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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.

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Assesment

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

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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 Buharalı, Göksel Biricik, Papatya.

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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.
- **Systems Analysis and Design in a Changing World**, John W. Satzinger, Robert B. Jackson, Stephen D. Burd, Course Technology.
- **Modern Systems Analysis and Design**, Jeffrey A. Hoffer Joey F. George Joseph S. Valacich, Prentice Hall.
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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

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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

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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

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Course Outline

- Requirements Determination
  - Requirements Definition, Determining Requirements, Creating the Requirements Definition
- Requirements Analysis Techniques
  - Business Process Automation, Business Process Improvement, Business Process Reengineering, Comparing Analysis Techniques
- Requirements-Gathering Techniques
  - Requirements-Gathering in Practice, Interviews, Joint Application Development (JAD), Questionnaires, Document Analysis, Observation

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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

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Course Outline

- Data Flow Diagrams
  - Reading Data Flow Diagrams, Elements of Data Flow Diagrams, Using Data Flow Diagrams to Define Business Processes, Process Descriptions
- 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

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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

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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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