



BUAD 279 SYSTEMS ANALYSIS AND DESIGN

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| Professor: | Terence Ow | | |
| Time: | 5:30 – 9:00 PM Tue/Thu | Location: | 365 Stratz Hall |
| Office: | 212 Stratz Hall | Office Hrs: | Tue/Thu: 3:00 – 4:30 or by appt. |
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COURSE DESCRIPTION

Organizations in today's dynamic environment are continually striving to improve their operational efficiency, many of which are dependent on technological improvements. Furthermore, new business models using technology are also being proposed routinely. Successful systems and enterprise project requires managers to understand systems development process and successful delivery of complex systems from a business process perspective. Students will learn to analyze, model and design business system and process requirements using common tools and methodologies. Students will apply concepts from class to a real-life systems development project of their choice.

Students are introduced to the principles and techniques of systems analysis and design methods with particular emphasis on information systems. The conceptual architecture of an information system, information systems framework and conceptual building blocks are introduced. The systems modeling, design and implementation, two major elements of information systems analysis, are discussed in the context of life-cycle phases. The concept and techniques of information systems models, such as data model and process model are discussed in depth. An appreciation of multi-disciplinary approach needed for systems analysis and management will be gained through an understanding of information systems project management techniques, tools, and skills required for a successful completion of an information systems analysis and design project.

RECOMMENDED TEXT AND SOFTWARE

Modern Systems Analysis and Design Methods, (3rd edition or higher) by Hoffer, George and Valacich. *Smartdraw* available at www.smartdraw.com

PROJECTS

Students will form teams and each team will work on a systems analysis and design project. This project is an integral part of the course, since it allows students to apply the concepts, methodologies, and tools in the context of a real-world application.

PROJECT SELECTION

Each team will select a real-world application during the first week of the course. The application/system may come from the team's collective work experience. The following are important guidelines for selecting a system.

- The system must offer good potential for systems analysis work. Indicators for such potential are: problems/deficiencies with the current information systems in the organization; unfulfilled information needs; and new information requirements (e.g. as a result of a new product/service in response to competition and a changing environment).

- The key people must be accessible. Each team must identify key users in the target organization. These users will be the source for most of the information that the team needs in order to successfully perform systems analysis. Therefore, it is important to consider a user's commitment and involvement with the project. Accessibility to information and the user are important considerations.
- The size and scope of the application/system must be manageable so that the project work would be completed by the end of the semester.

PROJECT MILESTONES

Each team will submit a project proposal in Milestone #1. I will review the proposal with each team and, if necessary, the proposal will be revised and modified. I will continue to be the project manager and review each team's progress on the project. As quality assurance, I will review the team's documentation for completeness and accuracy. The project will be divided into milestones. Milestones are due on the dates indicated in the course schedule. There are penalties for late milestones. There are four milestones:

Milestone #1 : Project Proposal

Milestone #2 : Business Analysis and System Study - The Current System

Milestone #3 : Systems Modeling: The Proposed System

Milestone #4 : Systems Implementation and Presentation

GRADING

The final grade will be based on your performance in both individual and group work. I have high hopes for students in my courses and expect everyone to perform well. Your final grade will be based on your performance relative to the performance of all other students in the course. I do not follow a strict breakdown for grading purposes.

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| Midterm Exam : | 40% | |
| Project Milestones (team) : | | 35% |
| Assignment (individual) : | | 15% |
| HW#1 Process Modeling | | |
| HW#2 Database Modeling | | |
| HW#3 Database Modeling | | |
| HW#4 Aroma Coffee 1 | | |
| HW#5 Aroma Coffee 2 | | |
| Team Access Assignment #6 : | 5% | |

PARTICIPATION

Attendance is mandatory. Failing to attend the class will result in a failing grade for the course. You are expected to participate positively and discuss relevant issues during the lecture. This can be done by relating pertinent experiences or citing newspaper and journal articles. By participating in an active way, everyone will benefit. When you participate in this manner and your exam score is above the average for the course, I will consider carefully of giving you the higher grade if you are on the borderline between two grades.

ASSIGNMENTS

You will be required to turn in all assignments when it is due. They allow you to practice some of the problems and issues we discuss in the lectures. All work will be graded individually. I strongly advise you to discuss the assignments among your classmates and learn from each other. However,

you are to turn in solutions of your own. This is a good opportunity to learn the materials that you are unsure of before you take the exam. All assignments are to be turned in at the beginning of class. **Late assignments will not be accepted and there is no exception to this rule.**

PEER EVALUATION

The prospect of working in teams carries with it the possibility that not all team members will pull their fair share of the load. For this reason, there will be anonymous peer evaluations at the end of the semester after the project and other team assignments have been completed. Individual evaluations are the property of the instructor and will not be divulged to other team members - your confidentiality is assured. The average of the peer evaluation scores given to each team member will be used as a weight in determining the member's grade on the project work.

Course Schedule

Lecture 1, Jan 16, 2008

Syllabus

System Development Environment

Team Formation

Lecture 2, Jan 16, 2008

Methodologies for Systems Development

Similarities to Problem Solving

Critical Success Factors Analysis

Wetherbe's PIECES Framework

Examples of PIECES Analysis

Articles

Rockart, J.F. "Chief Executives Define Their Own Data Needs," HBR (March-April 1979), pp. 80-92.

Shank, M.E., Boynton, A.C. and Zmud, R.W. "Critical Success Factor Analysis as a methodology for MIS planning," MIS Quarterly, 1985, (9:2), pp. 121-129

Lecture 3, Jan 23, 2008

Information Systems Architecture – Zachman Framework

<http://www.zifa.com/>

Short Stories

The King's Companion

Joey's Airplane

Lecture 4, Jan 23, 2008

Process Modeling Lecture Notes

Article

Data flow approach to Requirements Determination

Short story

The Chick's New Coat

Lecture 5, Jan 23, 2008

Dataflow diagram Class Exercise
Ford Accounts Purchasing and Payable System
Assignment #1 due Feb 6, 2008

Lecture 6, Jan 30, 2008
Conceptual Database Modeling
Assignment #2 due Feb 13, 2008
Milestone #1 due Feb 1, 2008

Lecture 7, Jan 30, 2008
Unary Relationships
IDEF1X model (MS-Access)
MS-Access Demo
EX 3: Creating Relationships
Assignment 1 Hints
Case
Aroma Coffee (to be discussed on Feb 6)

Lecture 8, Feb 6, 2008
Assignment #1 due
MS-Access Demo:
EX 1: Create Tables
EX 2: Create Single Table Forms
Assignment #3 Feb 20, 2008

Lecture 9, Feb 6, 2008
Database Modeling - Aroma Coffee Conceptual Modeling

Lecture 10, Feb 13, 2008
Assignment #2 due
Database Assignment Discussion

Lecture 11, Feb 13, 2008
User Views – Mountain View Hospital

Lecture 12, Feb 20, 2008
Database Modeling User Views Exercise – Oak Tree
Assignment #3 due
Milestone #2 due, Feb 22, 2008

Lecture 13, Feb 20, 2008
Queries in MS-Access
MS-Access Demo
Ex 4: Create Queries
Ex 5: Create Multi-Table Forms
Ex 6: Create Drop Down List

Lecture 14, Feb 27, 2008

Assignment #4 due

Assignment 5 due Mar 5, 2008

Lecture 15, Feb 27, 2008

Crosstab Queries

Building Query on top of Query

MS-Access Demo

Ex 8: Create Reports

Misc Ex: Create Switchboard Form

Lecture 16, Mar 5, 2008

Assignment #5 due

SQL Queries

Lecture 17, Mar 5, 2008

Exam Review Questions

Lecture 18, 19, Mar 12, 2008

Midterm Exam

Mar 19, 2008 – Spring break

Lecture 20, Mar 26, 2008

Exam Discussion

Lecture 21, Mar 26, 2008

Team Access Discussion

Between Dates Query

MS-Excel

Milestone #3 due Mar 28, 2008

Lecture 22, Apr 2, 2008

Object-Oriented Analysis and Design – static models

Object Representation

Lecture 23, Apr 2, 2008

Object-Oriented Analysis and Design

Use Case Analysis

Lecture 24, Apr 9, 2008

Object-Oriented Analysis and Design – dynamic models

State Diagram

Sequence and Interaction Diagram

Assignment #6 due

Lecture 25, Apr 9, 2008

Object-Oriented Analysis and Design Class Exercise
Assignment #6 due

Lecture 26, Apr 16, 2008

Business Process Reengineering

Hammer, M. "Reengineering Work: Don't Automate, Obliterate," Harvard Business Review, July-August 1990, pp. 104-112.

Davenport, T.H. and Short, J.E. "The New Industrial Engineering: Information Technology and Business Process Redesign," Sloan Management Review, Summer 1990, pp. 11-27.

Lecture 27, Apr 16, 2008

Business Process Reengineering
Dynamic Models and Simulation

Lecture 28, 29, Apr 23, 2008

Agile Development

Lecture 30, 31, Apr 30, 2008

Presentation

Milestone #4 due May 2, 2008