

Object-Oriented Design Section 02

CS 151

Fall 2024 3 Unit(s) 08/21/2024 to 12/09/2024 Modified 08/26/2024

Contact Information

Instructor(s):	Dr. Chung-Wen (Albert) Tsao
Office Location:	MacQuarrie Hall 411
Telephone:	N/A
Email:	chung-wen.tsao@sjsu.edu (Once the class starts, use Canvas Inbox)
Class Days/Time:	MoWe 10:30PM - 11:45AM
Classroom:	Industrial Studies 113
Office Hours:	T/R 12:00–01:00 pm F 11:00–12:00 noon at MH411 or on ZOOM https://sjsu.zoom.us/j/85666204287

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

- Instructor may drop students (by the Instructor Drop Deadline) who
 - are absent for 1st day of class without informing you before 2nd day of class, or
 - have no proof of the prerequisite fulfillments.
- Do not ask for special treatment. The rules for this course apply to everyone equally.
- Cheating will not be tolerable; a ZERO will be given to any cheated assignment/exams, and it will be reported to the Department and the University.
- Do NOT share/post online any course materials, PPT slides, or homework solutions.
- Use of electronic devices during exams is NOT allowed unless stated otherwise.
- You are required to check Canvas for reading/assignments.
- The information on this syllabus is subject to change; changes, if any, will be clearly explained in class, and it is your responsibility to become aware of them.
- Once the class starts, use Canvas Inbox to email me for a faster response. I check the Canvas Inbox emails much more often than my school emails.

≡ 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)

Upon successful completion of this course, students would 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

(Required) Big Java: Late Objects

- Author; Cay Horstmann,
- Edition: 2nd edition
- ISBN: 978-1-119-32107-1
- student companion website
 - <https://bcs.wiley.com/he-bcs/Books?action=index&bcsId=10406&itemId=1119321077>

(Required) ZyBook: CS151-02 Object-Oriented Design

- This book is created based on Cay S. Horstmann, Big Java: Late Objects (2e)
- Click any zyBooks assignment link in CANVAS
 - **(Do NOT go to the zyBooks website and create a new account)**
- Subscribe (Wait until the book is available)

(Optional) "Object-Oriented Design & Patterns,"

- Author; Cay Horstmann,
- Edition: 3rd edition
- Availability:
 - <http://horstmann.com/oodp3/>

(Optional) Head First Object-Oriented Analysis and Design

- Author: Brett McLaughlin, Gary Pollice, David West
- Publisher: O'Reilly Media, Inc.
- ISBN: 0596008678
- Availability:
 - <https://learning.oreilly.com/library/view/head-first-object-oriented/0596008678/>

(Optional) Head First Design Patterns

- Author: Eric Freeman, Elisabeth Robson
- Publisher: O'Reilly Media, Inc.
- Edition: 2nd Edition
- ISBN: 9781492077992

- Availability:
 - <https://learning.oreilly.com/library/view/head-first-design/9781492077992>

(Optional) "Object-Oriented Design in Java,"

- Authors: Stephen Gilbert and Bill McCarty,
- Publisher: Sams
- ISBN-13: 978-1571691347

(Optional) "Big Java: Early Objects,"

- Author: Cay S. Horstmann,
- Publisher: Wiley
- Edition: 7/e,
- ISBN: ISBN-10 : 1119499534 ISBN-13 : 978-1119499534

Course Requirements and Assignments

Midterm Exams:

- Midterms will only be given during class time.
- Makeup midterm exams will only be given in cases of verifiable emergency.
- Midterm exam dates in this syllabus are approximate and are subject to change.

Final Exam:

- The final exam will be cumulative and will only be given during class time.
- Makeup exams are only given if there is a verifiable emergency or illness OR if a student has more than two final exams within a 24 hour period and notifies the instructor 2 weeks before the last class meeting.

Grading Information

- Final grades will not be adjusted in any way - so an 89.99% is still a B+.
- No incomplete grades will be given.
- No late submission of assignments will be accepted.
- However, everyone has two passes in the last week of semester to waive the penalty for
- any two submissions that are each turned in within 24 hours after the due date, or
- any one submission of that are turned in within 48 hours after the due date.

Grade Percentage

- Participation 1% (Bonus)
- Quizzes: 10%
- zyBooks Homework 10%

- Homework: 20%
- Project 20%
- Midterm 20%
- Final 20%

Criteria

The grading scale is as follows:

Grading Scale					
A+	97%	A	93%	A-	90%
B+	87%	B	83%	B-	80%
C+	77%	C	73%	C-	70%
D+	67%	D	63%	D-	60%
F	below 60.0%				

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

Week		Topic	Notes
1	8/21	Introduction, Java Recap	
2	8/26, 8/28	Methods, Packages, Classes and Objects	

3	9/2, 9/4	OOP Fundamentals Part	
4	9/9, 9/11	Design Patterns	
5	9/16, 9/18	Design Patterns	
6	9/23, 9/25	Design Patterns	
7	9/30, 10/2	Design Patterns	
8	10/7, 10/9	JavaFX GUI	
9	10/14, 10/16	Streams	
10	10/21, 10/23	Review, Midterm,	
11	10/28, 10/30	Generics, Reflection,	
12	11/4, 11/6	Junit Tesing	
13	11/11, 11/13	Exception Handling	
14	11/18, 11/20	Advanced Java (Part 1)	
15	11/25, 11/27	Advanced Java (Part 2), Thanksgiving holiday	
16	12/2, 2/4	Concurrent Programming	
17	12/9	Review	
	Final Exam (https://www.sjsu.edu/classes/final-exam-schedule/fall-2024.php)	Dec 12, 9:45 AM-12:00 PM	

Other important dates.

Sun, Aug. 18 Last day to drop for 100% refund

Tue, Sep 17: Last Day to Drop Classes without a "W" Grade

[Fall 2024 calendar: \(https://www.sjsu.edu/registrar/calendar/fall-2024.php\)](https://www.sjsu.edu/registrar/calendar/fall-2024.php)

<https://www.sjsu.edu/registrar/calendar/fall-2024.php>

<https://www.sjsu.edu/provost/docs/Academic-Calendar-2024-25.pdf>

