

CSE 5232 (Approved): Software Requirements Analysis

Course Description

Information systems analysis; object-oriented analysis models and tools; use cases, system modeling using UML; requirements specification development; term project.

Prior Course Number: CSE 616

Transcript Abbreviation: SW Rqmts Analys

Grading Plan: Letter Grade

Course Deliveries: Classroom

Course Levels: Undergrad, Graduate

Student Ranks: Senior, Masters, Doctoral

Course Offerings: Autumn, Spring

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 14 Week

Credits: 2.0

Repeatable: No

Time Distribution: 3.0 hr Lec

Expected out-of-class hours per week: 3.0

Graded Component: Lecture

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: CSE 3901 or CSE 3902 or CSE 560

Exclusions: Not open to students with credit for CSE 3232 or CSE 616

Cross-Listings:

The course is required for this unit's degrees, majors, and/or minors: No

The course is a GEC: No

The course is an elective (for this or other units) or is a service course for other units: Yes

Subject/CIP Code: 14.0901

Subsidy Level: Doctoral Course

Programs

Abbreviation	Description
MS CSE	MS Computer Science and Engineering
PhD CSE	PhD Computer Science and Engineering

Course Goals

Master applying an object-oriented methodology to the analysis of a real-world problem.
Be competent with writing use cases to model functional requirements.
Be competent with using UML use case, class, sequence and collaboration diagrams to model data and behavior requirements.
Be competent with organizational dynamics as it applies to projects.
Be competent with the system lifecycle approach and its phases.
Be familiar with software engineering issues such as correctness, reliability, productivity.
Be familiar with the distinction between analysis and design activities and skills.

Be familiar with working with a team to produce requirements specification document.
Be familiar with the purpose, structure and contents of a requirements specification document.
Be familiar with non-functional requirements such as security, integrity, response time and reliability.
Be familiar with using a UML tool.

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Software engineering, software development life cycle, traditional vs object-oriented analysis	7.0							
Teamwork and organizational dynamics	2.0							
Data flow diagramming (as context model)	4.0							
UML (use case diagram, sequence diagram, collaboration diagram, state chart diagram, class diagram)	15.0							
Requirements elicitation (face-to-face meetings and presentations to real-world client)	8.0							

Representative Assignments

Term project is designed to encourage students to apply principles of Systems Analysis in a Real World context. The project consists of these elements: 1) Students will meet several times with a selected industry client to elicit requirements for a system. 2) Students will prepare and present formally documented system requirements to the client using UML notation for feedback. 3) Students will deliver a detailed and complete Systems Requirement Specification, using traditional and object-oriented notations.
Homework assignments are designed to give students the opportunity to practice analysis concepts in a more controlled framework.

Grades

Aspect	Percent
Homework (4)	20%
Quizzes (2)	20%
Team project (including weekly progress reports, presentation, drafts and final document -- weighted by peer evaluation)	35%
Final Exam	25%

Representative Textbooks and Other Course Materials

Title	Author
<i>An Introduction to Object-Oriented Analysis</i>	Brown

ABET-EAC Criterion 3 Outcomes

Course Contribution		College Outcome
**	a	An ability to apply knowledge of mathematics, science, and engineering.
	b	An ability to design and conduct experiments, as well as to analyze and interpret data.
**	c	An ability to design a system, component, or process to meet desired needs.
***	d	An ability to function on multi-disciplinary teams.
***	e	An ability to identify, formulate, and solve engineering problems.
***	f	An understanding of professional and ethical responsibility.

Course Contribution		College Outcome
***	g	An ability to communicate effectively.
*	h	The broad education necessary to understand the impact of engineering solutions in a global and societal context.
*	i	A recognition of the need for, and an ability to engage in life-long learning.
*	j	A knowledge of contemporary issues.
***	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

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