Brief description

• Course emphasizes the tasks, activities and end results of a software system engineering effort and the various methodologies and techniques that can be utilized in software engineering effort.
• A number of software systems, such as information, Web-based or data warehouse systems, and activities in the SLCP (software life-cycle process), including variations of requirements analysis, systems design and systems implementation.

Assesment

• Midterm 1 : 25%
• Midterm 2 : 25%
• Homework : 20%
• Final : 30%
• Attendance is required
• Attendance will be taken for each week and posted biweekly

Recommended Texts

• Systems Analysis and Design, Alan Dennis, Barbara Haley Wixom, Roberta M Roth, John Wiley & Sons, Inc.
• Systems Analysis and Design, Donald Yeates and Tony Wakefield, Prentice Hall.
• Introduction to Systems Analysis and Design, Jeffrey L. Whitten and Lonnie D. Bentley, McGraw-Hill.
• Systems Analysis and Design Methods, Jeffrey L. Whitten and Lonnie D. Bentley, McGraw-Hill.
• Sistem Analizi ve Tasarımı, Oya Kalipsiz, Ayşe Buharali, Göksel Biricik, Papatya.

Recommended Texts

• Systems Analysis and Design, Gary B. Shelly, Harry J. Rosenblatt, Course Technology.
• Systems Analysis and Design with UML Version 2.0, Alan Dennis, Barbara Haley Wixom, David Tegarden, John Wiley & Sons, Inc.
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**Course Outline**

- The Systems Development Life Cycle
  - Planning, Analysis, Design, Implementation
- Systems Development Methodologies
  - Structured Design, Rapid Application Development (RAD), Agile Development
- Selecting the Appropriate Development Methodology
- Project Team Skills and Roles
  - Business Analyst, Systems Analyst, Infrastructure Analyst, Change Management Analyst, Project Manager

**Course Outline**

- Project Identification
  - System Request, Applying the Concepts at CD Selections
- Feasibility Analysis
  - Technical Feasibility, Economic Feasibility, Organizational Feasibility
- Applying the Concepts at CD Selections
  - Project Selection
- Identifying Project Size
  - Function Point Approach

**Course Outline**

- Creating and Managing the Workplan
  - Identify Tasks, The Project Workplan, Gantt Chart, PERT Chart, Refining Estimates, Scope Management, Timeboxing
- Staffing the Project
  - Staffing Plan, Motivation, Handling Conflict, Coordinating Project Activities, CASE Tools, Standards, Documentation, Managing Risk
- Applying the Concepts at CD Selections
  - Staffing the Project, Coordinating Project Activities

**Course Outline**

- Requirements Determination
  - Requirements Definition, Determining Requirements, Creating the Requirements Definition
- Requirements Analysis Techniques
- Requirements-Gathering Techniques
  - Requirements-Gathering in Practice, Interviews, Joint Application Development (JAD), Questionnaires, Document Analysis, Observation

**Course Outline**

- Applying the Concepts at CD Selections
  - Requirements Analysis Techniques, Requirements-Gathering Techniques, Requirements Definition, System Proposal
- Use Cases
  - Elements of a Use Case, Building Use Cases, Identifying the Major Use Cases, Identifying the Major Steps for Each Use Case, Identifying the Elements within Steps, Confirming the Use Case, Revising the Requirements Definition

**Course Outline**

- Data Flow Diagrams
- Creating Data Flow Diagrams
  - Creating the Context Diagram, Creating Data Flow Diagram Fragments, Creating the Level 0 Flow Diagram, Creating Level 1 Data Flow Diagrams (and Below), Validating the Data Flow Diagrams
Course Outline

• Applying the Concepts at CD Selections
  – Creating the Context Diagram, Creating Data Flow Diagram Fragments, Creating the Level 0 Data Flow Diagram, Creating Level 1 Data Flow Diagrams (and Below), Validating the Data Flow Diagrams

• The Entity Relationship Diagram
  – Reading an Entity Relationship Diagram, Elements of an Entity Relationship Diagram, The Data Dictionary and Metadata

Course Outline

• Creating an Entity Relationship Diagram
  – Building Entity Relationship Diagrams, Advanced Syntax, Applying the Concepts at CD Selections

• Validating and ERD
  – Design Guidelines, Normalization, Balancing Entity Relationship Diagrams with Data Flow Diagrams

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