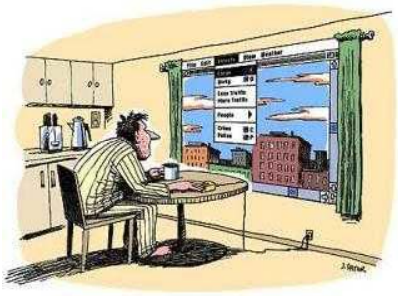
Department of Computer & Information Sciences
Pakistan Institute of Engineering and Applied Sciences

Introduction

Information Systems Analysis and Design (CIS-306)

Dept. of Computer and Information Sciences
Pakistan Institute of Engineering and Applied Sciences



http://www.getfunnypictures.com/cri397.html

What is Systems Analysis and Design (SAD)?

- Systems Analysis:
  - Understanding and specifying in detail what an information system should do
- System Design:
  - Specifying in detail how the parts of an information system should be implemented

What is Systems Analysis and Design (SAD)?

- Why is it important?
  - Success of information systems depends on good SAD
  - Widely used in industry - proven techniques
  - Part of career growth in IT
  - Increasing demand for systems analysis skills

Contact Information

- Instructor
  - Umar Faiz
- Office
  - B-106
- Office hours
  - Mondays, Thursdays 5:45-6:45 pm
- Phone
  - ext. 3148
- Email
  - umarfaiz at pieas dot edu dot pk

Learning outcomes of the course

- On the completion of this course, the student should be able to:
  - Understand the concepts of information systems
  - Use System Development Life Cycle (SDLC) in real-world cases
  - Analyze the current information system in the organization
  - Design and implement proper information systems in the organization
  - Use Data Flow Diagram, Data Dictionary and other analysis and design tools in proper manner

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Learning outcomes of the course

- On the completion of this course, the student should be able to develop the following practical skills
  - To apply some of the analysis and design techniques in a systems development situation
  - To communicate requirements for business functionality of an information system in terms of data required, data storage and processing
  - To participate effectively in an information systems development project conducted within the context of the classroom situation

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Course Description

- The aim of this course is to provide students with an opportunity to learn the basic knowledge (knowing) and skills (doing) to specify and to develop computer information systems. The course will focus on the front-end of the system development life cycle (SDLC), by examining in some details the techniques, methods, tools, procedures, and methodologies employed by systems analysts in the analysis, design and implementation of organizational information systems.

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Course Objectives

- See Course Profile for details

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Recommended Books

- Course Text:
  - Hoffer, J.A., George, J.R. and Valacich, J.S. 2005, Modern Systems Analysis & Design, 4th Ed., Prentice Hall; Upper Saddle river, NJ.
- Recommended Books:
  - Kendall, K.E. & Kendall, J.E. 2002, Systems Analysis and Design, 5th Ed., Prentice Hall: Upper Saddle River, NJ.
  - Whitten, J.L., Bentley, L.D., & Dittman, K.C. 2004, Systems Analysis and Design Methods, 6th Ed., McGraw-Hill Irwin: New York, NY.
  - Harris, D. 2003, Systems Analysis and Design for the Small Enterprise, 3rd Ed., Thomson Course Technology: Boston, MA.

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Recommended Books

- Recommended Books:
  - Satzinger, J.W., Jackson, R.B., & Burd, S.D. 2002, Systems Analysis and Design in a Changing World, 2nd Ed., Course Technology: Cambridge, MA.
  - Shelly, G.B., Cashman, T.J., & Rosenblatt, H.J. 2001, Systems Analysis and Design, 4th Ed., Course Technology: Cambridge, MA.
  - Valacich, J.S., George, H.F., & Hoffer, J.A. 2004, Essentials of Systems Analysis and Design, 2nd Ed., Person Prentice Hall: Upper Saddle River, NJ.

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Resource Material

- Drawing or diagramming software tools may be found at:
  - (a) SmartDraw site: http://www.smartdraw.com (Free software download available)
  - (b) Microsoft Visio site: http://www.microsoft.com/office/visio/, (This software is available in Lab SSS 203. Alternatively, you may purchase a copy under the UW academic license agreement with Microsoft)

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Course URL

- Course URL
  - http://www.pieas.edu.pk/umarfaiz/academics

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Contact Information

- **Content in the proposal:**
  - Your proposal must contain following topics:
  - Introduction of project
  - General Information
  - Overview of problems in current system
  - Objectives
  - Project scope
  - Current system analysis
  - New system development plan
  - Schedule for system development
  - Input/ Output interface design
  - File / Database Design

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Term Project

- You will be required to complete a systems design project where you will work collaboratively in a team of 3 people. The team will hand in just ONE project report.
- The team will also be expected to make a brief presentation about the project outcome.

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Term Project

- All team members will receive the same mark for that project, but there will be opportunity for team members to submit a confidential report to the instructor if they feel that another member(s) is not putting in the appropriate amount of effort.
  - (See Course Profile for details)

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Mode of Instruction

- **Teaching Method(s):**
  - Lecturing
- **Teaching Media:**
  - Slides, handouts
  - There will be 48 sessions of 60 minutes each
-
  - ***80% attendance is mandatory***

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Grading

- Quizzes/Assignment 10%
- Semester Project 15%
- Sessional I/Sessional II 25%
- Final Exam 50%
- (Grades will be given as per PIEAS' Policy (see prospectus for further details)
-
  - (See Course Profile for details)

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Rules and Regulations

- Attendance
- Class Behaviour
- Academic Honesty
- Plagiarism
  - (See Course Profile for details)

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Topics covered

- PART I
  - Foundations for Systems Development
    - The Systems Development Environment
    - Succeeding as a Systems Analyst
    - Managing the Information Systems Project
    - Automated Tools for Systems Development
- PART II
  - Making the Business Case
    - Identifying and Selecting Systems Development Projects
    - Initiating and Planning Systems Development Projects

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Topics covered

- PART III
  - Analysis
    - Determining System Requirements
    - Structuring System Requirements: Process Modeling
    - Structuring System Requirements: Logic Modeling
    - Structuring System Requirements: Conceptual Data Modeling
    - Selecting the Best Alternative Design Strategy
- PART IV
  - Blending Analysis and Design
    - Object-Oriented Analysis and Design
    - Rapid Application Development

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Topics covered

- PART V
  - Logical and Physical Design
    - Designing Forms and Reports
    - Designing Interfaces and Dialogues
    - Designing Databases: Logical Data Modeling
    - Designing Physical Files and Databases
    - Designing the Internals: Program and Process Design
    - Designing Distributed Systems
- PART VI
  - Implementation and Maintenance
    - System Implementation
    - Maintaining Information Systems

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Weekly Lecture Plan

- (See Course Profile for details)

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