

MIS

(Management Information System)

(21-972)

Department of Industrial Engineering
Sharif University of Technology

Session #11



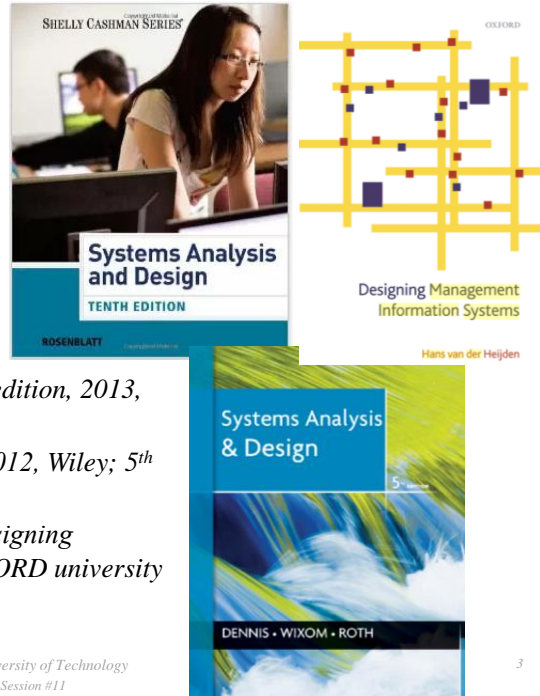
Course Description

- *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

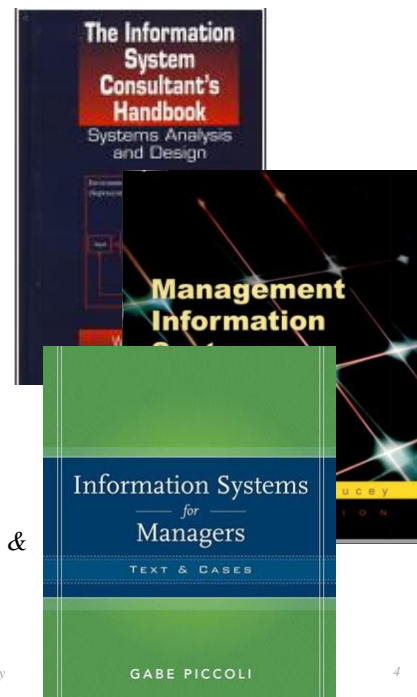


Department of Industrial Engineering, Sharif University of Technology
MIS (Management Information System), Session #11

3

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



Department of Industrial Engineering, Sharif University of Technology
MIS (Management Information System), Session #11

4

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*

*Department of Industrial Engineering, Sharif University of Technology
MIS (Management Information System), Session #11*

6

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*

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MIS (Management Information System), Session #11*

7

Requirements Modeling

- *Fact-Finding*
 - *During requirements modeling you will use various fact-finding techniques, including*
 - *Interviews*
 - *Document review,*
 - *Observation,*
 - *Surveys and questionnaires,*
 - *Sampling, and*
 - *Research.*

Requirements Modeling

- *Fact-Finding*
 - *Who, What, Where, When, How, and Why?*
 - *Who? Who performs each of the procedures within the system? Why? Are the correct people performing the activity? Could other people perform the tasks more effectively?*
 - *What?/Why? What is being done? What procedures are being followed? Why is that process necessary? Often, procedures are followed for many years and no one knows why. You should question why a procedure is being followed at all.*
 - *Where? Where are operations being performed? Why? Where could they be performed? Could they be performed more efficiently elsewhere?*
 - *When? When is a procedure performed? Why is it being performed at this time? Is this the best time?*
 - *How? How is a procedure performed? Why is it performed in that manner? Could it be performed better, more efficiently, or less expensively in some other manner?*

Requirements Modeling

- *Fact-Finding*
 - *Who, What, Where, When, How, and Why?*

CURRENT SYSTEM		PROPOSED SYSTEM
Who does it?	Why does this person do it?	Who should do it?
What is done?	Why is it done?	What should be done?
Where is it done?	Why is it done there?	Where should it be done?
When is it done?	Why is it done then?	When should it be done?
How is it done?	Why is it done this way?	How should it be done?

Department of Industrial Engineering, Sharif University of Technology
 MIS (Management Information System), Session #11

10

Requirements

- *Fact-Finding*
 - *Zachman framework*

THE ZACHMAN ENTERPRISE FRAMEWORK²™

	What	How	Where	Who	When	Why	
Scope Contexts	Inventory Identification Inventory Types	Process Identification Process Types	Network Identification Network Types	Organization Identification Organization Types	Timing Identification Timing Types	Motivation Identification Motivation Types	Strategists as Theorists
Business Concepts	Inventory Definition Business Entity Business Relationship	Process Definition Business Transform Business Input	Network Definition Business Location Business Connection	Organization Definition Business Role Business Work	Timing Definition Business Cycle Business Moment	Motivation Definition Business End Business Means	Executive Leaders as Owners
System Logic	Inventory Representation System Entity System Relationship	Process Representation System Transform System Input	Network Representation System Location System Connection	Organization Representation System Role System Work	Timing Representation System Cycle System Moment	Motivation Representation System End System Means	Architects as Designers
Technology Physics	Inventory Specification Technology Entity Technology Relationship	Process Specification Technology Transform Technology Input	Network Specification Technology Location Technology Connection	Organization Specification Technology Role Technology Work	Timing Specification Technology Cycle Technology Moment	Motivation Specification Technology End Technology Means	Engineers as Builders
Component Assemblies	Inventory Configuration Component Entity Component Relationship	Process Configuration Component Transform Component Input	Network Configuration Component Location Component Connection	Organization Configuration Component Role Component Work	Timing Configuration Component Cycle Component Moment	Motivation Configuration Component End Component Means	Technicians as Implementers
Operations Classes	Inventory Instantiation Operations Entity Operations Relationship	Process Instantiation Operations Transform Operations Input	Network Instantiation Operations Location Operations Connection	Organization Instantiation Operations Role Operations Work	Timing Instantiation Operations Cycle Operations Moment	Motivation Instantiation Operations End Operations Means	Workers as Participants
Released April 2008	Inventory Sets	Process Transformations	Network Nodes	Organization Groups	Timing Periods	Motivation Reasons	Normative Projection on Version 2.01

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Requirements Modeling

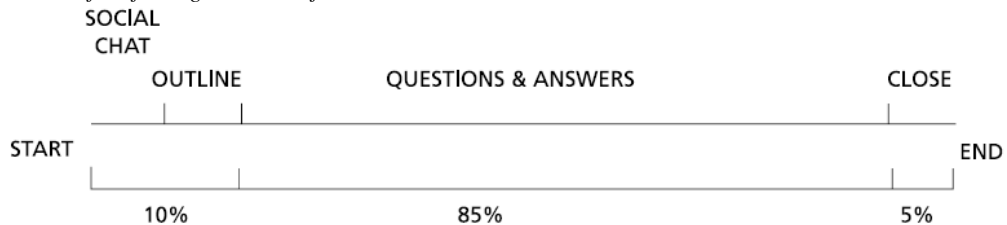
- **Fact-Finding**
 - **Interviews**
 - *Interviewing is an important fact-finding tool during the systems analysis phase.*
 - *An interview is a planned meeting during which you obtain information from another person.*
 - *You must have the skills needed to plan, conduct, document, and evaluate interviews successfully.*
 - *Interviewing process consists of seven steps:*
 - *Determine the people to interview.*
 - *Establish objectives for the interview.*
 - *Develop interview questions.*
 - *Prepare for the interview.*
 - *Conduct the interview.*
 - *Document the interview.*
 - *Evaluate the interview.*

Requirements Modeling

- *Fact-Finding*
 - *Interviews*
 - *Develop interview questions.*
 - *Creating a standard list of interview questions helps to keep you on track and avoid unnecessary tangents.*
 - *If you interview several people who perform the same job, a standard question list allows you to compare their answers.*
 - *The interview should consist of several different kinds of questions: open-ended, closed-ended, or questions with a range of responses. When you phrase your questions, you should avoid leading questions that suggest or favor a particular reply.*

Requirements Modeling

- *System Analysis*
 - *Asking Questions and Collecting Data (Fact-finding Interviews)- Planning*
 - *Most fact-finding interviews follow a similar structure*



Requirements Modeling

▪ System Analysis

▪ Asking Questions and Collecting Data (Fact-finding Interviews) - Planning

- Most fact-finding interviews follow a similar structure

▪ Social chat

An interview begins with a casual, friendly opening to create a relaxed atmosphere and put interviewees at their ease.

▪ Overview

Having created a relaxed atmosphere in the first stage of the interview, you now move on to outline what will happen next.

Requirements Modeling

▪ System Analysis

▪ Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview

▪ Listening

To be effective listeners, analysts need to work on developing their skills in this area as well as on adopting an open, receptive attitude when engaged in listening.

'Active' listening has been defined as a set of techniques through which one person can obtain information from another.

It involves the listener communicating their interest and their understanding to the speaker, encouraging them to continue, and giving them the opportunity to talk without constant interruption

Requirements Modeling

- System Analysis
 - Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview

- Questioning

Asking the appropriate question to obtain the information required is a technique which is central to fact-finding interviewing.

Different types of question elicit different types of response and are, therefore, used for different purposes.

Requirements Modeling

- System Analysis
 - Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview

- Control

- Signposting

- Confirming

- Summarizing

- Note-taking

- Listening

- Pausing

Requirements Modeling

- *Fact-Finding*
 - *During requirements modeling you will use various fact-finding techniques, including*
 - *Document review,*
 - *Document review can help you understand how the current system is supposed to work.*
 - *Forms can change or be discontinued, and documented procedures often are modified or eliminated.*
 - *You should obtain copies of actual forms and operating documents currently in use.*
 - *You also should review blank copies of forms, as well as samples of actual completed forms.*
 - *You usually can obtain document samples during interviews with the people who perform that procedure. If the system uses a software package, you should review the documentation for that software*

Requirements Modeling

- *Fact-Finding*
 - *During requirements modeling you will use various fact-finding techniques, including*
 - *Observation,*
 - *The observation of current operating procedures is another fact-finding technique.*
 - *Seeing the system in action gives you additional perspective and a better understanding of system procedures.*
 - *Personal observation also allows you to verify statements made in interviews and determine whether procedures really operate as they are described.*
 - *Through observation, you might discover that neither the system documentation nor the interview statements are accurate.*

Requirements Modeling

- *Fact-Finding*
 - *During requirements modeling you will use various fact-finding techniques, including*
 - *Observation,*
 - *Personal observation also can provide important advantages as the development process continues.*
 - *Observation also can provide the knowledge needed to test or install future changes and can help build relationships with the users who will work with the new system.*

Requirements Modeling

- *Fact-Finding*
 - *During requirements modeling you will use various fact-finding techniques, including*
 - *Surveys and questionnaires,*
 - *Questionnaires can be used to obtain information about a wide range of topics, including workloads, reports received, volumes of transactions handled, job duties, difficulties, and opinions of how the job could be performed better or more efficiently.*
 - *A questionnaire can be a traditional paper form, or you can create a fill-in form and collect data on the Internet or a company intranet.*

Requirements Modeling

- *Fact-Finding*
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 - *Interviews*
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 - *Surveys and questionnaires,*
 - *Sampling, and*
 - *Research.*

Requirements Modeling

- *Fact-Finding*
 - *Documentation*
 - *Keeping accurate records of interviews, facts, ideas, and observations is essential to successful systems development.*
 - *The ability to manage information is the mark of a successful systems analyst and an important skill for all IT professionals.*
 - *The basic rule is to write it down. You should document your work according to the following principles:*
 - *Record information as soon as you obtain it.*
 - *Use the simplest recording method possible.*
 - *Record your findings in such a way that they can be understood by someone else.*
 - *Organize your documentation so related material is located easily.*

Requirements Modeling

- *Fact-Finding*
 - *Documentation*
 - *CASE tools*
 - *Productivity software includes word processing, spreadsheet, database management, presentation graphics, and collaboration software programs.*
 - *Using word processing software such as Microsoft Word, you can create reports, summaries, tables, and forms.*
 - *Spreadsheet software, such as Microsoft Excel, can help you track and manage numeric data or financial information.*
 - *Microsoft Visio is a popular graphic modeling tool that can produce a wide range of charts and diagrams.*
 - *Visio includes a library of templates, .stencils, and shapes.*
 - *An analyst can use Visio to create many types of visual models, including business processes, flowcharts, network diagrams, organization chart.s, and many more.*