# San José State University
## College of Science/Department of Computer Science
## CS151, Object-Oriented Design
## Sections 1, 2, and 3
## Spring Semester, 2025

## Course and Contact Information

### Instructor

- ‹ Jon Pearce
- ‹ Office Location:  DH 439
- ‹ Telephone:       TBA
- ‹ Email:           jon.pearce@sjsu.edu

### Office Hours

- ‹ MW 1:30 – 3:00 in DH 439
- ‹ By appointment on Zoom

### Lectures

- ‹ Section 1: MW 10:30 – 11:45 in MH 422
- ‹ Section 2: MW 12:00 – 1:15 in MH 422
- ‹ Section 3: MW  3:00 – 4:15 in MH 222

Note: All lectures are IN PERSON

### Prerequisites

- ‹ Math 42, CS46B, and CS49J (or equivalent knowledge of Java) with a grade of C- or better in each.

## Course Description

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

### Section Description

Students will be introduced to the above concepts through a series of projects, some of which will be team-based.

### Course Learning Outcomes

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

1. Interpret and produce UML class diagrams.
2. Develop use-case models
3. Select and apply key design patterns in the construction of a software application.
4. Be able to follow a systematic OO design methodology
5. Create a class hierarchy involving existing and new interfaces and classes, including inner classes.
6. Design, implement, test, and debug large Java programs
7. Use generic types, reflection, and lambda expressions
8. Catch and throw exceptions
9. Implement concurrent programs and thread-safe objects
10. Use a GUI toolkit to create a graphical user interface involving frames, txt components, panels, menus, and simple geometric shapes.

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**Course Requirements and Assignments**

There will be several projects. Some will be team projects. In addition, there may be several in-class labs. Both labs and projects will require students to be proficient in writing and debugging Java programs.

*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](http://www.sjsu.edu/senate/docs/S12-3.pdf) *at* [http://www.sjsu.edu/senate/docs/S12-3.pdf.](http://www.sjsu.edu/senate/docs/S12-3.pdf)

**Grading Scheme**

Course grades will be determined by computing a weighted average of all submitted work using the following weights:

| | |
|---|---|
| Assignments | 60% |
| Midterm | 15% |
| Final | 25% |
| TOTAL | 100% |

Weights of individual assignments appear on the course assignments page.

The averages appearing in Canvas are not weighted and do not correspond to your course grade.

Assuming a normal distribution of weighted averages, I will use the following scheme for computing letter grades:

| | |
|---|---|
| A | 94% - 100% |
| A- | 90% - 93% |

| | |
|---|---|
| B+ | 87% - 89% |
| B | 84% - 86% |
| B- | 80% - 83% |
| C+ | 77% - 79% |
| C | 74% - 76% |
| C- | 70% - 73% |
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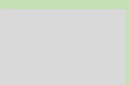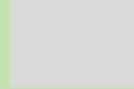
*Upfgtitcfwcvg Ptqitcou∮ [Syllabus Information web page](#) at*

*http://www.sjsu.edu/gup/syllabusinfo/*

**Course Schedule**

Below is a tentative schedule of topics and activities. The instructor reserves the right to make changes to the schedule with fair warning. Exact due dates of assignments are given on the Assignments Page (see below).

| Week | Week | Topics | Projects |
|---|---|---|---|
| 1 | 1/27, 1/29 | Software Engineering, Requirements Modeling | |
| 2 | 2/3, 2/5 | RequirC t9tP2ttnt9tP2ttnt9tP2ttnt9tP2ttnt9tP | |