

MIS

(Management Information System)

(21-974)

Department of Industrial Engineering
Sharif University of Technology

Session # 1



Course Description

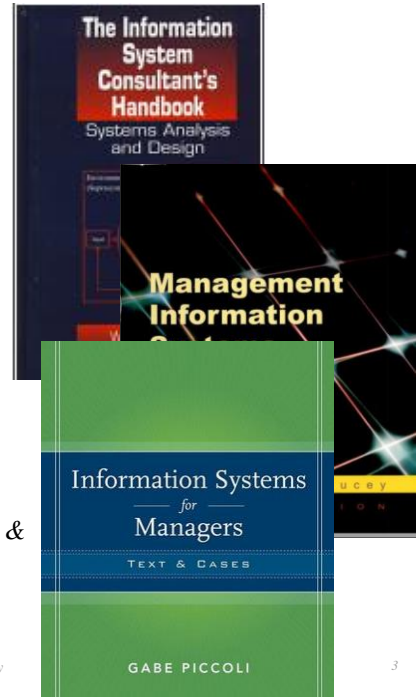
- *Instructor*
 - *Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology*
 - *Email: Omidf@ie.sharif.edu, Tel: 021-6616-5706*
- *Class time*
 - *Sunday-Tuesday 16:30~18:00*
- *Course evaluation*

▪ <i>Mid-term</i>	<i>(30%)</i>
▪ <i>Final exam</i>	<i>(40%)</i>
▪ <i>Quiz</i>	<i>(10%)</i>
▪ <i>Exercise</i>	<i>(20%)</i>

Course Description (Continued ...)

- **Mid-term session:**
 - 5th, Azar 1392

- **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



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Course Description (Continued...)

Course Calendar:

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Course Description (Continued..)

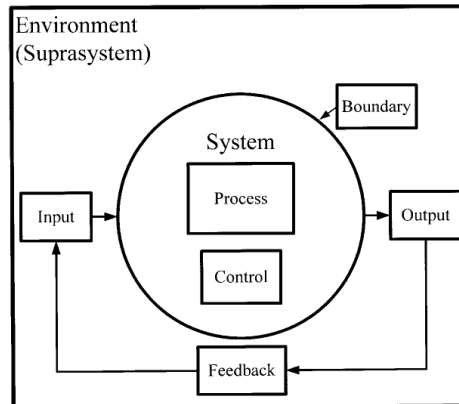
- *Contents:*
 - *Foundation of Information Systems (IS)* (3 session)
 - *IS analysis and design* (4 session)
 - *System analysis and design* (14 sessions)
 - *Data Flow Diagram, ERD, Normalization, OO methods,*
 - *Prototyping, RAD, requirement Specification*
 - *IS implementation and deployments from strategic planning perspective* (7 sessions)

Foundation of Information Systems (IS)

- *Data & Information:*
 - *Data is a raw fact and can take the form of a number or statement such as date or a measurement .*
 - *Information is the data which have been processed so that they are meaningful.*
 - *Information needs the process(es) which collect(s) data and subject them to transformation process.*

Foundation of Information Systems (IS)

- *Information system (IS):*
 - *is a set of hardware, software, data, human, and procedural components intended to provide the right data and information to the right person at the right time.*



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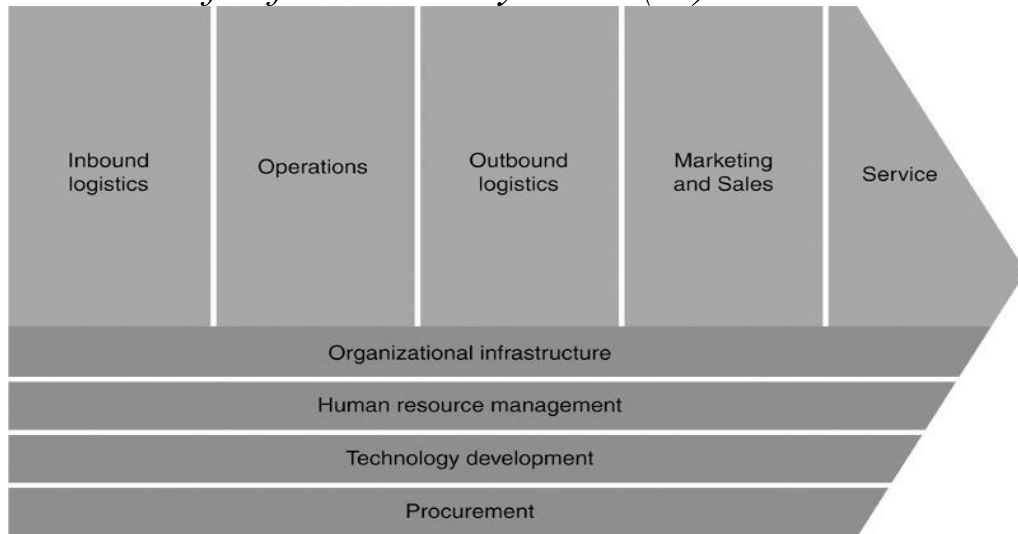
Foundation of Information Systems (IS)

- *Information system (IS):*
 - *Of the most important role of the Information systems is to provide information for management*
 - *This management enables decision making process which ensure that the organization is controlled*
 - *The organization will be in control if it is meeting the needs of the environment*

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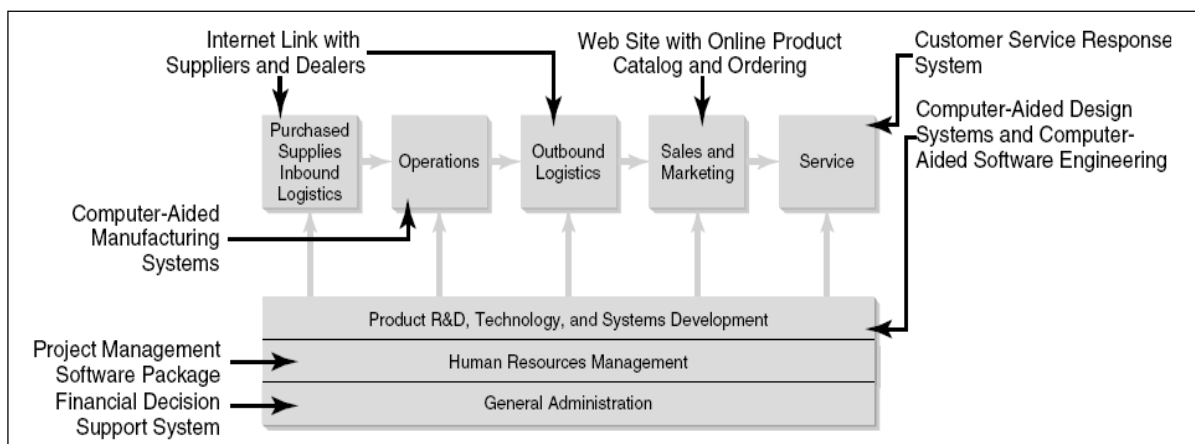
Foundation of Information Systems (IS)



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Foundation of Information Systems (IS)

- *Information systems may be divided into two categories of systems:*
 - *The Ones that support an organization's day-to-day business activities*
 - *Systems that support managerial decision making.*

Foundation of Information Systems (IS)

- *Types of Information Systems (IS):*
 - *Transaction Processing System (TPS) or Operations Information Systems (OIS)*
 - *Management Information Systems (MIS)*
 - *Decision Support System (DSS)*
 - *Group Decision Support System (GDSS)*
 - *Executive Support Systems (ESS) or Executive Information System (EIS)*

Foundation of Information Systems (IS)

- *Transaction Processing System (TPS) or Operations Information Systems (OIS)*
 - *TPSs support the routine, day-to-day activities that occur in the normal course of business.*
 - *TPSs often perform activities related to customer contacts – like order processing and invoicing.*
 - *The primary objective of any TPS is to capture, process, and store transactions and to produce a variety of documents related to routine business activities.*
 - *One objective of any TPS is error-free data input and processing.*

Foundation of Information Systems (IS)

- *Management Information Systems (MIS)*
 - *Management information systems (MIS) can often give firms a competitive advantage by providing the right information to the right people in the right format and at the correct time.*
 - *The primary purpose of an MIS is to help an organization achieve its goals by providing managers with insight into the regular operations of the organization so that they can*
 - *Control,*
 - *Organize, and*
 - *Plan**more effectively and efficiently.*
 - *MIS provides managers with information, typically in reports, that support effective decision making and provides feedback on daily operations*

Foundation of Information Systems (IS)

- *Management Information Systems (MIS) perform the following functions:*
 - *Provide reports with fixed and standard formats (hard-copy and soft-copy reports)*
 - *Use internal data stored in the computer system. MIS reports use primarily internal sources of data that are contained in computerized databases.*
 - *Allow end users to develop their own custom reports*

Foundation of Information Systems (IS)

- *Management Information Systems (MIS) are used in processes like:*
 - *Financial Management Information Systems*
 - *Manufacturing Management Information Systems*
 - *Marketing Management Information Systems*
 - *Human resource Management Information Systems*

Foundation of Information Systems (IS)

- *Decision Support System (DSS):*
 - *Decision support systems offer the potential to generate higher profits, lower costs, and better products and services.*
 - *today's managers at all levels are faced with less structured, non routine problems, but the quantity and magnitude of these decisions increase as a manager rises higher in an organization.*
 - *A DSS gives the decision maker a great deal of flexibility in computer support for decision making.*
 - *What-if analysis*
 - *Goal-seeking analysis*
 - *Simulation*

Foundation of Information Systems (IS)

- *Decision Support System (DSS):*
 - *Group Decision Support Systems (GDSS)*
 - *A group decision support system (GDSS), also called group support system and computerized collaborative work system, consists of most of the elements in a DSS, plus GDSS software needed to provide effective support in group decision-making settings.*
 - *Many GDSSs allow anonymous input, where the person giving the input is not known to other group members.*
 - *One key characteristic of any GDSS is the ability to suppress or eliminate group behavior that is counterproductive or harmful to effective decision making.*
 - *GDSS software, often called groupware or workgroup software helps with joint work group scheduling, communication, and management.*

Foundation of Information Systems (IS)

- *Decision Support System (DSS):*
 - *Executive Support System (ESS) or Executive Information System (EIS)*
 - *ESS is a specialized DSS that includes all hardware, software, data, procedures, and people used to assist senior-level executives within the organization.*
 - *ESSs give top executives a means of tracking critical success factors.*
 - *ESSs are typically tailored to individual executives; DSSs are not tailored to particular users.*
 - *An ESS allows executives to drill down into the company to determine how certain data was produced.*
 - *ESSs also support strategic planning. Strategic planning involves determining long-term objectives by analyzing the strengths and weaknesses of the organization, predicting future trends, and projecting the development of new product lines.*

Foundation of Information Systems (IS)

- *Hardware:*
 - *Hardware describes the physical components of a computer system which can be categorized as input devices, a central processing unit, internal and external memory and output devices.*
 - *Input devices are used to capture or enter data into the computer.*
 - *The central processing unit (CPU) performs processing by carrying out instructions given in the form of computer programs.*
 - *Internal memory is used as a temporary means of storage data and instructions while external memory provides a means of storing data and programs outside of the computer. Output devices translate the results of processing into a human-readable form.*

Foundation of Information Systems (IS)

- *Software:*
 - *Software can be defined as a series of detailed instructions that control the operation of a computer system and exists as programs which are developed by computer programmers.*
 - *Systems software: Systems software manages and controls the operation of the computer system as it performs tasks on behalf of the user. Systems software consists of three basic categories:*
 - *Operating systems,*
 - *Software development programs and*
 - *Utility programs.*
 - *Application software: Application software can be defined as a set of programs that enable users to perform specific information-processing activities. Application software can be divided into two broad categories:*
 - *General-purpose and*
 - *Application-specific.*

Foundation of Information Systems (IS)

- *Database Systems:*
 - *A database is a collection of related files.*
 - *Databases can exist on paper, for example a telephone directory.*
 - *A computer-based database offers the advantage of powerful search facilities which can be used to locate and retrieve information.*
 - *An electronic database provides facilities for users to add, amend or delete records as required.*
 - *Indexing features mean that the same basic information can be stored under a number of different categories. This provides great flexibility and allows users to locate, retrieve and organize information as needed.*

Foundation of Information Systems (IS)

- *Database Systems:*
 - *The data in an electronic database is organized by fields and records.*
 - *A field is a single item of information, such as a name or a quantity.*
 - *A record is a collection of related fields and a table is a collection of related records.*
- *Database Software*
 - *The majority of database programs support the creation of relational databases containing several linked tables.*
 - *When using database software data is retrieved from a database using what is called a query.*

Foundation of Information Systems (IS)

- *Database Software*
 - *The majority of database programs make use of a special structured query language (SQL) in order to create queries.*
 - *Structured query language (SQL) provides a standardized method for retrieving information from databases.*
 - *SQL programs are created by producing a series of statements containing special key words.*

Foundation of Information Systems (IS)

- *Networks:*
 - *A network is a combination of devices connected to each other through communication links to provide the channels for information to flow continuously between people.*
 - *Networks are important to an organization because they help a business connect with its customers, suppliers and collaborators*
- *Network components:*
 - *Servers*
 - *End-user computers or terminals*
 - *Telecommunications processors*
 - *Middleware*

Foundation of Information Systems (IS)

- *E-business:*
 - *E-business involves several key activities including improving business processes, enhancing communications and providing the means to carry out business transactions securely.*
 - *E-business is part of a broader Internet economy which encompasses all of the activities involved in using the Internet for commerce.*
- *The Internet economy is made up of the following layers:*
 - *Internet Infrastructure*
 - *Internet Applications Infrastructure*
 - *Internet Intermediaries*
 - *Internet Commerce*

Foundation of Information Systems (IS)

- *E-Commerce:*
 - *E-Commerce can be described as using technology to conduct business transactions, such as buying and selling goods and services.*
 - *E-Commerce encompasses a wide range of associated activities, such as after-sales support and even logistics.*
 - *E-commerce activities can be broken down into five basic types:*
 - *B2B*
 - *B2C*
 - *B2G*
 - *C2C*
 - *M-Commerce*