Instructor(s):	Mariia Surmenok
Office Location:	Online via zoom: https://sjsu.zoom.us/j/7233378568?pwd=blRyRDlIaXJ5TTFSNnJIUkNpYlI0UT09
Email:	Mariia.surmenok@sjsu.edu
Office Hours:	Tuesdays & Thursdays 1:20 PM – 2:20 PM
Class Days/Time:	Tuesdays & Thursdays 12 PM – 1:15 PM
Classroom:	Online via zoom: https://sjsu.zoom.us/j/84464781221?pwd=eldsKzErOWE0U1d5dzRaUnpzR1Nydz09
Prerequisites:	MATH 42, and (CS 46B in Java or (CS 49J and CS 46B)) 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. Concurrent programming. Graphical user interface programming. Software engineering concepts and tools. Required team-based programming assignment.

Course Format

Technology Intensive, Online Course

Faculty Web Page and MYSJSU Messaging

We will use Canvas and Slack chat. Also, we will use iClicker for polling during the lectures.

Course Goals

Introduce students to the basic principles of OO Design, plus elements of UML and design patterns. Cover the Java language features not yet seen in CS1 and CS2. Teach basic GUI programming.

OO Design:
- o Introduce core UML concepts
- o Introduce a simplified OO analysis and design methodology
- o Present the concept of design pattern
- o Present the concept of a software framework

Java Language
- o Make students proficient in the use and creation of interfaces and inheritance hierarchies

- o Make students proficient in the Java type system
- o Introduce threads and thread safety
  Software Engineering:
  - o Introduce a GUI toolkit, including basic widgets and the event handling mechanism
  - o Introduce basic software engineering concepts and tools

Course Learning Outcomes (CLO)

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

1. OO Design
   Interpret and produce UML class diagrams and UML sequence diagrams
   Develop simple use cases, perform noun-verb analysis, interpret and produce CRC cards
   Appropriately select and apply the following design patterns in the construction of a software
   application: Composite, Decorator, Iterator, Strategy, Template method, and Observer
   Be able to follow a systematic OO design methodology

2. Java language
   Create a class hierarchy involving existing and new interfaces and classes, including inner classes.
   Design, implement, test, and debug programs in an object-oriented language
   Use generic types, reflection, and lambda expressions
   Throw, propagate and catch exceptions
   Implement concurrent programs and use thread-safe data structures

3. Software Engineering
   Use a GUI toolkit to create a graphical user interface involving frames, buttons, text components,
   panels, menus, and simple geometric shapes
   Be able to document use cases for a simple team project
   Be able to plan and track a svi Use O 0 d9083Tj/TT0 1 Tf0.46 0 Td( )TjaTT04 0 Td(U)h(ogd( )TjEMJC /LBody)}M

instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus."

Exams (30%)
One midterm exam (15%) and final exam (15%). Exams cannot be made up, except for reasons of illness, as certified by a doctor, or documentable extreme emergency.
We will use Proctorio extension with Google Chrome to take midterm and final exams + you need a web camera.

Quizzes (10%)
Quizzes will be given throughout the course covering the required material discussed. Quizzes will be given every Tuesday (or biweekly if there are not enough material) on Canvas and should be completed by 11:59 PM of the same day. Two lowest scores will be dropped. No make-up quizzes.

Programming Assignments (30%)
Approximately 4-6 homework assignments. Code should be uploaded to GitHub and readme with GitHub link and any written answers should be uploaded on Canvas.
Late Homework
Schedule your time well to protect yourself against unexpected problems.

> One late homework without penalty for up to 7 days. If using this option, should email to me, so I can notify grader to not place any deduction. Cannot be combined with late homework (below). Would not be accepted 7 days after the original due date.
> All other late works is accepted with a penalty of 10% per day. Late homework is not accepted one week past it's due date All homework is due at 11:59PM (Pacific Time) on the due date specified.

Project (30%)
One team project with 3 people per team. One team lead per project. Project will involve OO design and GUI programming. The project details will be posted later.
At the end of the project, each team member should submit the report explaining its own contribution and peer evaluation describing the contribution of your team members.

Extra credit
The iClicker participation points will be used for extra credits

Grading Information

Your grade for the course is based on the exams, the homework, and quizzes. Grades are calculated by weighting the scores as defined below. For each section (exams, quizzes, homeworks) the grade cannot exceed 100% even if you gs def exceed

by the Office of Undergraduate Education. Make sure to visit this page to review and be aware of these university policies and resources.

CS151 -- Object-Oriented Design, Spring 2021, Course Schedule

Course Schedule

The schedule is subject to change with fair notice.

February 8 – Last day to d

Week/Lesson /Module	Date	Topics, Readings, Assignments, Deadlines (If appropriate, add extra column(s) to meet your needs.)
10	04/01	Spring Recess
11	04/06	**Midterm** (via Proctorio)
11	04/08	Inheritance and Abstract Classes, Chapter 6
12	04/13	Inheritance and Abstract Classes, Chapter 6 **Quiz 9**
12	04/15	Inheritance and Abstract Classes, Chapter 6 **Project Milestone 3: Model and incorporated Design Pattern (due Sunday 04/18)**
13	04/20	The Java Object Model, Chapter 7 **Quiz 10**
13	04/22	The Java Object Model, Chapter 7
14	04/27	The Java Object Model, Chapter 7 **Quiz 11**
14	04/29	Frameworks, Chapter 8
15	05/04	Concurrency, Chapter 9 **Quiz 12**
15	05/06	Concurrency, Chapter 9
16	05/11	Final Review **Project Milestone 4: Final Submission (due Tuesday 05/11)**
16	05/13	**Project:**