SJSU SAN JOSÉ STATE UNIVERSITY

College of Science · Computer Science

Object-Oriented Design Section 06

CS 151

Spring 2025 In Person 3 Unit(s) 01/23/2025 to 05/12/2025 Modified 12/31/2024

Contact Information

Instructor: Telvin Zhong

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Office Hours:

Friday 1-2 PM by zoom: https://sjsu.zoom.us/j/3850445803 or by appointment.

Course Description and Requisites

Design of classes and interfaces. Object-oriented design methodologies and notations. Design patterns. Generics and reflection. Exception handling. Concurrent programming. Graphical user interface programming. Software engineering concepts and tools. Required team-based programming assignment.

Prerequisite(s): MATH 42, CS 46B, and [(CS 48 or CS 49J) if CS 46B was not in Java], each with a grade of "C-" or better; Allowed Declared Majors: Computer Science, Applied and Computational Math, Software Engineering, or Data Scienceï¿½or instructor consent.

Letter Graded

Classroom Protocols

- This course is an in-person class. Do your best to be on time. If you miss a class, contact your classmates and review the lecture slides to not fall behind since most weeks build on previous weeks.
- Attendance is encouraged to succeed in this course. While the slides will cover all relevant concepts, anything verbally discussed during class is eligible to appear on exams.
- Students are prohibited from recording class activities including lectures, office hours, advising sessions, etc. Materials created by the instructor for this course are copyrighted by the instructor. This university policy (S12-7) is in place to protect the privacy of students in the course, as well as to maintain academic integrity through reducing instances of cheating. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office.

Unauthorized recording may violate university and state law. It is the responsibility of students that require special accommodations or assistive technology due to a disability to notify the instructor.

- Artificial intelligence (AI) tools like ChatGPT, Google Gemini, and GitHub Copilot are not permitted for writing code in this class. SJSU's subscription to Turnitin has an AI-detection feature, and assignments that have been determined by that application or by other evidence to have been written by AI in substantial fractions will receive an automatic zero. Such incidents will also be reported to the University as academic misconduct. Consequences can range at minimum to failing the assignment to suspension or expulsion from the university.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Goals

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

Object-Oriented Design

Follow a systematic object-oriented design methodology.
Develop use cases, perform noun/verb analysis, interpret, and produce CRC cards.
Interpret and produce UML diagrams.
Understand object-oriented concepts.
Use design patterns.
Practice SOLID design principles.

Advanced Java Language

Implement Java fundamental concepts of OOP.
Implement Java constructs such as: Interfaces, Abstract classes, Nested classes, ...
Implement Java standard Object methods.
Implement Java type system, lambda expression, serialization, Java generics, ...
Implement exception handling.
Implement threads and thread-safe data structures.

GUI Programming

Use JavaFX to create graphical user interface (GUI) for desktop applications.

Course Materials

This course does not have any required textbook. Exams will center around what is verbally communicated during class and the topics on the slides.

Supplemental Reading:

Cay Horstmann, "Object-Oriented Design & Patterns," 3rd edition

https://horstmann.com/oodp3

Course Requirements and Assignments

Prior Java knowledge is not a prerequisite for this course but students must be comfortable with programming fundamentals.

Projects:

- Projects will be done in groups of 3-4 and will collectively constitute around half of your grade.
- We will host projects in private repositories on Github. Having a Github account and basic familiarity with git is highly recommended.
- Projects will be graded based on the code in the repo on midnight of the due date. Late contributions will not be considered.
- More details will be given when the first project is assigned.

Exams:

- There will be one midterm exam and one comprehensive final examination.

Grading Information

From	Grade
97	A+
93	A
90	A-
87	B+
83	B
80	B-
77	C+
73	C-
70	C-
67	D+

63	D
60	D-
0	F

There will be opportunities for extra credit throughout the semester. In return, the above grading scheme is final and grades will not be rounded.

Breakdown

Midterm	25%
Final Exam	30%
Project 1	10%
Project 2	15%
Project 3	20%

University Policies

Per University Policy S16-9 (PDF) (http://www.sjsu.edu/senate/docs/S16-9.pdf), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the Syllabus Information (https://www.sjsu.edu/curriculum/courses/syllabus-info.php) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Section 6: 1/23 to 5/8, Tuesdays and Thursdays @ Duncan Hall 450

Final Exam: Thursday May 15th 5:30 - 7:30 PM

Makeup Final Exam: Wednesday May 21

Makeup exams will only be given in cases of illness (documented by a doctor) or in other cases of documentable and extreme emergencies.