I. Introduction

Types of Software
Information Systems
Information Systems Technologies
and Methodologies

Software Everywhere!

- Generations of Software
  - Software for the techies (…-1990)
  - Software for the professionals (1990 - 2005)
  - Software for the masses… (2005 - …)
- Types of Software
  - System software (OS, network software,…)
  - Middleware (compilers, DBMSs,…)
  - Application software (embedded software, information systems,…)

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**Information Systems**

- Used heavily in large organizations
- Give feedback on on-going projects (e.g., production)
- Used for decision support (DSS)
- Used for on-line analytical processing (OLAP)
- Used for data mining
- Used for customer service (web-based systems)

**Information System Technologies**

- Database Management Systems (DBMS)
- Data Warehouses
- Data Mining
- Web technologies (Java, HTML/XML, RDF/S, Web services, ...)

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Information System Methodologies

- Where do we start? --> Feasibility study (or, early requirements analysis)
- Define the problem --> Requirements analysis
- Design a solution --> Design

This course is about methodologies for building information systems!

Why is this Course Important?

- Most errors (54%) are detected after coding and testing.
- Almost half of all errors (45%) are introduced during requirements and design.
- Most errors made during requirements analysis are non-clerical (77%).
- Requirements errors can cost up to 100 times more to fix than implementation errors -- if they are not caught early on.

Need to do requirements and design right!
Background of a Systems Analyst

Technological Perspective

Social Perspective

Professional Perspective

Technological Perspective

Technologies for System Analysis

Personal computers (PCs),
Workstations, Mainframes;
Hardware components:
CPUs, memory, disk
Networks
Peripherals,
Monitors
Palmtops,

Word processing,
Spreadsheets,
Presentation software
Websites
Document management

COTS,
DBMSs,
Compilers,
OS Platforms
Connectivity

Communication

e-mail, fax
Wireless communication
telephones,
networks, internet
telephone switches

Hardware

Software

Communications
Readings

1. Lecture units 1.1 - 1.4 (available at the course website.)