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

CIS 315

Introduction to Object-Oriented Systems Analysis and Design

Spring 2016

1. Instructor

Stefan L. Bund, MS
Office: Building 164 Room 3017
E-mail: slbund@cpp.edu
Phone: 949.433.7487, SMS not accepted
Website: CSU Blackboard, blackboard.cpp.edu and
https://github.com/stefanbund/SDLC-GITHUB

2. Class Meetings and Office Hours

Section 01, class number 32254
Class meetings: Tuesday, Thursday 1 pm - 2:50 pm @ Bldg 98C 4-35
Office Hours: Tuesday, Thursday 4 - 5:50 pm, office above

Section 02, class number 32255
Class meetings: Tuesday, Thursday 6 pm - 7:50 pm @ Bldg 98C 4-035
Office Hours: Tuesday, Thursday 4 - 5:50 pm, office above

Note of Disruption to Class Sessions
Due to a Union work action, your union faculty member will not be present Thursday April 14 and Tuesday April 19th. Please await announcements on class cancellation.

3. 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.

4. 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.

5. Prerequisites

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

6. 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 diagramming/UML 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)

7. Exams, Projects and Assignments

Exams: There will be one midterm and one final exam. The final exam is non-cumulative. All questions related to exams must be asked/answered before the start time of the exam.
Exam times are posted in the Lesson Timeline section of this syllabus, and may change to best serve student schedules. Announcements on the timing of all due dates and exam times will be posted through the Announcements section of Blackboard.

Group projects: The goal of the group projects is to apply comprehensive knowledge and skills you learned in class to analyze and design an information system that solves a specific business problem. Your group will author a participation contract, be self-selected, and aim to reflect your personal professional objectives to the best of our ability.

Three Term Writing Assignments. Your team will generate a three papers on assigned topics. Each assignment will be submitted electronically, under these conditions:

- one paper per group
- one submission only
- submit via link, to the Instructor's dropbox

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

Grading of the weekly assignment compounds in one grade book item, weighted 20% on the term. Therefore, each week you will accumulate potentially 2% more 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. Where necessary, a presentation may be made to the Instructor, when class time is devoted to an exercise.

Writing Assignment Revisions

To serve the needs of all students' writing education, each team is permitted to rewrite and revise any team paper. After a rigorous redlining process by the Instructor, follow up with recommended changes for potential grade revisions. A revised paper must be printed or submitted digitally to the assignment link with the file name including the words *REVISION*. Prepare to be graded very closely in each version. No more than one revision is allowed per assignment, per team. Grades are final and non-negotiable save for grading errors.

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/

8. Grading

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

Graded Items	%
Mid Term	10
Final Exam	10
3 Assignments, 20% each	60
Weekly team presentations (2% per week)	20
Total	100

9. Class Communication

Asking Questions Outside Class Meetings
All academic questions are to 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 immediate 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.
2. Avoid emails with more than several sentences. Ask questions which may be answered in a few words or sentences.
3. Consult the syllabus and assignment before sending email. Remember, electronic communications are inherently intrusive.
4. Avoid messages that cannot be answered simply.
5. Review your email several times before sending.
6. Non professional communications will no be responded to, and may be forwarded to the Dean. Avoid venting or using language you are unwilling to use personally.

Interactions via Github
Please post all academic questions to our github page, https://github.com/stefanbund/SDLC-GITHUB. Select "Issues," then while logged in, post a question. This will be delivered instantly to the Instructor's email, and answered in a timely fashion. Questions posted here will be welcomed by the entire class community, and can initiate extensive discussions. Note that all Issues posted here are visible to the entire class and are public on the Internet.

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.

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 Blackboard for the corresponding week. Please use Blackboard as a guide to what has been covered in class.

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 the course github.

10. 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.

11. 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.

12. 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.

week #	dates	Lecture Topic	Reading	Deliverables
1		Problem Domain Selection, Syllabus, Intro to Course, UML Overview		
		Phase 1: Introduction to Systems Analysis and Design, identifying the problem domain for an information system. Venn Diagramming the problem domain, identification of PESTLE components	Assigned Paper(s), Textbook chapter 1	
2		value stream analysis of existing information systems		
		market signalling, kanban analysis		
3		people and information flows, organization charts		
		data flow diagrams for existing organization/culture		
4		Phase 2: Project Selection and Project Management. Classic SWOT analysis for the organization you design for	Assigned Paper(s), Textbook chapter 2	Paper 1 due
		Requirements Determination, business process and functional modeling. Cause Effect modeling and the Ishikawa analysis.	Assigned Paper(s), Textbook chapter 3	
5		Business model canvas		
		Business motivation modeling		mid term
6		User Interface Design, using the Business Process Model Notation (BPMN) to craft a user experience to your existing organization chart and data flow analysis	Assigned Paper(s), Textbook chapter 5, 9	
		Phase 3: Structural Modeling and Behavioral Modeling. UML Use Cases		Paper 2 due
7		Moving on to Design. UML Activity Diagramming	Assigned Paper(s), Textbook chapter 7, 8	
		Static Models UML: class diagrams		
8		Behavioral Modeling: sequence diagrams	Assigned Paper(s), Textbook chapter 6	
		Phase 4: Construction, installation and operations. Deployment diagrams.		
9		Human-Computer Interaction / HCI Layer Design	Assigned Paper(s), Textbook chapter 9	
		Data Management Layer Design. Review of the Entity Relationship Diagram (ERD), and Data base types and strategies. NoSQL systems and Cloud archtiectures. Amazon Web Services		Paper 3 due
10		Physical Architecture Design. Software Defined Networking in enterprise networking. The shifting landscape toward cloud architectures and application-centered IT departments.	Assigned Paper(s), Textbook chapter 11	
		Building a career in Systems Analysis, career prospects, interview techniques, how to locate the perfect firm for you		
11		final exam TBA per CPP schedule		final exam