

Department of Computer Science, CSUDH
CSC582: Object-Oriented Analysis & Design

Instructor	<i>Jianchao (Jack) Han</i>	E-Mail	jhan@csudh.edu
Classroom	SBS B215	Class Time	Friday 5:30pm-8:15am
Office No.	310 243 2624	Office Hours	Monday 5pm-7pm
Office Room	NSM A133		

Course Description:

This course presents an overview of object-oriented analysis and design concepts, methodologies and techniques. The course will cover object-oriented concepts, methodologies, type systems, business requirement analysis, system modeling, static and dynamic system analysis, system architecture design, subsystems design, reusable design patterns, code specification, and testing design. The course will be based on UML and a case study throughout the semester.

Prerequisites:

CSC 123, **CSC321** are required, and **CSC481** is preferred. Students should be familiar with at least one object-oriented programming language (e.g. Java, C++/C#).

Textbook:

Object-Oriented Analysis and Design: Understanding System Development with UML 2.0, by Mike O'Docherty, John Wiley & Sons, Ltd. 2005, ISBN: 0-470-09240-8

Course Objectives – Student Learning Outcomes:

After successful completion of the course, students will

- Understand the object-oriented concepts, methodologies, and techniques
- Be able to analyze business and system requirement using object-oriented analysis methodology
- Be able to design a reasonably sized software architecture and subsystems using object-oriented design technology
- Be able to specify software implementation using object-oriented code specification
- Understand reusable software design patterns and master some common patterns
- Be able to design software testing
- Master the Unified Modeling Language (UML) as a notation to support above analysis, design, and implementation

Course Work:

Specified Team Project: A semester-long project consists of three parts: requirement specification, system analysis, and system design. Each assignment will be handed out as the class progresses. Each team will have two weeks to work on each part and present your result in the class.

Examination: The examination two parts, one closed book with multiple choice questions, and the other one open book with free response questions.

Selected Research Project: Each student will work on a research project on object-oriented software engineering. The research topic should be determined by consulting with the instructor in the middle of the semester. The requirement will be handed out in the class.

Course Work Grading:

To pass the course, you **MUST** complete all the projects, take the midterm test, and present your research report. The following weights will be applied to calculate your final score

Team project:	30%,	10% each
Research Project:	20%	
Multiple Choice Test:	25%	
Short Answer Test:	25%	

The score will be mapped to your course one-letter grade as follows:

Range	Grade	Range	Grade	Range	Grade
[93, 100]	A	[75, 80)	B-	[55, 60)	D+
[90, 93)	A-	[70, 75)	C+	[50, 55)	D
[85, 90)	B+	[65, 70)	C	[0, 50)	F
[80, 85)	B	[60, 65)	C-		

Tentative Class Schedule (subject to change):

Week	Topic	Ch.	Research Project Schedule
1	Object-oriented Methodologies <ul style="list-style-type: none"> • Basic Concepts • Gathering Requirements • Business Modeling • Requirement Specification 	1-6	
2, 3	<i>Project 1 Team Discussion: Business Modeling and Requirement Specification</i>		
4	Project 1 Presentation		
5	Object-oriented Analysis <ul style="list-style-type: none"> • Analyzing the Problem • Static Analysis • Dynamic Analysis 	7	Topic Determined
6, 7	<i>Project 2 Team Discussion System Analysis</i>		
8	Project 2 Presentation		References
9	Object-oriented Design <ul style="list-style-type: none"> • Design the System Architecture • Choosing Technologies • Design the Subsystems • Database Design • Design Patterns 	8-11	
10, 11	<i>Project 3 Team Discussion System Design</i>		Abstract

12	Project 3 Presentation		
13	<i>Thanksgiving Break (Campus closed)</i>		
14	Multiple Choice Test		Draft
15	Short Answer Test		
16	Research Project		Report

AMERICANS WITH DISABILITIES ACT

CSUDH adheres to all applicable federal, state, and local laws, regulations, and guidelines, with respect to providing reasonable accommodations for students with temporary and permanent disabilities. If you have a disability that may adversely affect your work in this class, I encourage you to register with Disabled Student Services (DSS) and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: no accommodation can be made until you register with the DSS. For information call (310) 243-3660 or to use the Telecommunications Device for the Deaf, call (310) 243-2028 or go to: <http://www4.csudh.edu/dss/>

COMPUTER INFORMATION LITERACY EXPECTATIONS

It is expected that students will:

1. *Use Microsoft Word for word processing unless otherwise approved by the instructor,*
2. *Be familiar with using email as a communication tool and check your official campus email account at least every other day;*
3. *Be able to access websites and online course materials which may require Flash and other plug-ins;*
4. *Use the library databases to find articles, journals, books, databases and other materials;*
5. *Be able to create an effective PowerPoint presentation;*
6. *Be able to record audio (ideally video) to share with the instructor via the web; and*
7. *Have regular access to a computer and internet access for the term of this course.*

ACADEMIC INTEGRITY

Academic integrity is of central importance in this and every other course at CSUDH. You are obliged to consult the appropriate sections of the University Catalog and obey all rules and regulations imposed by the University relevant to its lawful missions, processes, and functions. **All work turned in by a student for a grade must be the students' own work.** Plagiarism and cheating (e.g. stealing or copying the work of others and turning it in as your own) will not be tolerated, and will be dealt with according to University policy. The consequences for being caught plagiarizing or cheating range from a minimum of a zero grade for the work you plagiarized or cheated on, to being dropped from the course.

BEHAVIORAL STANDARDS

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. The instructor may require a student responsible for disruptive behavior to leave class pending discussion

and resolution of the problem and may also report a disruptive student to the Student Affairs Office (WH A-410, 310-243-3784) for disciplinary action.

RESOURCES FOR STUDENTS IN NEED

Students occasionally have financial difficulties. There are a number of resources on campus that may be available to you if you find yourself in need of food, shelter, or other help. Food pantries are located in LSU 121 and SCC 148. You can find these and other resources through *Toro Food Pantry* on ToroLink and here:

<http://www4.csudh.edu/student-services/food-shelter-resources/index>