San José State University
Department of Computer Science
CS251B, Object Oriented Design, Section 1

Spring Semester, 2016

Course and Contact Information

Instructor:	Pearce
Office Location:	MH416
Telephone:	408-924-5065
Email:	jon.pearce@sjsu.edu
Office Hours:	TR 11:00 – 12:00
Class Days/Time:	TR 12:00 – 1:15
Classroom:	MH422
Prerequisites:	CS160 or instructor consent

Course Description

Course covers important concepts, activities, and artifacts of the design phase of object-oriented software development. Topics include design metrics, design patterns, refactoring, frameworks, and testing.

Learning Outcomes

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

1. CLO1. Create UML class, component, sequence, and statechart diagrams using a UML modeling tool.
2. CLO2. Analyze UML models programmatically.
3. CLO3. Create detailed component models using design principles and patterns.
4. CLO4. Be knowledgeable about major architectural patterns.

Required Texts/Readings

Textbook

There is no text for this course. Lecture notes will be posted at:
http://www.cs.sjsu.edu/faculty/pearce/modules/lectures/ood2/index.htm

Other Readings

My lectures draw substantially from the following books. They're old which means much of their content can be found online.

Pattern-Oriented Software Architecture, a System of Patterns, volume I; Buschmann, et al; Wiley; 1996.
Design Patterns: Elements of Reusable Object-Oriented Software; Gamma et al; Addison Wesley; 1994.

Other equipment / material requirements

Star UML 2; http://staruml.io/
Eclipse IDE for Java Developers; http://www.eclipse.org/downloads/

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

Grades will be determined as follows:

Final Exam: 30%
Midterm: 20%
Team Project: 25%
Weekly Assignments: 25%

NOTE that University policy F69-24 at http://www.sjsu.edu/senate/docs/F69-24.pdf states that "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Grading Policy

Letter grades for this class will be based on the final exam (30%), midterm exam (20%), and assignments (50%). Letter grades for the course will be assigned according to the following scale:

A = 100% - 85%
B = 84% - 70%
C = 69% - 55%
D = 54% - 40%
F = 39% - 0%

Late work is not accepted and there will be no extra credit assignments.

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

Classroom Protocol

Students are expected to bring laptops to class.

University Policies

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See University Policy S90–5 at http://www.sjsu.edu/senate/docs/S90-5.pdf. More detailed information on a variety of related topics is available in the SJSU catalog, at http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at http://www.sjsu.edu/provost/services/academic_calendars/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/**.** Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/.

Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor's permission to record the course and the following items to be included in the syllabus:

- "Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material."
    - It is suggested that the greensheet include the instructor's process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
    - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- "Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent."

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

CS251B Object-Oriented Design, Spring 2016, Course Schedule

The schedule below is subject to change. The actual schedule will be posted at the course website:

http://www.cs.sjsu.edu/faculty/pearce/modules/courses/sp16/cs251b/index.htm

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/28	Course overview
2	2/2	Review of Software Engineering
2	2/4	Review of OOA
3	2/9	Review of OOP
3	2/11	Object-Oriented Models and UML Class Diagrams
4	2/16	Object-Oriented Models and UML Class Diagrams
4	2/18	Collaborations and UML Sequence Diagrams
5	2/23	Collaborations and UML Sequence Diagrams
5	2/25	Design Principles and Metrics
6	3/1	Design Principles and Metrics
6	3/3	Design Patterns
7	3/8	Design Patterns
7	3/10	Design Patterns
8	3/15	Design Patterns
8	3/17	Design Patterns
9	3/22	Midterm Review
9	3/24	Midterm
10	3/29	Spring Break
10	3/31	Spring Break
11	4/5	Pipeline Architectures
11	4/7	Pipeline Architecture
12	4/12	Model-View-Controller Architecture
12	4/14	Model-View-Controller Architecture
13	4/19	Creation Patterns
13	4/21	Agent-Based Systems
14	4/26	Agent-Based Software Development

Week	Date	Topics, Readings, Assignments, Deadlines
14	4/28	Reflection
15	5/3	Open System Architectures
15	5/5	Enterprise Architectures
16	5/10	Enterprise Architectures
17	5/12	Final Exam Review
Final Exam	5/20	9:45 – 12:00 in MH422