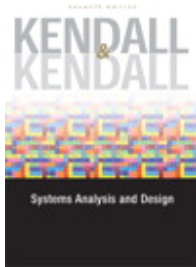


SAINT XAVIER UNIVERSITY
Graham School of Management & School of Arts and Sciences

Course: BUS 433, CMPSC 235 – Systems Analysis and Design
Term: Spring 2008
Instructor: Bill Rogers
E-Mail: rogers@sxu.edu
Phone: (773) 298-3295
Office: Office of Information Services, Warde Academic Center, Chicago Campus, Room L-112
Monday – Friday, 8:30 A.M. – 4:00 P.M.

Textbooks and Required Materials



Required Text:
Systems Analysis and Design, 7th Edition
by Kenneth E. Kendall and Julie E. Kendall

Publisher: Prentice Hall
ISBN-10: 0132240858
ISBN-13: 9780132240857

All students are required to have access to electronic mail in order to facilitate communication with each other and with the instructor. Students will participate in an e-mail discussion list. All registered Saint Xavier University students are assigned e-mail accounts on the university mail system.

Students will also be required to access material posted on the World Wide Web and the Blackboard courseware server. Internet access is available to students in several computer labs at both the Chicago Campus and Orland Park Campus, residence halls, and at a number of wireless access locations.

Course Description

The course material encompasses the concepts, tools, and techniques required to analyze and design business information systems. The course will include structured development approaches and the system development life cycle, as well as rapid application development through alternative approaches such as prototyping and lightweight development methodologies. Emphasis will be given to the role of information systems in organizations and how they relate to organizational objectives and structure. Students will be introduced to system analysis and design modeling tools such as data flow diagrams, entity-relationship diagrams, data dictionaries, decision tables, decision trees, structured English, use cases, and structure charts.

The course methodology will include assigned readings from the textbook, lecture, case studies, written assignments, class discussion, group exercises, and a semester team project.

Your e-mail and phone calls are encouraged for questions, concerns, and comments. Information technology affords us a number of new ways to communicate and collaborate. In past semesters the web and e-mail discussions have proven especially effective in allowing the course to be an ongoing process rather than merely a series of isolated, once-a-week events.

Learning Objectives

- To become familiar with the principles, terminology, and techniques of systems analysis and design of business information systems.
- To develop critical thinking and problem solving skills such as those needed by systems analysts.
- To improve written and verbal communication skills such as those needed by systems analysts.
- To practice group interaction and collaboration skills and participate in the kind of team work environment commonly used for systems analysis and design.

Grading Criteria

Mid-Term Exam	20%	The standard grading scale will be used.
Final Exam	20%	A 93 – 100%
Quizzes	20%	B 85 – 92
Semester Team project	20%	C 76 – 84
Attendance, Participation, and		D 70 – 75
Written assignments	20%	F Below 70%

Quizzes will be announced in advance. No make-up quizzes will be given.

Class Schedule and Attendance

Monday evenings, 6:30 - 9:20 P.M.

Attendance is required. Your participation in class provides you with the opportunity to learn more and to enhance the learning experience of your classmates.

To avoid disruptions to the class, all cell phones, pagers, and other electronic communications devices must be turned off or silenced while class is in session.

It is hoped that what goes on during class would take priority over all but true emergencies, in which there is a threat to human life, health, or safety. It is very distracting to the instructor and to the rest of the class to have people get up and walk out during a lecture or class exercise.

There will be absolutely no taking of phone calls or pages during exams. Leaving the room before completing and turning in a test will not be permitted.

Assignment Formats

All Chapter Review assignments are to be hand-written, not typed or word processed. They must be submitted on paper.

Team project papers, on the other hand, must be typed or word processed, not hand-written. They may be submitted either as a paper document or electronically as a Microsoft Word document in an e-mail attachment.

Tentative Weekly Schedule

Date	Topic/Assignment(s) Due	Textbook Chapters
Jan. 7	Introduction	
Jan. 14	Systems Analysis Fundamentals Chapter 1 Review Questions, p. 23, #10, 13-15, 18. Chapter 2 Review Questions, p. 52, #2, 10-18.	1, 2, 3
Jan. 21	Dr. King Holiday – No class meeting.	
Jan. 28	Requirements Analysis Chapter 3 Review Questions, pp. 99-100, #2, 5-7, 11, 23. Quiz 1	Ch 4: all Ch 10: pp. 339-348
Feb. 4	Rapid Development, Prototyping Team project Milestone 1 Chapter 4 Review Questions, pp. 133-134, #1, 3-7, 15-17, 33.	6
Feb. 11	Data Flow Diagrams Chapter 6 Review Questions, pp. 206-207, #6-11, 16-21.	7
Feb. 18	Data Flow Diagrams Chapter 7 Review Questions, p. 252, #3-8. Quiz 2	
Feb. 25	Process Analysis Team project Milestone 2	8, 9
Mar. 3	Exam 1	
Mar. 10	Spring Break – No class meeting.	
Mar. 17	Software Design Chapter 8 Review Questions, p. 291, #1-4, 7-9. Chapter 9 Review Questions, pp. 329-330, #1, 6, 11-12, 14-17, 19. Lumberman's Bank Exercise (handout)	16
Mar. 24	Input and Output Design	11, 12
Mar. 31	User Interface Design Quiz 3 Team project Milestone 3	14, 15
Apr. 7	Data Storage, Database Design Chapter 11 Review Questions, pp. 418-419, #2, 7, 11-13, 25. Chapter 12 Review Questions, pp. 464-465, #2, 12-13, 15-17.	13
Apr. 14	Testing, Security, Quality Assurance Chapter 14 Review Questions, pp. 576-577, #1-2, 6, 10-25, 27, 29. Chapter 15 Review Questions, p. 620, #1, 9, 11, 14, 16-17, 21.	
Apr. 21	Conversion and Implementation Quiz 4 Chapter 17 Review Questions, pp. 702-703, #1, 20-21, 23-31	17
Apr. 28	Team project Milestone 4 Project Presentations	
May 5	Final Exam	

Team project

The Team project will be presented to the class the week before the final exam. In addition, however, a number of "milestone" dates for the project have been established throughout the semester as listed above and detailed below. The project topic may be based on the suggestions below or may be something of your own design. The student is allowed considerable latitude in selection of a topic, however the project topic must be approved in advance by the instructor.

The project requirements include a presentation to the class (about 30-45 minutes) and the various milestone documents described below.

Your project should include identification of problems or opportunities in a current system, analysis of the current system, and your design for an improved system that will address the problems or opportunities that you have identified. Be specific in describing the system. What kind of system is it? What is it supposed to do? What kind of output does it produce and what kind of input does it receive? Who are the persons or entities that interact with the system?

You may want to select a specific company or organization -- perhaps one you work for or are otherwise already familiar with. Select an aspect of the organization ideally involving a manual information system in need of automation or a computer-based system in need of enhancement. Perform an analysis of the current system and create a design for the new or enhanced system. Conduct the activities and prepare the deliverable products associated with a structured systems study. Remember that organizations may have a wide range of business functions; confine your scope to a more manageable size. It is better to have a deeper, more comprehensive analysis of a narrow scope than a superficial analysis of a wider scope.

The problem to be solved will, of course, depend on the needs of the specific company or organization. Will you design a new application, or is there off-the-shelf software available in the real world suitable to your needs? Do not make assumptions about what off-the-shelf software exists in the real world; such matters should be fully researched. However, if you design a new application you may assume that there would be computer programmers available to implement your solution. It would be your responsibility to create the specifications from which such hypothetical programmers would work. Your design should also include samples of screens and reports used by end users.

A good option is to try to obtain a subject that has a manual process that you can automate. Another possibility is to design an enhancement to some aspect of an existing system, such as input-output, the user interface, security, or disaster planning.

Rather than focus on a specific company, you may wish to focus on a specific issue found to be common in industry. Design a typical system for a particular industry, application, or problem after doing research to investigate how a similar situation would be addressed in real life. Possible research scenarios include, but are not limited to, the following.

- Pharmacy operation: the process of filling prescriptions. Provide system support from the time the patient arrives with the prescription until he or she leaves with the medication. Important elements may include insurance reimbursement and determination of co-payment amount, verification of medication with the doctor, checking for cross medication interaction, partial fills and refills.
- Scheduling: how facilities or personnel are allocated and scheduled. How does a conference center book and schedule meeting rooms? How does a college or university schedule classrooms? How does a doctor's office schedule appointments for patient visits? Important elements may include reservations, conflict checking, recurring events, matching facilities with specific resources to the needs of clients, cancellations and changes.
- Inventory control: how an organization manages its stock. For example, provide system support for the inventory of a lending library including a catalog that patrons can use to locate books by title, author, and subject. In addition, librarians must be able to determine whether specific books

are on the shelf or on loan. Borrower information, due dates, and fines will be important elements. Or, a variation of this topic would be a video rental store which would feature additional requirements in the area of customer billing and perhaps a stock aging capability to move older titles from the rental shelves to make room for new product.

- Contact tracking: the management of communication with customers, clients, vendors, etc. How does a high school or college recruit prospective students? Provide system support for tracking prospects from initial contact through the application process until acceptance and registration. Assume that prospects will need to receive various invitations and promotional mailings. A similar project would be a military recruiting office tracking prospective recruits through the application process up to acceptance and induction into the service.

You may wish to research the effect recent legislation (e.g., Sarbanes-Oxley, Check 21, HIPAA, SEVIS, HAVA) has had on information systems within the affected industries. How have systems had to change in order to come into compliance with new laws? Detail specific changes that have been made and assess the impact on the organization.

What is the legislation? Why is it important? What problems or opportunities does it present and how does it affect systems and organizations? What changes must be implemented by organizations because of it? What are the consequences of making or not making such changes? How will systems be different or changed as a result? Address in specific how such changes will actually be made and what will need to be done to complete the conversion and implementation. Use specific examples from specific industries and organizations.

Your project should be specific, detailed, and comprehensive, not merely a superficial overview. Your project will be evaluated in part on the basis of how well you explain the details of how the process does, or should, work.

Regardless of the topic you select, it is expected that you will interview persons in one or more relevant organizations as part of your research in addition to finding material on the web or in periodicals and other publications. You should regard your project as a real-world investigation, not merely a library or lab exercise.

Research sources must be fully documented. Books, articles from periodicals, online content, and interviews with resource persons within the industry may all be documented with traditional footnote and bibliography format.

Project Milestones

See the weekly schedule above for specific due dates.

1. *Project Topic (1 page)*

Describe the project and what you hope to accomplish. Identify the specific organization or industry that you will study and indicate the type of information system you will focus on (e.g., order entry, inventory, financial, customer service, point of sale, etc.).

2. *Problem Identification, Feasibility Study, and System Proposal (5-7 pages)*

Discuss the problems or unmet opportunities you have identified in the current process or system. Specify how the current methods fail to meet business needs or organization goals of the organization. How is the current system or procedure deficient and where is there room for improvement?

Discuss the technical, operational, and economic feasibility of replacing the current process or system. Create a proposal for a new system that addresses the problems and opportunities previously identified and demonstrate that it is feasible.

Decide whether the new system will be built from scratch or will be purchased from a software vendor or vendors. Evaluate the organization's available resources and explain the criteria you used to make the build vs. buy decision. If you intend to purchase the software, it is not necessary at this time to identify the specific product or vendor of your choice, however you should verify that the type of software solution you wish to purchase does exist in the marketplace, and that its acquisition is feasible for your organization.

Be specific.

3. *Analysis of Current/Old System (5-7 pages)*

Describe the operation of the current system. Also, use at least some of the common tools of systems analysis to demonstrate and document the current system (e.g., entity-relationship diagrams, context diagram, data flow diagrams, decision tables, flowcharts, pseudocode, etc.).

Be specific.

4. *Design of the New System (5-7 pages) and
Presentation of the Project to the Class (30-45 minutes)*

Create specifications for the new or improved system to better meet the needs of the organization. Describe that new or proposed system and show how it is an improvement over the old or current system. If the choice was to purchase a software solution rather than build from scratch, you should also identify the specific product(s) and vendor(s) at this time and discuss the costs associated with the purchase.

Use the tools we have discussed during the course as necessary to document and demonstrate your proposed system solution (e.g., data flow diagrams, structure charts, minispecs, data dictionary, database layouts, and prototypes or mock-ups of the user interface.).

Discuss the conversion from the old system and implementation of the new system.

Be specific.

Saint Xavier University Mission Statement

Saint Xavier University, a Catholic institution inspired by the heritage of the Sisters of Mercy, educates men and women to search for truth, to think critically, to communicate effectively, and to serve wisely and compassionately in support of human dignity and the common good.

Saint Xavier University Core Values

The Saint Xavier University Community commits itself to practicing eight core values as it engages in a search for truth and knowledge, both for personal enhancement and to understand and improve our world.

Respect moves us to understand the gifts and unique contributions of every person in the University community and to value diverse perspectives.

Excellence commits us to challenge ourselves to utilize our God-given gifts: intellectual, social, physical, spiritual, and ethical.

Compassion compels us to stand with and embrace others in their suffering that, together, we may experience God's liberating and healing presence.

Service calls us to use our gifts, talents, and abilities to advance the genuine well being of our community and those we encounter.

Hospitality draws us to do our daily work with a spirit of graciousness that welcomes new ideas and people of all backgrounds and beliefs.

Integrity gives us the ability to realize the greater good in our actions and programs, and challenges us to look at our work and ourselves holistically and as one united with others across the globe.

Diversity builds a community that fosters a climate that is open and welcoming to diverse people, ideas, and perspectives; that promotes a constructive discourse on the nature of diversity; and that engages faculty, staff, and students in activities that promote the University's core values

Learning for Life, in the liberal arts tradition, encourages us to pursue knowledge and truth throughout our lives in ways that improve our communities and ourselves and that strengthen our understanding of each other.