

CSCI 391 ST: Object-Oriented Programming

Fall 2020



Class meets: TTh 11:00 – 12:20 p.m. Zoom Discussion / Design Sessions

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Course Description:

Object-oriented programming is a programming paradigm – an approach to solving problems. The paradigm is based on making models of “things” the real (or virtual) world, and carefully designing the interactions between those models and the ways in which they may be used. This class explores several object-oriented principles including inheritance, abstraction, encapsulation, polymorphism and typing. Projects will implement several common design patterns, interfaces and abstract classes; and look at several of Java’s libraries.

Grading:

Projects	80%
Exams (2)	20%

Textbook:

None required. A variety of online resources and .pdf textbook sections will be used.

Accommodations:

Students who need any type of accommodation should work with Student Disability Services and provide appropriate documentation as soon as possible.

Academic Dishonesty:

You are encouraged to work in teams and use many resources including books and the Internet. However, each student must turn in his/her own work, and each student is responsible for understanding anything that is turned in. Refer to the Student Conduct Code for more information regarding plagiarism and cheating.

Student Learning Outcomes: Upon the successful completion of this class, students will be able to:

1. read a problem specification and define functional requirements for the problem;
2. articulate features of the object-oriented approach;
3. apply design patterns appropriately to a problem involving an interactive system;
4. write intermediate to advanced object-oriented programs by implementing interfaces, abstract classes, abstraction, inner classes, etc.; and
5. explore and evaluate object-oriented features of various languages,

Course Schedule

Week	Topics
0 Aug. 19- 21	Syllabus, Introduction, how the remote class will work OOP paradigm and purpose, features, languages
1 Aug. 24 - 28	Design Patterns
2 Aug. 31 – Sept. 4	Design Patterns
3 Sept. 7 - 11	Design Patterns
4 Sept. 14 - 18	Interactive system design project (i.e. a game) using MVC, a factory pattern and an additional pattern
5 Sept. 21 - 25	Midterm Exam: Project demo/explanation/UML Interfaces and Abstract Classes
6 Sept. 28 – Oct. 2	Interfaces and Abstract Classes
7 Oct. 5 - 9	Java Object Hierarchy, some libraries / classes and interfaces
8 Oct. 12 - 16	Intro to JavaFX, setting up, intro project Inner/nested classes
9 Oct. 19 - 23	JavaFX
10 Oct. 26 – 30	JavaFX
11 Nov. 2 - 6	JavaFX
12 Nov. 9 - 13	JavaFX project demos
13 Nov. 16 - 20	OOP in other languages
14 Nov. 23-25	Written Final Exam