

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

#### Winter 2016

#### 1. Instructor

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Website: CSU Blackboard, [blackboard.cpp.edu](http://blackboard.cpp.edu) and  
<https://github.com/stefanbund/SDLC-GITHUB>

#### 2. Class Meetings and Office Hours

##### Section 02, class number 14057

Class meetings: Tuesday, Thursday 1 pm - 2:50 pm @ Bldg 163 2032  
Office Hours: Tuesday, Thursday 6 - 7:50 pm, office above

##### Section 01, class number 14056

Class meetings: Tuesday, Thursday 6 pm - 7:50 pm @ Bldg 98C 4-035  
Office Hours: Tuesday, Thursday 6 - 7:50 pm, office above

#### Note of Potential Disruption to Class Sessions

*The California Faculty Association is in the midst of a difficult contract dispute with management. It is possible that the faculty union will call a strike or other work stoppage this term. The Instructor will discuss this situation with the class, and let you know how you may be affected.*

#### 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](http://www.wiley.com/college/denis)

### Recommended Textbooks and 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](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)
- Google Drive / Lucidchart free edition or Academic edition (choose the free options)

**For project management software:** Microsoft Project 2010 (free and available on CIS dept website -> MSDNAA Download).

## 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:

- mid term, february 4th
- final exam, TBA online via CPP website

**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.

**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

**Attendance:** You will earn attendance points for each class meeting that you attend. Sign the attendance sheet at the front of class each time you go to class, to receive your attendance credit.

**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, 25% each | 75  |
| Attendance              | 5   |
| 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 not 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.

**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, republished, 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.

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| week # | dates        | Lecture Topic  | Reading                                  | Deliverables |
|--------|--------------|--|--|--------------|
| 1      | Jan 5        | Problem Domain Selection, Syllabus, Intro to Course, UML Overview  |  |              |
|        | Jan 7        | 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      | Jan 12       | value stream analysis of existing information systems  |  |              |
|        | Jan 14       | market signalling, kanban analysis   |  |              |
| 3      | Jan 19       | people and information flows, organization charts  |  |              |
|        | Jan 21       | data flow diagrams for existing organization/culture   |  |              |
| 4      | Jan 26       | 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  |
|        | Jan 28       | Requirements Determination, business process and functional modeling. Cause Effect modeling and the Ishikawa analysis.   | Assigned Paper(s), Textbook chapter 3    |              |
| 5      | Feb 2        | Business model canvas  |  |              |
|        | Feb 4        | Business motivation modeling   |  | mid term     |
| 6      | Feb 9        | 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 |              |
|        | Feb 11       | Phase 3: Structural Modeling and Behavioral Modeling. UML Use Cases  |  | Paper 2 due  |
| 7      | Feb 16       | Moving on to Design. UML Activity Diagramming  | Assigned Paper(s), Textbook chapter 7, 8 |              |
|        | Feb 18       | Static Models UML: class diagrams  |  |              |
| 8      | Feb 23       | Behavioral Modeling: sequence diagrams   | Assigned Paper(s), Textbook chapter 6    |              |
|        | Feb 25       | Phase 4: Construction, installation and operations. Deployment diagrams.   |  |              |
| 9      | Mar 1        | Human-Computer Interaction / HCI Layer Design  | Assigned Paper(s), Textbook chapter 9    |              |
|        | Mar 3        | Data Management Layer Design. Review of the Entity Relationship Diagram (ERD), and Data base types and strategies. NoSQL systems and Cloud architectures. Amazon Web Services            |  | Paper 3 due  |
| 10     | Mar 8        | 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   |              |
|        | Mar 10       | Building a career in Systems Analysis, career prospects, interview techniques, how to locate the perfect firm for you  |  |              |
| 11     | Mar 14, 2014 | final exam TBA per CPP schedule  |  | final exam   |