Syllabus for CIS 315

Introduction to Object-Oriented Systems Analysis and Design

California State Polytechnic University, Pomona, California
College of Business Administration, Department of Computer Information Systems

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This syllabus provides the guide for the entire course.

Course Guide

Class Meetings and Office Hours, Holidays

Term Dates
Classes run each week from January 2nd until March 9, Tuesday and Thursdays.

Final Exam Time
Tuesday March 13, 8:10 - 10:10 am

Class Meeting Times and Locations
8 - 10 pm, Building 163 (CBA Campus) room 2015

Holidays this term affecting meeting times
January 8, last day to drop
January 15, campus closed, holiday
March 12 - 16 final exam week
March 19 - 23 term break
March 26 classes begin, spring term

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.

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

A minimum grade of C (2.0) in CIS 304, 305

Textbook and Software

Required Textbook:
Title: Systems Analysis and Design 5th Edition
Authors: Alan Dennis / Wixom / Teagarden
ISBN-13: 978-1-118-05762-9
Publisher: Wiley, www.wiley.com/college/denis

Required Online (free) Reference Guides:

- The Object Management Group Websites on UML: http://www.uml.org/#Links-Tutorials
- Si Alhir, Sinan. UML in a Nutshell. O'Reilly Press, 1998. http://books.google.com/books/about/UML_in_a_Nutshell.html?id=dCqTP7ySywEC

Software:
For UML and diagramming software:

- Microsoft Word, Microsoft Visio 2010 (free and available on CIS dept website -> MSDNAA Download), OR
- Google Drive / Lucidchart Academic edition (choose the free version and proceed to register your free academic license)

Exams, Projects and Assignments

Exams: There will be one final exam. All questions related to exams must be asked/answered before the start time of the exam. Exam times are posted within CPP's website, and cannot be changed to best serve student schedules. Announcements on the timing of all due dates and exam times will be posted on our course page on github. If a student cannot attend the final at the University's scheduled time, the student must arrange to take the final ahead of time under the faculty's supervision. Students with accommodations will refer to their accommodation agreement for instructions on taking the final, and use coordination with the University to complete the course. In the case that the mid term or final exam constitutes a deliverable such as a paper or presentation (or both), a rubric for grading will be provided.

Group projects: The goal of group projects is to apply comprehensive knowledge to analyze and design an information system that solves a specific business problem. Since group projects require delegated labor, in cases where grievances arise in a group, the faculty will require a manifest detailing what each student is delegated to do, then grade the group project with individual grades.

Weekly Team Presentations

The premise of the course is to offer an authentic systems analysis experience based on team participation and original work. To guide this process, a team presentation is provided each week, during which:

1. the faculty will offer feedback and input to your group
2. the class will hear your ideas, evaluate your deliverables, discuss decisions weighing upon your group
3. individualized assignments are assigned to you and your group, to be written down at the time of assignment by a team member

Weekly presentations weigh 80% of the term grade. Therefore, each week you will accumulate potentially 10% points based on your group's participation. If you are missing or do not participate in your group's presentation, your score is recorded individually, and will not be equal to those of team mates.

Weekly Deliverable

Each week, plan to prepare one presentation, based on the concepts assigned in our lesson plan, below. In the following week, submit your slides, after incorporating feedback from the presentation. Most weeks, the professor will view your presentation when he meets with your group, provide feedback, then accept the presentation, online, once you have improved it. Thus, your weekly work should show improvement, and exhibit sophistication gleaned from a working professional.

Grading Rubric for Weekly Presentations

Each weekly presentation is a cumulative exercise. Work done in prior weeks provides the context for your latest work. Thus, as time passes, your presentations will become richer and more dependent on prior lessons. The following criteria are used to grade A projects, with notes below on non-A grades.

A Presentations Contain:

1. **Correct Diagrams**. Slides help the class understand your points. Diagrams are required related to the concepts assigned in reading and research. Having correct diagrams are not required when you present in class, however. Correct diagrams are expected after you submit the slide deck at the end of the week. Put another way, once you have received coaching and instruction on the diagram, correct diagrams are required for weekly grading. Your diagrams become should become more sophisticated and accurate over time. (2 points)
2. **New Research**. Your group should be prepared to discuss new ideas and take critique from the class. Questions we raise in prior discussions must be answered with new statements. There is ample evidence of new research on your part to develop the idea in line with coaching, critique and suggestions from the class and instructor. (2 points)
3. **Live Critique**. Your team should participate in a critique of your ongoing, evolving work productively, with the understanding that all critique is done politely and in your group's best interest. (2 points)
4. **Evidence of Iteration**. Each presentation is an opportunity to hone your idea. Changes are likely to take place. Your presentation incorporates the changes proposed in each critique, and are thus expected to show sophistication, feasibility, and a likelihood for real-world success. Thus, changes recommended by the Instructor are expected to appear in your work. (2 points)
5. **Legibility**. Effort is made to present diagrams so that they are readable by observers, within the body of the slide. Also, the team makes an effort to engage the class with thoughtful language. (2 points)

Non-A Presentations
B Grades: presentation lacks two of the above points by 50%.
C Grades: presentation lacks one or more of the above points entirely.
D Grades: presentation lacks one and one-half of the above points.
E/F Grades: presentation lacks two complete points from the above matrix.

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	%
Final Term Exam, electronic and in-class	20
Weekly Team Presentations, 8 **	80
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.

Month	Class sessions	Lecture Topic and Demonstrations	Applied skills to research and prepare on this date	chapters to read in your textbook	Team Presentation Due
jan	2	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			
	4	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	1, 2	
	9	Project Selection. Creating a project charter	Ishikawa & Root Cause Analysis	2	
	11	Requirements Determination, business process and functional requirements Part 1	BMM	3	1
	16	Requirements Determination, business process and non-functional requirements Part 2	Data Flow Diagrams, Organizational Charts	3, 5	
	18	Human-Computer Interaction / HCI Layer Design	Wireframes, UX	3	2
	23	Structural Modeling and Behavioral Modeling. UML Use Cases.	Use Case Analysis	4	

Month	Class sessions	Lecture Topic and Demonstrations	Applied skills to research and prepare on this date	chapters to read in your textbook	Team Presentation Due
	25	Static Models UML: class diagrams	UML Class Diagrams	9	3
	30	Moving on to Design. UML Activity Diagramming. Behavioral Modeling: sequence diagrams		6	
feb	1	Data Modeling and Database ERD	Database ERD	14	4
	6	Construction, installation and operations. Deployment diagrams.	Class Diagrams, Activity Diagrams	14	
	8	Architecture Design, configurations, cloud and N-tier design strategies	Sequence Diagrams	8	5
	13	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	8	
	15	Class Presentations, Groups 1, 2 (estimated)	PESTLE, Work Breakdown Structures		6
	20	Class Presentations, Groups 3, 4	Venn diagrams, GANTT charts		
	22	Class Presentations, Groups 5, 6	Porter's Five Forces		7
	27	Summary Lectures, chapter 1, 3	SWOT	1,3	
mar	1	Summary Lectures, chapter 4, 5	Business Model Canvas	4,5	
	6	Summary Lectures, chapter 6, 7	—	—	
	8	Listen to group final presentations, presentation #8		6,7	8
	13 - 15	final exam, 8:10 pm			