MIS
(Management Information System)
(21-972)

Department of Industrial Engineering
Sharif University of Technology

Session #8

Course Description

- Instructor
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- Class time
  - Saturday-Monday 10:30~12:00

- Course evaluation
  - Mid-term (20%)
  - Final exam (20%)
  - Quiz (10%)
  - Exercise-Projects (30%)
Course Description (Continued ...)

- **Mid-term session:**
  - Saturday, 7\(^{th}\), Azar 1394

- **Final session:**
  - Monday, 28\(^{th}\), Dey 1394

- **Reference:**

Course Description (Continued ...)

- **Reference:**
  - William S. Davis, David C. Yen, “The information system consultant’s handbook: system analysis and design”, 2010, Taylor and Francis
  - Gabriele Piccoli; “Information systems for managers: texts & cases”, 2007, John Wiley & Sons Inc
Course Description (Continued..)

- **Contents:**
  - Introduction to Systems Analysis and Design
  - Analyzing the Business Case
  - Managing Systems Projects
  - Requirements Modeling
  - Data and Process Modeling
  - Object Modeling
  - Development Strategies
  - User Interface Design
  - Data Design
  - System Architecture
  - Managing Systems Implementation

Course Description (Continued..)

- **Contents:**
  - Requirements Modeling
    - Joint Application Development
    - Rapid Application Development
    - Agile Methods
    - Modeling Tools and Techniques
    - System Requirements Checklist
    - Fact-Finding
    - Interviews
    - Documentation
Requirements Modeling

- System Analysis
  - The overall objective of the systems analysis phase is to
    - Understand the proposed project,
    - Ensure that it will support business requirements, and
    - Build a solid foundation for system development.
  
  - In this phase, models and other documentation tools are used to visualize and describe the proposed system.

Requirements Modeling

- Contents:
Requirements Modeling

* System Analysis
  
  * Requirements modeling involves fact-finding to describe the current system and identification of the requirements for the new system, such as
    * Outputs,
    * Inputs,
    * Processes,
    * Performance, and
      * Performance refers to system characteristics such as speed, volume, capacity, availability, and reliability.
    * Security.

  * System Analysis Skills
    * System Analysis will need strong analytical and interpersonal skills to build an accurate model of the new system.
      * Analytical skills enable you to identify a problem, evaluate the key elements, and develop a useful solution.
    * Interpersonal skills are especially valuable to a systems analyst who must work with people at all organizational levels, balance conflicting needs of users, and communicate effectively.
    * Because information systems affect people throughout the company, system analysis should consider team-oriented strategies.
Requirements Modeling

- System Analysis
  - Systems Analysis Skills
    - The traditional model for systems development was an IT department that used structured analysis and consulted users only when their input or approval was needed.

  - Team-based approaches have been around for some time.
    - A popular example is joint application development (JAD), which is a user-oriented technique for fact-finding and requirements modeling.
    - Rapid application development (RAD) resembles a condensed version of the entire SDLC, with users involved every step of the way.
    - While JAD typically focuses only on fact-finding and requirements determination, RAD provides a fast-track approach to a full spectrum of system development tasks, including planning, design, construction, and implementation.
    - Agile methods represent a recent trend that stresses intense interaction between system developers and users.

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Requirements Mod

- System Analysis
- JAD

| Project leader | • Introduce all JAD team members
• Discuss ground rules, goals, and objectives for the JAD sessions
• Explain methods of documentation and use of CASE tools, if any |
| Top management (sometimes called the project owner or sponsor) | • Explain the reason for the project and express top management authorization and support |
| Project leader | • Provide overview of the current system and proposed project scope and constraints
• Present outline of specific topics and issues to be investigated |
| Open discussion session, moderated by project leader | • Review the main business processes, tasks, user roles, input, and output
• Identify specific areas of agreement or disagreement
• Break team into smaller groups to study specific issues and assign group leaders |
| JAD team members working in smaller group sessions, supported by IT staff | • Discuss and document all system requirements
• Develop models and prototypes |
| Group leaders | • Report on results and assigned tasks and topics
• Present issues that should be addressed by the overall JAD team |
| Open discussion session, moderated by project leader | • Review reports from small group sessions
• Reach consensus on main issues
• Document all topics |
| Project leader | • Present overall recap of JAD session
• Prepare report that will be sent to IAD team members |

Information system development

- Information system development Methodologies
- Rapid Application development

  - Rapid application development (RAD) is a software development methodology that uses minimal planning in favor of rapid prototyping.

  * The lack of extensive pre-planning generally allows software to be written much faster, and makes it easier to change requirements.
Information system development

- Information system development Methodologies
  - Agile software development
    - Agile software development is a group of software development methods based on iterative and incremental development, where requirements and solutions evolve through collaboration between self-organizing, cross-functional teams.
    - It promotes adaptive planning, evolutionary development and delivery, a time-boxed iterative approach.

- Information system development Methodologies
  - Agile Unified Process (AUP)
  - Crystal Clear
  - Crystal Methods
  - Dynamic Systems Development Method (DSDM)
  - Extreme Programming (XP)
  - Feature Driven Development (FDD)
  - Lean software development