MIS
(Management Information System)
(21-972)

Department of Industrial Engineering
Sharif University of Technology

Session #4

Course Description

- Instructor
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  - Email: fvalilai@sharif.edu, Tel: 021-6616-5706
  - Website: http://sharif.edu/~fvalilai
- 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, 7th, Azar 1394
- **Final session:**
  - Monday, 28th, 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:
  - Introduction to Systems Analysis and Design
    - What Is Information Technology?
    - Information System Components
    - Business in the 21st Century
    - Modeling Business Operations
    - Business Information Systems
    - Systems Development Tools
    - Systems Development Methods
    - The Information Technology Department
    - The system analyst
System Analysis & Design

- Contents:
  - Systems Development Methods
    - Structured Analysis:
      - Structured analysis is a traditional systems development technique that is time-tested and easy to understand.

      - Structured analysis uses a series of phases, called the systems development life cycle (SDLC), to plan, analyze, design, implement, and support an information system

      - Structured analysis uses a set of process models to describe a system graphically.

      - Because it focuses on processes that transform data into useful information, structured analysis is called a process-centered technique.

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System Analysis & Design

- Contents:
  - Systems Development Methods
    - Structured Analysis:
**System Analysis & Design**

* Contents:
  * Systems Development Methods
    * Structured Analysis:

  * Object Oriented (O-O):
    * Whereas structured analysis treats processes and data as separate components, object oriented analysis combines data and the processes that act on the data into things called objects.

    * Systems analysts use O-O to model real-world business processes and operations.

    * The result is a set of software objects that represent actual people, things, transactions, and events.

    * Using an O-O programming language, a programmer then writes the code that creates the objects.
System Analysis & Design

Contents:
- Systems Development Methods
  - Structured Analysis:
System Analysis & Design

- Contents:
  - Systems Development Methods
    - Agile Methods:
      - Agile methods typically use a spiral model, which represents a series of iterations, or revisions, based on user feedback.

      - As the process continues, the final product gradually evolves. An agile approach requires intense interactivity between developers and individual users, and does not begin with an overall objective.

      - Potential disadvantages of agile methods can include weak documentation, blurred lines of accountability, and too little emphasis on the larger business picture.

      - Also, unless properly implemented, a long series of iterations might actually add to project cost and development time.
System Analysis & Design

Contents:

The System Analyst

A systems analyst investigates, analyzes, designs, develops, installs, evaluates, and maintains a company's information systems.

To perform those tasks, a systems analyst constantly interacts with users and managers within and outside the company.

A systems analyst helps develop IT systems that support business requirements.

To succeed, analysts often must act as translators. For example, when they describe business processes to programmers, they must speak a language that programmers will understand clearly.

Analysts are often the company's best line of defense against an IT disaster

A system that is technically sound, but fails because it does not meet the needs of users and managers. When this occurs, poor communication is usually to blame.

For an analyst, the most valuable skill is the ability to listen.

An effective analyst will involve users in every step of the development process, and listen carefully to what they have to say.

As the process continues, the analyst will seek feedback and comments from the users. This input can provide a valuable early warning system for projects that might otherwise go off the track.
System Analysis & Design

Contents:

- The System Analyst
  - State-of-the-art knowledge is extremely important in a rapidly changing business and technical environment.
  - The Internet offers numerous opportunities to update technical knowledge and skills.
  - Many IT professionals go online to learn about technical developments, exchange experiences, and get answers to questions. For example, ZDNet

- Communication skills
  - A systems analyst needs strong oral and written communication skills, and the ability to interact with people at all levels, from operational staff to senior executives.
  - Often, the analyst must work with people outside the company, such as software and hardware vendors, customers, and government officials.
  - Analysts often coordinate IT project teams, where they use communication skills to guide and motivate team members.
System Analysis & Design

- Contents:
  - The System Analyst
  - Business skills
    - A systems analyst works closely with managers, supervisors, and operational employees.
    - To be effective, he or she must understand business operations and processes, communicate clearly, and translate business needs into requirements that can be understood by programmers and systems developers.
    - A successful analyst is business-oriented, curious, comfortable with financial tools, and able to see the big picture
  - Critical thinking skills
    - Although no standard definition exists, most educators agree that critical thinking skills include the ability to compare, classify, evaluate, recognize patterns, analyze cause-and-effect, and apply logic.