

# **IOM433 Creative Information Systems Analysis and Design**

## **Spring 2006 T/Th 2-3:50**

### **HOH406 (Labs meet in HOH401)**

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Office Hours: T/Th 1-2 (provided not a day with a speaker) or by appointment

## **Course Description & Goal**

Requirements for an Information System (IS) describe in precise terms what the IS will and won't do for an organization and system users. Requirements are needed whether the IS is being developed in-house, purchased, or outsourced. It is never easy to figure out what's the best set of requirements that will be of the most help to the organization and system users. There are many factors to consider in identifying these requirements: competitive business pressures, technology opportunities, business process improvement opportunities, risks in existing systems, and user suggestions. No single information source knows about all of these factors. Moreover, information may change over the time during which the requirements were collected, or since the IS was installed. Finally, the information rarely points to one specific solution; there are always many possible solutions. What is needed is a Systems Analyst who coordinates, facilitates, communicates, translates, searches, does detective work, encourages, engages, and most importantly creatively iterates with stakeholders and information sources to help craft a solution that seems to fit best with all the information gathered. A Systems Analyst is a broker between business managers, system users, and software developers. An Analyst is the spokesperson for the user, the voice of reason for the business manager, the customer liaison for the software developer. Systems Analysts are not a single job title. They may also be called Business Process Analyst, Risk Management Analyst, Change Management Professional, Project Coordinator, or Jr. Project Manager. Learning to be a translator and broker between business and technology will also serve you well as an entrepreneur, or in a financial, marketing, or consulting career as these careers become increasingly dependent on well-designed and executed information systems.

The course will teach you the modeling tools to integrate information on these various requirements drivers into a coherent business case or blue print of a future software application, and a specifications package that frames the use of software in the organization. The course will also help you manage the development and deployment of information systems by identifying and managing risks early through the use of:

- agile and iterative development techniques,
- capability maturity models,
- and Unified Modeling Language (UML).

There are no prerequisites

## Learning Outcomes

Upon successful completion of this course, you will be able to:

- Communicate in precise modeling language business-relevant Information Systems requirements to both business managers and software developers
- Develop business cases for convincing managers of the need for information systems
- Identify who to include in the Requirements Gathering process and how to keep them involved to ensure their initial and continued buy-in
- Avoid scope creep and other classic IS development risks

## Text:

Dennis, A., Wixom, B. & Tegarden, D. Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach, 2<sup>nd</sup> edition. Wiley 2005. ISB-0-471-34806-6

## Assessment

*500 points total*

**Workshops:** 3 workshops, 75 points each. Each workshop consists of applying the material covered thus far to a real-world problem. All workshops are open book but not open notes. To prepare for each workshop, the student should: a) redo the PRU homework assignments to see if possible correct answers can be recreated, b) answer factual questions at the end of each chapter, c) recreate answers for mini-exercises done in class, and d) recreate answers used in the CD Selections case in the text. Total: **225 points**

**Homework** All homework is due at the beginning of class. Since class is challenging you to think creatively while learning certain facts, and since homework is used to prepare you for class and to provide a common in-class discussion point for learning, with a range of possible correct answers, homework is graded on completeness (2 points – i.e., was all aspects of the homework completed?) rather than on accuracy, and having 2 hard copies brought to class (1 point). The second copy is to be kept by the student and marked on throughout the class to improve your learning experience. Because there is a range of possible correct answers to the homework, the answers will not be posted and attendance is required to obtain the learning experience. Most of the homework concerns the Picnics R Us (PRU) case which is posted in Blackboard. **3 X 20 assignments = 60 points**

**Picnics R Us (PRU) Group Assignment:** In 4-person teams, you will meld the individual assignments for Picnics R Us into a final polished project document. This document will complete the analysis phase of a systems development activity. The document will begin with a one-page overview to the project sponsor explaining the current status of the project, key decisions you made, and what remains to be done. A detailed narrative should explain all major design decisions you made in order to fill in gaps from the case, continued unanswered remaining questions both technical and business process related, and any other explanations regarding how to better conceptualize and understand the project you've completed. The narrative should

reference the individual assignments included as appendices. Grading will be focused on each element of the document and also will heavily focus on the integration of elements into one consistent whole project. **180 points**

**Classroom Participation:** Class Participation throughout the semester is defined as attendance + comments, answers to questions, or questions raised during each of the 29 classes that occur after the first class and do not include classes with workshops. The student can either write the questions/answers/comments on the board at the beginning of class or offer them throughout the class to receive credit. As you read, you should write down questions. You should also answer the questions at the end of each chapter. If you are unable to answer an end-of-chapter question, the question can become the question you ask in class. You will receive NO points if you don't attend class or if your questions are not related to material being learned (such as logistics or career). One point possible per class. **35 points**

## Outline

The structure of each class is generally: review reading material to discuss questions asked, review CD Selections Case, Review End-of-Chapter questions, Review homework, provide supplemental information if time permits, and prepare for next class assignment. We will have the opportunity for 3 guest speakers. Participation Grades on days with Guest Speakers are based on the questions asked of the speaker.

Date	Readings	Due	Topic
T: 1/10			Course Overview, introductions, why taking the class
Th: 1/12	Ch 1 (p17-19)		Why are Business Analysts needed? Evidence from what happens with poor business analysis. Roles in systems analysis <b>Guest Speaker: Eleanor Wynn, Product Capabilities, Innovation, and Information Services and Technical Group, Intel</b>
<b>PROJECT INITIATION AND GENERAL BUSINESS REQUIREMENTS</b>			
T: 1/17	Ch 1 (p1-17,p20)	Answers to Ch 1 Qs 12,14,17 (paragr or bullets for each)	System Development Methodologies
Th: 1/19	Text ch 2	Answers to Ch 2, Qs 2, 13, 17	Intro to UML & OO; RUP Demo; preparing for PRU1-3
T: 1/24	Text ch 3 (p57-63)	PRU1: Initial System Request Form	Project Initiation, Identifying Business Need with root cause analysis.
Th: 1/26	Text Ch 3 (p.63-65, 73-76)	PRU2: Initial Organization & Technical Feasibility	Calculating Technical and Organizational Feasibility

T: 1/31	Text Ch 3 (p 65-73, 77-81)	PRU3: Initial Cost Benefit Analysis	Calculating Business Value and go-no go decisions; have 4-person PRU groups picked
Th: 2/2	Text Ch 4	PRU4: Prepare Initial Project Plan	Function Point Estimation and Project Planning
<b>SOFTWARE REQUIREMENTS SPECIFICATIONS</b>			
T: 2/7	Text Ch 5 (p 123-129,147-159)	PRU5: Information Questions List	What are good requirements? What information to collect to create requirements? Functional vs Nonfunctional Requirements
Th: 2/9	Text ch 5 (pp137-159 only)		How to Collect Info Part I: JAD & Contextual Inquiry
T: 2/14	Text ch 5 (pp 129-136) + ARIS Handout	PRU6: Business Process Flow	How to Collect Info Part II: Modeling Business Process Flows; preparing for ARIS lab. Demo of IBM Websphere Business Integration Modeler
Th: 2/16	ARIS Handout		Lab1: HOH401 on ARIS, a business process modeling tool
T: 2/21	Review Ch 1-5		Putting it all together: Guest Speakers: Alvin Lin & Sajeed Kabir, Deloitte Touche “Requirements Gathering for a New Technology Initiative of a Large Healthcare Organization” And Review session
Th: 2/23			Workshop 1 OPTIONAL OUT-OF-CLASS APPOINTMENT with instructor to review first 6 elements of PRU Group Doc
T: 2/28	Text Ch 6 (p171-205)	PRU7: Use Case Diagram	Collecting Info for Reqs Part III: Specifying Different Functional Reqs as Use Cases
Th: 3/2	Text Ch 6 (p 173-177)	PRU8: Re-estimate Person hours with use cases PRU9: Prepare Use Case Description for “CP” Use Case	Use Case Descriptions
T: 3/7	Text Ch 6 (163-171)	PRU10: Prepare Activity Diagram for “CP” Use Case	Returning to Part II: Collecting Info on Reqs by Modeling Activity Flow within each Use Case: Activity Diagramming Use Cases
Th: 3/9	Text ch 7 (p210-	PRU11: Prepare list of	Part IV: Collecting Info by

	213,221-223)	classes for PRC	Identifying System Components: Identifying classes
T: 3/14			SPRING BREAK
Th: 3/16			SPRING BREAK
T: 3/21	Text Ch 7 (p213-215)	PRU12: CRC cards for 3 classes	CRC cards
Th: 3/23	Text ch 7 (pp216-220 only)	PRU13: Draw class diagram for PRU	Class Diagrams
T: 3/28	Text Ch 8 (p236-249)	PRU14: Draw Sequence Diagram for "CP" Use Case	Part V: Collecting Info by Understanding How Components Relate: Sequence Diagrams
Th: 3/30			Review of UML with Realty Case; preparation for Lab and Workshop
T: 4/3			Lab in HOH401: Rational Rose
Th 4/6			Workshop 2 OPTIONAL OUT-OF-CLASS APPOINTMENT with instructor to review first progress on elements of PRU Group Doc
<b>MOVING FROM ANALYSIS TO DESIGN &amp; IMPLEMENTATION</b>			
T 4/11	Text Ch 10	PRU15: List of Functional and Non-functional Requirements	Moving from Analysis to Design: Guest Speaker: Tim Bohn, IBM Rational
Th: 4/13	Text Ch 12 (p381-388; 407-415)	PRU 16: User Interface Design	User Interface Design
T: 4/18	Ch 13		Physical architecture design
Th 4/20	Ch 14	PRU17: Testing plan for "CP" Use Case	Testing
T: 4/25	Ch 15 (p487-495)	PRU18: Conversion Plan for PRU	Conversion options
Th: 4/27 Last class	Ch 15 (p495-511)		Change Management + Review for Workshop
Final Exam		Group Report due	Workshop 3

<b>Administrative Matters</b>	
<b>Item</b>	<b>Description</b>
Attendance & Preparation	Attendance is required to receive participation grades. Students are expected to be well prepared for class and can expect to be called upon during class sessions to answer questions related to the readings, lectures, and class discussions. Inadequate preparation will be marked down. Since students can learn as much from each other as they can from the instructor, sharing of personal experiences and insights during class sessions is desirable. Students are expected to check Blackboard for class postings.
Homework	Homework assignments are due at the beginning of class, turned in to me personally. Assignments turned in any other way (late, by classmates, emailed, faxed) will not be graded. If you must miss a class, turn in the assignment to me BEFORE the class.
Group Work	Grades are given to the team as a whole. At the end of the semester, each team member will complete a short questionnaire regarding the contributions of each of the members to the team's deliverables. These questionnaires will be kept confidential. In the event that more than one team member identifies another student as contributing less than the other students on the team do, the points earned by the low contributor will be reduced by an amount determined by the instructor. Once you have joined a team, there will be NO CHANGES; you will need to work out any issues among the team members. Working out these issues is part of the learning experience and something that employers demand as part of a business education.
Academic Integrity	The use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination or other class work is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tensions accompanying examinations. Where a clear violation has occurred, however, the instructor may disqualify the student's work as unacceptable and assign a failing mark on the paper. Course projects are designed as collaborative efforts in which students are expected to share knowledge for the mutual benefit from of other students. Project deliverables may be reused for development of class materials and other related uses.
Students with Disabilities	Any student requesting academic accommodations based on a disability is required to register with Disabilities Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the course instructor as early in the semester as possible. DSP is located in STU 301 and is open 8:30 AM to 5 PM, Monday through Friday. The phone number for DSP is 213-740-0776.
IOM Department	IOM department staff are not permitted to provide you with grades over the telephone.
Schedule Notes	This schedule is subject to change based on availability of speakers, number of students, and availability of supporting materials.