

CpSc 413, Systems Analysis

Syllabus: Fall, 2007

Catalog Description: A course in computer-based information systems. Course content includes: foundations of information science, techniques for system development, information architectures, and resource allocations. Case studies are discussed and utilized as class projects. Prerequisite: CPSC 323. 3 credits.

Professor's Description: In this course you will learn how to analyze business systems with the goal of automating them with an object-oriented, computerized system. It will be assumed that the automated system will include a database. You will learn how to model business and computerized systems with diagrams from Uniform Modeling Language, UML.

Section	Time	Place
1	MWF 5 (12:00-12:50)	ATS 103

Instructor	Phone	Email	Office
Michael P. Conlon, Ph.D.	724-738-2143	michael.conlon@sru.edu	252 ATS

Office hours: MW 3:30-5:00 p.m., R 10:15 a.m.-12:15 p.m., or by appointment

Text: *Object-Oriented Systems Analysis and Design with UML*; Stumpf and Teague; Pearson Prentice Hall. ISBN 0-13-143406-3

Specialized software: *Umbrello* version 1.4.2 or later. 1.5.71 is the latest version. See uml.sourceforge.net.

Exam dates:

Section	Exam 1	Exam 2	Final
1	Mon, Oct 1	Fri, Nov 9	Wed, Dec 12, 1:00-3:00 p.m.

Grading:

Exams	Homework, quizzes, etc.	Projects
40%	20%	40%

Grading Policy: To pass this course you must take all exams, submit all assignments, and earn a passing grade. Late assignments will be penalized a full letter grade for each day, or fraction thereof, that they are late. No assignment which is more than one week late will be accepted once the last week of classes has begun. No assignment will be accepted after the last class of the semester. Exceptions to this policy will be made in extraordinary circumstances.

Attendance, reading, and participation: You are expected to attend every class and to arrive on time. Do not expect to be admitted to class if you are late. Latenesses will be treated as absences. Please do all assigned reading *before* the class in which it is covered. You are expected to attend and participate in class, and you must do the reading and homework to participate.

Professional Development: You will be expected to participate in several professional development activities in the course of the semester, such as attending lectures, assisting others with computer technology, attending job fairs, etc. If you cannot attend a particular assigned activity because of your other obligations, it is your responsibility to find another appropriate event as a substitute.

Plagiarism policy: Students determined guilty of plagiarism or cheating will receive a failing grade for the course. While I encourage cooperation in study, please ensure that all written assignments are your own work.

Copyright notice: By registering in this course you grant the SRU Computer Science Department permission to copy any of your work from the course for use in assessment or accreditation processes, provided that identifying information is removed from such work.

Exams: Exams will cover both text and lecture material; some text material may not be covered in class. If you must be absent for an examination, please see me one week in advance to make alternate arrangements to take the exam. Please take care of bodily needs before coming to an exam: you will not be permitted to leave the room during an exam until your paper is handed in. All electronic communication and entertainment devices must be turned off and put away during exams. Use of such devices during an exam will be considered cheating. You are permitted to bring a calculator to exams. Calculators with multi-line or graphic displays or with facilities for alphabetic input are not acceptable, and use of them will be considered cheating.

Course Outcomes: This course and its outcomes support the Information Systems Learning Outcomes of *Problem Solving and Critical Thinking (PS&CT)*, *Communication and Interpersonal Skills (C&IS)*, and *Ethical and Professional Responsibilities (E&PR)*. These Information Systems Learning Outcomes are tied directly to the University Wide Outcomes of *Critical Thinking and Problem Solving, Communication, and Values and Ethics*.

Objectives	Strategies	Assessment Methods
<p>The student will be able to:</p> <ol style="list-style-type: none"> 1. Propose solutions to information systems problems by creating models, using techniques such as entity-relationship diagrams, dataflow diagrams, organization charts, network diagrams, data dictionaries, UML, and CASE tools. [PS&CT a, b, c, d] 2. Communicate problem solutions through written documentation and an oral report. [C&IS a, b, c, e] 3. Define terms of the systems analyst's technical vocabulary. [C&IS b] 4. Recognize flaws in organizational structure when they affect information systems. [PS&CT e] 5. Describe in detail the steps in the system life cycle. [C&IS b] 6. Plan for and ensure the security, integrity and privacy of data. [E&PR a] 7. Demonstrate an understanding of the Association for Computing Machinery (ACM) Code of Professional Ethics. [E&PR c] 	<p>Together, the students and the professor will:</p> <ol style="list-style-type: none"> 1. Use case studies to critically analyze information systems and develop appropriate models. 2. Discuss terminology and practice of the professional systems analyst. 3. Identify problems with real and hypothetical organizations and suggest improvements from the systems analyst's perspective. 4. Read and analyze at least one code of ethics of a professional computing society. 	<p>The student will:</p> <ol style="list-style-type: none"> 1. Answer questions about model information systems in homework and/or quizzes. 2. Create documentation for a case study project as a semester team project. 3. Complete exams that assess understanding of the principal concepts and techniques of the systems analyst. 4. Analyze hypothetical ethical situations in light of a professional code of ethics. 5. Orally present the results of a team project to the instructor and class. 6. Course Embedded: PS&CT at professor's discretion, C&IS through writing, oral presentation, and team work and E&PR at professor's discretion.

Calendar (tentative):

Date		Topic	Text Readings
Aug	27	Introduction: assessment and systems analysis	
	29		Ch. 1
	31		Ch. 14, pp. 387-390
Sep	5	The Information Systems Development Process	Ch. 2
	7		
	10	Systems Analysis—Business Event Analysis	Ch. 3
	12		
	14		
	17	Essential Use Cases and System Sequence Diagrams	Ch. 4
	19		
	21		
	24	Domain Models and System Operation Contracts	Ch. 5
	26		
	28		
Oct	1	Exam 1	
	3	Introduction to System Design	Ch. 6
	5		
	10	Information System Design	Ch. 7
	12		
	15		
	17	Program Design—Interaction Diagrams	Ch. 8
	19		
	22		
	24	Program Design—Design Class Diagrams	Ch. 9
	26		
	29		
	31	Designing the Database Interface	Ch. 10
Nov	2		
	5	Designing the User Interface—Design Principles	Ch. 11
	7		

Date	Topic	Text Readings
9	Exam 2	
12		
14	Designing the User Interface—Designing the Presentation Layer	Ch. 12
16		
19	Prototyping	Ch. 14, pp. 399-404
26	Gathering, Managing, and Reporting Information	Ch. 13
28		
30		
Dec	3 Team Project Presentations	
	5 Team Project Presentations	
	7 Team Project Presentations	
10	Last day of class	
12	Final exam, 1-3 p.m.	