantitative Measurement of Process Parameters
- Capability Baseline
- UCL and LCL
- Causality Analysis
- Defect Prevention and its Importance
- Productivity as a Metric – How to Improve It
 - Reuse
 - Training
 - Reduce Re-work
- Mention of Other Metrics
 - Review Effectiveness
 - Defect Density
 - Project Size Estimate and Growth
 - Cost and Effort Overrun
 - Schedule Slippage
- SRS Format Distributed

Week 5

Lecture 12 (A+B) (04/02/2004)

- Presentation of ISPP by the Project Teams

Lecture 13 (05/02/2004)

- Completion of ISPP Presentation

- Discussion on Process Metrics – Review Effectiveness

Week 6

Lecture 14 (09/02/2004)

- Discussion on Process Metrics – Review Effectiveness (Contd.)
- Defects Per Person Month
- Effort and Cost Overrun
- Schedule Slippage

Lecture 15 (A+B) (11/02/2004)

- Overview of MS Project Tool
 - Tasks
 - Resources – Different Types of Resources
 - Resource Driven and Time Driven Task
 - Predecessor Relationships
- Reference to Task Breakdown Should be Included in ISPP
- Quantitative Process Management Plan
 - Metrics Collection and Analysis Frequency
 - Process Metrics as a New Quality Record
- Review Process and its Relevance to Software configuration Management
 - Dynamic State, Controlled State and Static States
 - SCM Tools like PVCS
 - Promoting Items from one State to the Other
 - Role of SCM – To be Added in the ISPIN and ISPP
- Quality Reviewer – Role and Responsibilities
- Final Inspection Report
- Problem Report
- Software Change Control Board (SCCB)
- Change Management and regression Testing
- Roles of IA and QR

Lecture 16 (12/02/2004)

- Internal Audit Process
- Internal Audit Checklist
- Non-Conformances
- Closure of NCs
- Internal Audit Report

Week 7

Lecture 17 (16/02/2004)

- Internal Audit Report
- Relation between IA and Releases
- External Audit – ISO Surveillance Audit
- Senior Management Reviews and Sharing of Audit Report
- Dates for Submission of Project Related Documents Announced

Lecture on 18/02/2004 not held in view of the mid-sem exams

Mid Sem Exam was Held Here.

Week 8

Lecture 18 (01/03/2004)

- Mid-sem Papers were Shown and Answers to the Mid-sem Exam Questions Explained
- Discussed Data Dictionary
- Software Size Growth Metrics Explained

Lecture 19 (A+B) (03/03/2004)

- E-R Diagram

Lecture 20 (04/03/2004)

- E-R Diagram – Continued
- Multi-valued Attributes
- Weak Entities

Week 9

Lecture 21 (08/03/2004)

- SEI CMM
- Levels and KPAs
- Level 2 KPAs

Lecture 22 (Short Lecture) (10/03/2004)

- Difference between ISO 9000 and SEI CMM

Lecture 23 (11/03/2004)

- Level 2 KPA Completed
- Level 3 KPAs

Week 10

Lecture 24 (15/03/2004)

- Level 3 KPAs Completed
- Level 4 KPAs

Lecture 25 (A+B) (17/03/2004)

- Level 5 KPAs explained

Lecture 26 (18/03/2004)

- OOSD
- Objects and Instances
- Abstraction
- Encapsulation
- Inheritance
- Explanation of Encapsulation using a Java Program

Week 11

Lecture 27 (22/03/2004)

- Inheritance Discussion Completed
- Polymorphism

Lecture 28 (A+B) (24/03/2004)

- Class Test was held here

Lecture 29 (25/03/2004)

- Polymorphism Completed
- Introduction to UML

Week 12

Lecture 30 (29/03/2004)

- Use Case Diagram

Lecture 31 (A+B) (30/03/2004)

- Class Diagram
- Interaction Diagrams

Lecture 32 (01/04/2004)

- Rational Unified Process

Week 13

Lecture 33 (05/04/2004)

- Coding Methodologies
- Coding Guidelines and Standards
- Code Inspection and Walkthrough

Lecture 34 (A+B) (07/04/2004)

- Code Documentation
- Extreme Programming
- Information Asymmetry
- Testing – Unit Testing and Integration Testing

Lecture 35 (08/04/2004)

- Testing Methodologies
- Black Box Testing and White Box Testing
- Statement Coverage, Branch Coverage, Condition Coverage and Path Coverage
- Equivalence Class Partitioning and Boundary Value Analysis
- System Testing – Volume, Stress and Configuration

Week 14

Lecture 36 (12/04/2004)

- Summary and Feedback

Lecture 37 (A+B) (14/04/2004)

- Holiday

Lecture 38 (15/04/2004)

- Project Demo

Week 15

Lecture 39 (19/04/2004)

- Project Demo

Class Dissolves