

NEW JERSEY INSTITUTE OF TECHNOLOGY
School of Management
COURSE SYLLABUS- Fall 2004
Systems Analysis and Design for Managers
MIS-663-101

September 1, 2004 to December 8, 2004 6:00PM to 9:00PM

- Instructor: Jerry Fjermestad, Ph.D.
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<http://web.njit.edu/~jerry/JerryWeb/Jerry-web.html>
- Textbook: Systems Analysis and Design, Dennis, A. and Wixom, B., John Wiley & Sons, Inc., 2003, ISBN 0-471-07322-9.
- This course focuses on the analysis and development of systems to meet the increasing need for information within organizations. It presents and analyzes various topics such as systems development life cycle, analysis and design techniques, information systems planning and project identification and selection, requirements collection and structuring, process modeling, data modeling, design of interface and data management, system implementation and operation, system maintenance, and change management implications of systems. It looks at current methods and tools such as rapid application development, prototyping, and visual development the waterfall, concentric, and prototyping approaches to information analysis and development of organizational information systems within a system development life cycle. (3.0 credits)
- Objectives: To provide students with an understanding of the nature of systems analysis and design and their role in the present and future business environments, the methodology used in their development, and the management issues involved in their successful application to business problems.
 - To develop skills to critically analyze business problems
 - To develop analytical skills to solve business problems
 - To develop ability to make effective presentations
 - To develop the ability to effectively and convincingly communicate your position in a rational manner
 - To build capabilities to structure team milestones and deliverables
 - To learn how to manage expectations and deadlines
 - To develop the ability to identify and analyze technology needs in business
 - To understand how to apply technology solutions in the business context
 - To develop familiarity and competence with business software packages
 - To evaluate the benefits and concerns associated with globalization
 - To develop a sense of ethical and professional behavior
- Methods: Lectures, discussions, written assignments and projects.
- Webboard: <http://webboard.njit.edu> Select MIS-663-101

- Evaluation:
 - Complete Team evaluations: After team assignments
 - Required practice task on line: First two weeks
 - Individual**- Article Review (10%): 9/22/04
 - Team Tools Presentation (20%): 10/6/04
 - Team Article Presentation 1 (10%): 10/20/04
 - Team Article Presentation 2 (10%): 11/17/04
 - Team**- Case Study/Project (40%):
 - Team Project: Proposal 10/20/04; Feasibility 11/10/04; Walkthrough: 12/1/04
- All notes can be found at: <http://web.njit.edu/~jerry/sad>

Grading Policy

- A 93 and up
- B+ 87 to 92
- B 80 to 86
- C+ 75 to 79
- C 65 to 74
- F less than 65

Topic Chapter

- Introduction Chapter 1
 - Planning Phase**
 - Markus, M. L., "Power, Politics, and MIS Implementation," Communications of the ACM, (26: 6) 1983, pp. 430-444.
- Project Initiation Chapter 2
 - Analysis Phase**
- Requirements Determination Chapter 4
- Use-Case Analysis Chapter 5
- Usability Engineering
 - Goodwin, N.C., "Functionality and Usability," CACM, (30:3) 1987, pp. 229-233.
 - Nielsen, J., "The Usability Engineering Life Cycle," IEEE Computer, (March) 1992, pp. 12-22.
- Prototyping
 - Carmel, E., Whitaker, R.D., George, J.F., "PD and Joint Application Design: A Transatlantic Comparison," CACM, 36(4), 1993, 40-48.
 - Gould, J.D. & Lewis, C., "Designing for Usability: Key Principles and What Designers Think," CACM, 28, 3. March 1985, 300-311.
- Design Phase**
- Systems Design Chapter 8
- Architecture Design Chapter 9
- User Interface Structure Design Chapter 10
- Implementation Phase**
- Construction Chapter 13
- Installation Chapter 14
- Requirements Determination Research
- Project Presentations

Tools

Project Management Chapter 3
Process Modeling Chapter 6

Data Modeling Chapter 7
UML Chapter 15

Individual Article Review and Presentation (1-10%); Due 9/22/04

A 3 to 5 page review is expected, which includes a summary of the paper highlighting the important points. Also, a 10-15 PowerPoint slide presentation which includes a summary of the paper highlighting the important points.

- Summary of the paper
- Reason the paper was written or Motivation behind the paper
- Value/contribution of the paper.
- Integrate course concepts
- Critique/Analysis- Critical questioning of the article
- Lessons learned

Team Article Presentation (2-20%; 10% each); Due 10/20 and 11/17/04

A 10-15 PowerPoint slide presentation which includes a summary of the paper highlighting the important points.

- Summary of the paper
- Reason the paper was written or Motivation behind the paper
- Value/contribution of the paper.
- Integrate course concepts
- Critique/Analysis- Critical questioning of the article
- Lessons learned

Individual Articles

1. Muller, M.J. & Czerwinski, M. "Organizing Usability Work to fit the full product range," CACM, (42:5), 1999, pp. 87-91.
Mayhew, D.J., "Strategic development of the usability engineering function," Interactions, September, 1999, pp. 27-34.
2. Dawson, L. & Swatman, P. "The use of object-oriented models in requirements engineering: a field study," ICIS, 1999, pp. 260-273.
3. Jankowski, D., "How can CASE help? A look at the feasibility of supporting structured analysis with CASE," The Data Base for Advances in Information Systems, (28: 4), 1997, pp. 33-48.
4. Lending, D. & Chervany, N.L., "Case Tools: Understanding the reasons for non-use," ACM SIGCPR Computer Personnel, 1998, pp. 13-26.
5. Jiang, J.J., Muhanna, W.A., and Klein, G., "User resistance and strategies for promoting acceptance across system types," Information & Management, 37, 2000, pp. 25-36.
6. Truex, D.P., Baskerville, R., and Klein, H., "Growing systems in emergent organizations, CACM, (42:8), 1999, pp. 117- 124.
Donahue, G.M., "Usability and the bottom line," IEEE Software, January, 2001, pp. 31-38.
7. Beynon-Davies, P., Carne, C., and Tudhope, D., « Rapid application development (RAD): an empirical review," European Journal of Information Systems, 8, 1999, pp 211-223.
8. Zhang, P., and Li, N., "An assessment of human-computer interaction research in management information systems: topics and methods," Computers in Human Behavior, 20, (2004), 125-147.

Team Articles on ERP systems

9. Markus, M.L., Petrie, D., and Axline, S., Bucking the trends: what the future may hold for ERP packages, Information System Frontiers, 2, 2 (2000), 181-193.
10. Nah, F.F-H., Lau, J. L-S., and Kunang, J., Critical factors for successful implementation of enterprise systems, Business process Management Journal, 7, 3 (2001), 285-296.
11. Hong, K-K. and Kim, Y-G., The critical success factors for ERP implementation: an organizational fit perspective, Information & Management, 40, (2002), 25-40.
12. Akkermans, H., and Helden, K., Vicious and virtuous cycles in ERP implementation: a case study of interrelations between critical success factors, European Journal of Information Systems, 11, (2002), 35-46.

13. Stefanou, C.J., A framework for the ex-ante evaluation of ERP software, *European Journal of Information Systems*, 10, (2001), 204-215.
14. Irani, Z., Sharif, A.M., and Love, P.E.D., Transforming failure into success through organizational learning: an analysis of a manufacturing information system, *European Journal of Information Systems*, 10, (2001), 55-66.
15. Sarker, S. and Lee, A.S., "Using a case study to test the role of three key social enablers in ERP implementation," *Information & Management*, 40, (2003), 813-829.
16. Bradford, M., and Florin, J., "Examining the role of innovation diffusion factors on the implementation success of enterprise resource planning systems," *International Journal of Accounting Information Systems*, 4 (2003), 205-225.
17. Mandal, P., and Gunasekaran, A., "Issues in implementing ERP: a case study," *European Journal of Operational Research*, 146, (2003), 274-283.
18. Poston, R., and Grabski, S., "Financial impacts of enterprise planning implementations, *International Journal of Accounting Information Systems*, 2 (2001), 271-294.
19. Nicolaou, A.I., "Quality of postimplementation review for enterprise resource planning systems, *International Journal of Accounting Information Systems*, 5 (2004), 25-49.
20. Marble, R.P. "A system implementation study: management commitment to project management," *Information & Management*, 41, (2003), 111-123.
21. Sarkis, J., and Sundarraj, R.P. "Managing large-scale global enterprise resource planning systems: a case study at Texas instruments," *International Journal of Information Management*, 23, (2003), 431-442.
22. Somers, T.M., and Nelson, K.G. "A taxonomy of players and activities across the ERP project life cycle," *Information & Management*, 41, (2004), 257-278.
23. Tchokogue, A., Bareil, C., and Duguay, C.R. "Key lessons from the implementation of an ERP at Pratt & Whitney Canada," *International Journal of Production Economics*, in-press.
24. Umble, E.j., Haft, R.R., and Umble, M.M. "Enterprise resource planning: implementation procedures and critical success factors," *European Journal of Operations Research*, 146, (2003), 241-257.

Tools Presentations (Group or Individual) Due October 6, 2004

A 15 to 20 minute presentation (slides only) on tools used in Systems analysis and design. Examples of tools: Project management, Process modeling, Data modeling, Object oriented modeling, Case tools, Rational Rose, Oracle developer 2000, XML, etc.

Project

Team Case: an Overview

The Team Case is worth 40% of your grade. It will be broken into three deliverables as described below. In the first session teams will be formed. The team will then begin analyzing and developing the Data Warehouse Project. Basic information about the case is given in the handout. The purpose of this case is to explore some key aspects taught in this class and to apply them in a "simulated real" situation. To this end each team will prepare three presentations and associated write-ups.

Project Proposal

(10%, Due: October 20, 2004)

At the beginning of this session, each team is to turn in a project proposal that is approximately 3-5 pages in length. This paper should give a brief relevant background of the target organization and describe the proposed system and explain the expected benefits. It should be general in nature but specific enough to give a reasonable sense of the business problem, the type of system, and the boundaries of the task you are committing to. On the basis of that paper, each team will give a 15-minute presentation describing the system and why it is needed (10 to 12 PowerPoint slides).

Project Feasibility/Risk Assessment

(10%, Due: November 10, 2004)

At the beginning of the session, each team is to turn in a project feasibility/risk assessment that is approximately 5-8 pages in length. This paper should analyze the operational, technical and economical feasibility of the proposed system and the risks involved. On the basis of that paper, each team will give a 20-minute presentation on the project feasibility (15 to 20 PowerPoint slides).

Project Design Review/Walkthrough

(20%, Due: December 1, 2004)

At the beginning of the session, each team is to turn in a formal project design that is approximately 10-15 pages in length. You may use a structured methodology, an object-oriented methodology, or build a working prototype of the system. Show the DfD's, ERD's or UML and use case analyses. In the case of a working prototype, it should be functional in all significant ways and the write up will be a user guide and reference manual. Each team will give a 20-minute presentation describing the system and why it is needed (15 to 20 PowerPoint slides). Significant time should be allocated to questions and answers from the class.

Data Warehouse Project (DWP)

You are employees of an innovative company of 30 people which has been hired to build a data warehouse and business intelligence system for a consumer products company. The company has been profitable, but it is starting to see its market share erode. The company has hired a new CIO who wants bring new analytical approach to the business. The CEO agrees with this basic approach.

The company president has selected your group to spear-head this project. You have been asked by the president to prepare a report exploring existing and new services a data warehouse coupled with a business intelligence system could offer (1) immediately and (2) within the next five years. The contents of this report should include:

1. a description of the functionality of the DWP (i.e., what services would be offered to the customers)
2. the user interface (include at least the top two levels of menu/service the user interface (include at least the top two levels of menu/service choices)
3. advantages and disadvantages of the DPW as compared to the current transaction based information system
4. major implementation considerations or concerns that would feed into the next phase of developing an implementation plan (you are not to develop an implementation plan)

It is an honor being selected to work on the initial stages of this important project. Therefore, your success on this project will ensure your future with the company.