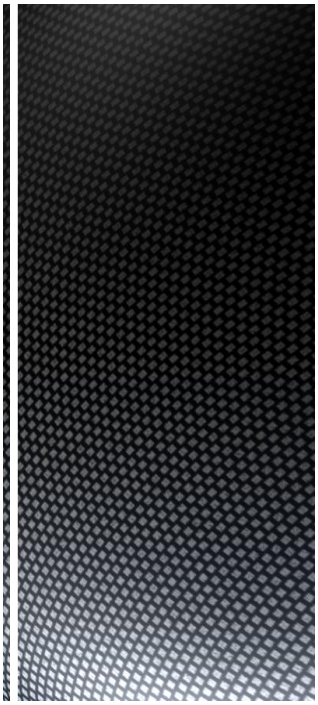
MIS
(Management Information System)
(21-972)

Department of Industrial Engineering
Sharif University of Technology

Session #8

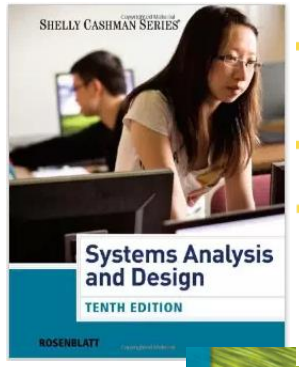


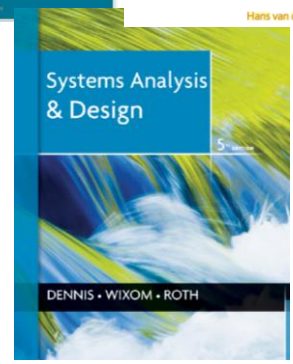
Course Description

- *Instructor*
  - *Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology*
  - *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 ...)*

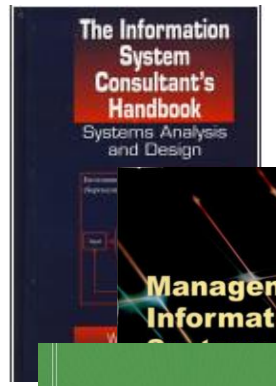
- *Mid-term session:*
  - *Saturday, 7th, Azar 1394*
- *Final session:*
  - *Monday, 28th, Dey 1394*
- *Reference:*
  - *Rosenbalt, "System Analysis and Design", 10th edition, 2013, Course Technology*
  - *Dennis, Lan; "Systems Analysis and Design", 2012, Wiley; 5th edition*
  - *Johannes Govardus Maria van der Heijde; "Designing Management Information Systems", 2009, OXFORD university press*

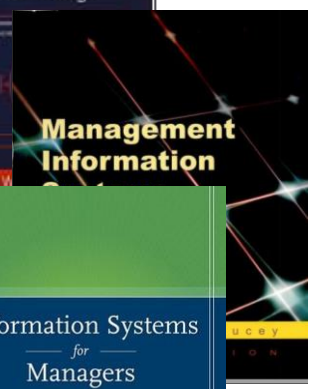


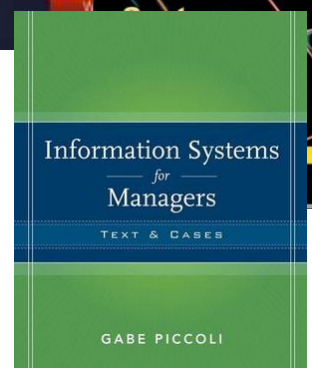


Course Description *(Continued ...)*

- *Reference:*
  - *William S. Davis, David C. Yen, "The information system consultant's handbook: system analysis and design", 2010, Taylor and Francis*
  - *Terence Lucey; "Management Information Systems", 2004, Cengage Learning EMEA*
  - *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.*

Requirements Modeling

- *System Analysis*
  - *Systems 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 UAD), 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.*

Requirements Modeling

- *System Analysis*
  - *JAD*

JAD PARTICIPANT	ROLE
JAD project leader	Develops an agenda, acts as a facilitator, and leads the JAD session
Top management	Provides enterprise-level authorization and support for the project
Managers	Provide department-level support for the project and understanding of how the project must support business functions and requirements
Users	Provide operational-level input on current operations, desired changes, input and output requirements, user interface issues, and how the project will support day-to-day tasks
Systems analysts and other IT staff members	Provide technical assistance and resources for JAD team members on issues such as security, backup, hardware, software, and network capability
Recorder	Documents results of JAD sessions and works with systems analysts to build system models and develop CASE tool documentation

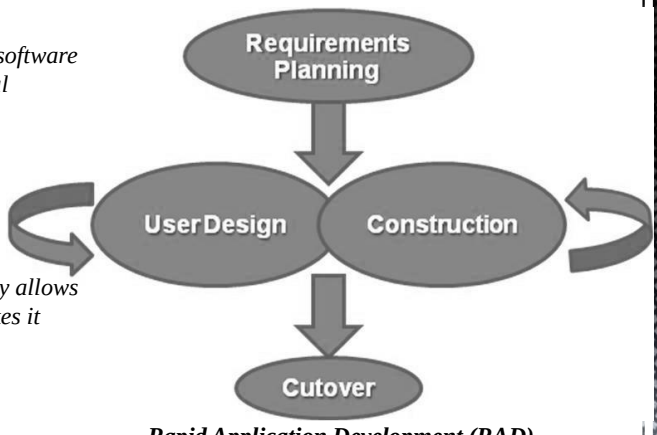
Requirements Mod

- *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 JAD 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.*



Rapid Application Development (RAD)

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

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