

Syllabus for CIS 3150

Introduction to Object-Oriented Systems Analysis and Design

California State Polytechnic University, Pomona, California

College of Business Administration, Department of Computer Information Systems

Fall 2018

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This syllabus provides the guide for the entire course.

Course Guide

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Class Meetings and Office Hours, Holidays**Term Dates**

Classes run each week from March 27th through June 5th, Tuesday and Thursdays.

Final Exam Time

Tuesday June 5th, 8:10 - 10:10 pm

Class Meeting Times and Locations

8 - 10 pm, Building 98 C 4-027

Course Description

Our course Introduces object-oriented systems analysis and design using unified modeling language (UML). System development life cycle. Determination of information system requirements. use cases, use case diagrams, domain models, interaction diagrams, and design class diagrams. This course also introduces design patterns, as well as project management for software development and fundamentals of software testing.

Introduction to object-oriented systems analysis and design using unified modeling language (UML). System development life cycle. Identification and decision of information system requirements, use cases, use case diagrams, domain models, interaction diagrams, and design class diagrams.

Learning Objectives

Students successfully completing this course should have acquired the ability to:

- Foundational knowledge
 - Understand system development life cycle (SDLC) and several methodologies of SDLC, in particular, the rational unified process (RUP).
 - Be able to perform systems analysis tasks, such as identifying systems requirements, producing requirements definition, generating use case descriptions, use case diagram, and domain model.
 - Be able to perform systems design tasks, such as generating sequence diagrams for use cases, and producing design class diagram.
- Application
 - Be able to apply your knowledge and perform systems analysis and design tasks for a case.
- Human Dimensions
 - Work with teammates of your group coordinately in order to produce group-based deliverables for some project milestones.

Prerequisites

C or better in CIS 305 or [CIS 3050](#); and CIS 304 or [CIS 3090](#)

Textbook and Software

Textbooks

No formal book is selected; there will be many weekly resources to read, available online.

Software:

For UML and diagramming software:

- Microsoft Word, Microsoft Visio 2010 (free and available on CIS dept website -> MSDNAA Download), OR
- Google Drive /draw.io

Exams, Projects and Assignments

315 will collect gradeable items in three formats:

1. weekly presentations, graded by participation
2. a final presentation, delivered during the final exam

Notes on each are as follows:

- **Weekly presentations** expect students to experiment with the systems analysis techniques in our lectures. The syllabus schedule below indicates which techniques are to be delivered, by each due date. Presentations are merely an exercise in feedback. You must have your effort to interpret and apply the technique complete by the feedback time. In general, your group should present your work one week after the concept is taught.
- **A Final Presentation (FP)** will take the place of the final examination. Your presence is required, and is not negotiable. The final score reflects how completely each bullet, below is delivered. An online delivery mechanism will be announced, via Blackboard and email on the date of the exam. The FP's grading rubric will test the following items:
 1. **Viability.** *Did the team present a viable concept, incorporating feedback from the class sessions, during the term? Is the idea realistic, and contain UML and user interfaces to prove it can be produced?*
 2. **Accuracy of Technique.** *Is each diagram-based analysis done correctly, with fidelity to the way in which the diagram is to be produced? Would non-class members see conventional, industry-standard diagrams and understand your team project?*
 3. **Fluency.** *Is the team presentation coherent, smooth, and easily understood? Has the team taken pains to make it easy to grasp their concepts? Do they utilize the class diagrams to explain their ideas? Do analyses help build understanding, slide to slide?*
 4. **Coherence.** *Are presenter notes copiously prepared, and stand in-lieu of a written statement? Will the presentation remain viable once the class is finished, and read by outside reviewers?*

Grade Change Requests

All grade change requests are to follow strict adherence to University guidelines. Do not ask for grade changes without a personal visit to the faculty during office hours. No emailed grade

revision requests are accepted. Reasons for grade change cannot include **your desire for a different grade point**, and will not be accepted for this reason.

Attendance: Attendance is required for each class session, barring hospitalization. Any illness treated with doctor visits are to be substantiated with a letterhead note from your physician. Attendance is scored in your team's weekly presentation and recorded on a time card with your name on it. Absences will be printed on the card, and the card is not to be altered by the student. Please pick up the attendance card at the start of each class, then return the card at the close, proving your attendance or absence.

Make-up policy: There will be no make-up exams except for serious and compelling reasons that are substantiated with formal documents. For example, medical cases have to be substantiated with valid doctor or hospital note stating that the student is too ill to attend the exam.

Late assignments or projects: There is an automatic 75% point deduction for all late work, except in cases where *ADA accommodations are present* or a legitimate medical emergency exists, wherein a signed doctor's letter will lift a deduction.

Tutoring: For free tutoring on campus, contact the Learning Center in the library
<http://www.csupomona.edu/~lrc/>

Grading

The grade scale will follow this chart.

Grade	Percentage
A	93.00-100.00
A-	90.00-92.99
B+	87.00-89.99
B	83.00-86.99
B-	80.00-82.99
C+	77.00-79.99
C	73.00-76.99
C-	70.00-72.99
D+	67.00-69.99
D	63.00-66.99

D-	60.00-62.99
F	0-59.99

The course final grade will be based upon the following gradable items.

Graded Items	%
weekly presentations, 10	20
weekly quizzes, 10	60
final presentation, june 5th exam date	20
Total	100

** Please see due dates for your team presentations in the Lesson Plan, below.

Class Communication

Asking Questions Outside Class Meetings

Academic questions may be posted on github, in the Issues section of our repository. (See link above) These will be available for the public internet, and other classmates to see, but will receive speedy attention from the Instructor, given the following conditions.

- The Issues post asks four questions, maximum. Compose your posts carefully.

Email requirements

1. Compose emails carefully, so to avoid offending your reader. Expect to read through your email several times to ensure its professionalism.
2. Avoid emails with more than several sentences. Ask questions which may be answered in a few words or sentences. Long emails run the risk of not being answered to your satisfaction.
3. Consult the syllabus and assignment before sending email. Remember, electronic communications are inherently limited, and cannot replace in-person office hours.
4. Unprofessional communications will not be responded to, and may be forwarded to University officials before reply. Avoid venting, hostile or other language deemed unwise to use personally.

Blackboard: Grades will be posted on the University Blackboard. Announcements will be posted on Blackboard and forwarded through email.

Official communications: Email is the official communication method of the University **and** CIS 315. Therefore, maintain your school email, as all official messages will flow to it.

Blackboard communications

Messages sent by students via Blackboard do not reach the Instructor via email. Hence, use your university email for contact.

Subject to Change: This syllabus and class schedule are subject to change. If the student is absent from class, it is the student's responsibility to check on announcements made and make up the work while absent. All lecture, assignment and learning materials will be posted to this syllabus, available on Github for each week.

Assignments

Assignments bearing the bulk of course credit are available at the start of the course. Rubrics and other details may change. Assignments are always posted to this syllabus, on the course github.

Course Policies

Classroom environment: The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

Using laptops, cellphones and other electronic devices:

- Using laptops during the class for anything other than this class, personal conversations, talking or texting on cell phones or other distracting behavior are prohibited.
- As a courtesy to all, please turn off all cell phones and pagers during class. If the student needs to be reached for family medical or significant work-related issues, the student must present evidence to the instructor before the class starts.
- Absolutely no cellphones or other electronic devices may be used during an exam or quiz.

Attendance:

- Arrive on time. Do not disturb other students by asking for directions or help on exercises when arrived late.
- If the student needs to leave early, the student must let the instructor know before the class starts, and choose a seat that minimizes disruption to the class when leaving.
- If the student has to miss the class, the student must send an email to let instructor know before class and explain the reason.
- If the student is sick and contagious, the student should not come to the class and risk getting others sick.
- If the student miss an exam due to this reason, a make up may be given. However students shall not abuse the trust - if the student appears to be sick very often then the student may be asked to present evidence such as doctor notes to the instructor.

Student responsibilities:

- Each student is responsible for the successful completion and submission of all assignments and projects. Corrupted files or incomplete submission will not be credited. Students are also responsible for keeping a backup copy of each submission.
- The instructor will not review your assignments or projects before grading for the entire class to ensure fairness. The instructor will, however, help you understand the expectations and clarify the requirements.
- The instructor will not debug assignments or projects for individual student. The instructor will, however, help you gain knowledge and skills in analysis and design, problem solving, coding, testing and debugging, and answer **specific questions** about course topics. Make sure you have spent significant and reasonable amount of time and effort in research and working on your own before asking help.

Turnitin: Students written assignments may be checked through Turnitin.com for plagiarism detection.

University Policies

Students with Disabilities: Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities at <http://dsa.csupomona.edu/drc/>.

Academic Integrity: Students should understand or seek clarification about expectations for academic integrity in this course (including no cheating, plagiarism, or inappropriate collaboration); neither give nor receive unauthorized aid on examinations or other course work that is used by the instructor as the basis of grading; take responsibility to monitor academic dishonesty in any form and to report it to the instructor or other appropriate official for action.

Cheating and Plagiarism: Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work. Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university.

Computing Resources: At Cal Poly Pomona, computers and communications links to remote resources are recognized as being integral to the education and research experience. Every student is required to have his/her own laptop/computer or have other access to a computer with all the recommended software for this course. Find out more about how to access to the university's information resources from [Information Technology Services](#).

Copyright Policy: Copyright laws and fair use policies protect the rights of those who have produced the material. The copy in this course has been provided for private study, scholarship, or research. Other uses may require permission from the copyright holder. The user of this work is responsible for adhering to copyright law of the U.S. (Title 17, U.S. Code). A full description of Cal Poly Pomona's copyright policy is included in the [University's Intellectual Property policy](#). The course web site contains material protected by copyrights held by the instructor, other individuals or institutions. Such material is used for educational purposes in accord with copyright law and/or with permission given by the owners of the original material. Students may download one copy of the materials on any single computer for non-commercial, personal, or educational purposes only, provided that (1) do not modify it, (2) use it only for the duration of this course, and (3) include both this notice and any copyright notice originally included with the material. Beyond this use, no material from the course web site may be copied, reproduced, re-published, uploaded, posted, transmitted, or distributed in any way without the permission of the original copyright holder. The instructor assumes no responsibility for individuals who improperly use copyrighted material placed on the web site.

Tentative Course Schedule

The Instructor will make the effort to deliver lessons along these guidelines. Students should use the Assignments Timetable as reference for homework that is due.

Presentation Format

Please have your team presentation ready on the following dates. Your team will present, in class. Then, feedback will be given and an additional four days allowed to make updates. The actual presentation is to be sent to Stefan, via dropbox. A link will be posted to the course blackboard, via Announcement. The final digital version will be graded in the week following these due dates.

The grading rubric for each presentation is above, under the **Exams** section.

Session Date	Lecture Topic and Demonstrations	Applied skills to research and prepare on this date	Team Presentation Due
Aug 23	Introduction to Systems Analysis and Design, identifying the problem domain for an information system. Job Roles, roles within organizations, historical role Cal Poly grads have played, with this training		

Aug 28, 30	Systems Development Lifecycle: early stage project planning and analysis. Presenting potential group projects; team selection and work planning, Presentations by individuals on potential projects, 2 minutes maximum.	Project Concept, prepared individually	
	Project Selection. Creating a project charter	Ishikawa & Root Cause Analysis	
Sept 4, 6	Requirements Determination, business process and functional requirements Part 1	BMM	1
	Requirements Determination, business process and non-functional requirements Part 2	Data Flow Diagrams, Organizational Charts	
Sept 11, 13	Human-Computer Interaction / HCI Layer Design	Wireframes, UX	2
	Structural Modeling and Behavioral Modeling. UML Use Cases.	Use Case Analysis	
Sept 18, 20	Static Models UML: class diagrams	UML Class Diagrams	3
	Moving on to Design. UML Activity Diagramming. Behavioral Modeling: sequence diagrams		
Sept 25, 27	Data Modeling and Database ERD	Database ERD	4
	Construction, installation and operations. Deployment diagrams.	Class Diagrams, Activity Diagrams	
10 /2, 10 /4	Architecture Design, configurations, cloud and N-tier design strategies	Sequence Diagrams	5
	Architecture Design, political requirements, and stress-testing a software's design, integrating with strategy teams, JAD	Network and Deployment Diagrams, AWS and cloud craft.io techniques	
10 /9, 10/11	Class Presentations, Groups 1, 2 (estimated)	PESTLE, Work Breakdown Structures	6
	Class Presentations, Groups 3, 4	Venn diagrams, GANTT charts	
10 /16, 10 / 18	Class Presentations, Groups 5, 6	Porter's Five Forces	7
	Summary Lectures, chapter 1, 3	SWOT	
10/ 23, 10 / 25	Summary Lectures, chapter 4, 5	Business Model Canvas	8
	Summary Lectures, chapter 6, 7	—	
10/30 , 11/1	Listen to group final presentations, presentation #8		Mid Term

11 / 6, 11/8	Introduction to a new problem domain. Digital businesses, cryptocurrency, market incentives, new business models		
			1, propose a relevant problem domain for research
11/13, 11/15	Assembling basic research documents: Ishikawa, BMM, BPMN, potential designs		
	team iteration, presentation		2 pre software engineering designs
11/20, Thanksgiving holiday	User Interface prototypes, use case candidates, activity diagram prototypes		
	team iteration, presentation		3. User experience research documents
11/27, 11/29	Class, Sequence, Activity vs Business Model Canvas		
	team iteration, presentation		
12/4, 12/6	BPMN vs UI, BMC vs BMM, other relevant analytic work to help refine your concept		
	team iteration, presentation, refinement, practice for final exam presentations		
12/10 - 12/16 TBD			