

Object-Oriented Design Section 04 cs 151

Fall 2024 3 Unit(s) 08/21/2024 to 12/09/2024 Modified 08/27/2024

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 Science; or instructor consent.

Letter Graded

* Classroom Protocols

Policy on Academic Integrity

- Any cheating on an exam will result in a grade of 0 (F) for that exam. A second incident of cheating will result in a grade of F in this course as the final semester grade.
- If duplicate programs are found, both the provider and the copier will receive 0 points for that specific assignment. A second offense will result in a grade of F for this course as the final semester grade.
- Any incident of academic dishonesty will be reported to University for disciplinary action.

Attendance: University policy F15-12 at <http://www.sjsu.edu/senate/docs/F15-12.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.

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:

- "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."

- "Course material 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."

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 Learning Outcomes (CLOs)

Course Requirements and Assignments

Programming Assignments and Project

- Five individual programming assignments involving design and implementation. (All submitted programs should be original. For some assignments, you are allowed to borrow a code from the textbook. If this is the case, it will be clearly specified in the assignment description and you have to acknowledge it in the corresponding source code.)
- A group project with 3 members per group in the last month of the semester involves OO design and GUI programming. A project description and guidelines will be posted later.
- Unless I specifically ask for hard copies, all assignments will be submitted through my course web page. Find the homework submission link corresponding to your section at the left side of the course web page.

Submission/Late Policy

- Any assignments/project turned in past the deadline will get a penalty: For each late day, a 20% of the maximum obtainable score of the work will be taken out of what you earned. (a late day is one 24 hour period beyond the due date). For example, suppose the maximum score of an assignment is 100 and you earned 80 points. If the submission is late by two days, the final score of that assignment would be $80 - (2 * 20) = 40$.
- Any submission turned in more than 48 hours past the deadline will result in a grade of zero for that assignment.

- On-line submission: You can submit your work multiple times. If then, the latest one will be considered as the final submission. If the final submission is submitted late, the late policy for calculating the final score will be applied.
- E-mail submissions will not be accepted for grading. All assignments are to be submitted online via Canvas.

Teamwork Policy

Once a team is formed, it will last throughout the semester. If you dissolve your team, a significant amount of penalty will be determined by the instructor and given to both parties.

For the project, students are expected to report their own results as well as their collaborators. The task responsibility and contribution of every team member must be precisely documented in a report. Team members will be graded individually based on the report and peer evaluation.

Software

Programming Language: Java Platform SE 8 or higher

- It is available on all Department machines.
- Download at <http://www.oracle.com/technetwork/java/javase/downloads/index.html>

StarUML

- Download at <http://staruml.sourceforge.net/en/download.phpa>>
- StarUML Tutorial (to start off) at <http://www.owlnet.rice.edu/~comp201/07-spring/info/staruml/>
- StarUML User Guide at <http://staruml.sourceforge.net/en/documentations.php>

Violet at <http://horstmann.com/violet>

IDE:

- Eclipse at <http://eclipse.org/>
- NetBeans at <http://netbeans.org/>

Homework Assignments

In addition to the project work, you are required to do independent assignments. Details on what to submit and how to submit these assignments will be provided in class and on Canvas.

Exams

There will be two midterm exams and one comprehensive final exam. The exams are scheduled as below. The dates of midterm exams are subject to change with fair notice, but the final exam date is firm and cannot be changed.

- Midterm Exam I: See the schedule below
- Midterm Exam II: See the schedule below
- Final Exam: See the schedule below

All the exams will be closed book and no open notes. There will be no personal digital devices allowed during the exam. I strongly suggest that you attend each class and take good notes during the semester.

Makeup Exam Policy

Absolutely no make-up exams will be offered under any circumstances.

Course Materials

Required Texts/Readings

Textbook: Object-Oriented Design & Patterns, 3rd edition, by Cay Horstmann

Readings

Readings will be assigned and noted in Canvas. Readings may also be assigned from articles and journals. The links for these materials will be provided on Canvas.

Technology Requirements

Students are required to have an electronic device (laptop, desktop or tablet) with a camera and built-in microphone. SJSU has a free equipment loan (<https://www.sjsu.edu/learnanywhere/equipment/index.php>) program available for students.

Students are responsible for ensuring that they have access to reliable Wi-Fi during tests. If students are unable to have reliable Wi-Fi, they must inform the instructor, as soon as possible or at the latest one week before the test date. See Learn Anywhere website (<https://www.sjsu.edu/learnanywhere/equipment/index.php>) for current Wi-Fi options on campus.

Faculty Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas Learning Management System course login website at <https://sjsu.instructure.com>. You are responsible for regularly checking the messaging system through MySJSU and Canvas (or other communication system as indicated by the instructor) to learn of any updates.

✓ Grading Information

Grading Information

You will receive a final grade based on the weighted average score on your performance. The grading weights are as follows.

Category	Composition
Programming Assignments	10%
Participation (polls and pop quiz in class)	15%
Project	10%
Exam 1	20%
Exam 2	15%
Final Exam	30%

Each student's earned grade at the end of the semester will be based on the combined performance of each of the main grading categories. The final assigned letter grade will be based on the table below.

Grade	Percentage
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A+	97.50 to 100%
A	92.50 to 97.49%
A -	90.00 to 92.49%
B +	87.50 to 89.99 %
B	82.50 to 87.49%
B -	80.00 to 82.49%
C +	77.50 to 79.99%
C	72.50 to 77.49%
C -	70.00 to 72.49%
D +	67.50 to 69.99%
D	62.50 to 67.49%
D -	60.00 to 62.49%
F	Below 60.00%

Grading Table (for end of semester total)

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.

University Policies

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/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) (<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

CS151 Object-Oriented Design, Fall 2024: Semester Schedule

*Subject to change with fair notice at least one class period in advance. Students will be notified in class and/or via course web site should any changes occur.

Week	Date	Topics	Assignments	Notes
1	8/22	Introduction to CS151	8/22 HW #1	
2	8/27 - 8/29	Object-Oriented Design Process		8/29 HW #1 due
3	9/3 - 9/5	Object-Oriented Design Process	9/5 HW #2	
4	9/10 - 9/12	9/10 Object-Oriented Design Process 9/12 Interface Types and Polymorphism		9/12 HW #2 due
5	9/17 - 9/19	Interface Types and Polymorphism		
6	9/24 - 9/26	Interface Types and Polymorphism	9/26 HW #3	
7	10/1 - 10/3	10/1 Interface Types and Polymorphism 10/3 Lambda Expression	10/3 HW #4	10/3 HW #3 due
8	10/8 - 10/10	10/8 Patterns and GUI Programming 10/10 Midterm		10/8 HW #4 due 10/10 EXAM
9	10/15 - 10/17	Patterns and GUI Programming		

10	10/22 - 10/24	Patterns and GUI Programming		Teams formed
11	10/29 - 10/31	Inheritance and Abstract Classes	10/29 Project	
12	11/5 - 11/7	Inheritance and Abstract Classes	11/7 HW #5	
13	11/12 - 11/14	11/12 The Java Object Model 11/14 Midterm II		11/12 HW #5 due
14	11/19 - 11/21	The Java Object Model		
15	11/26 - 11/28	11/26 Concurrent Programming 11/28 NO CLASS		(11/27 Non-Instructional Day, Thanksgiving Holiday: 11/28- 11/29)
16	12/3 - 12/5	12/3 Concurrent Programming 12/5 Review (last day of instruction)	12/3 HW #6	12/5 Project due
17	12/12	Final Exam Section 3: Thursday, December 12, 5:15 PM-7:30 PM Section 4: Thursday, December 12, 7:45 PM-10:00 PM		12/8 Sunday HW #6 due