CSC 300 – Spring 2023
01 - TTH 8:30 – 9:45 PM – SAC 2102
02 - TTH 7:00 – 8:15 PM
SAC 2102

Course	CSC 300 Software Development
Instructor:	Howard Rosenthal
Phone	See Professor
Email	csc300csudh@gmail.com
Web Site	http://CSC300CSUDHSpring2023.weebly.com
Office Hours	TTH 8:00 AM – 8:30AM; 6:15 PM – 6:45 PM in office. Or by appointment NSM A139
Prerequisites	CSC 123 with a minimum grade of a C. Must be fluent in all basic Java flow structures, arrays, methods, ArrayList, basic file IO, encapsulation, classes and objects, abstract classes, polymorphism, inheritance. This class can require up to an additional **10 hours per week** to complete the homework and programming assignments. If you can't commit to the homework and class times please reconsider taking this course.
Textbook	Most information comes from lecture notes and programs on the web site. Lecture notes include a full set of references. Review material from CSC 123 available at: http://CSC123CSUDHSPRING2022.weebly.com
Other Materials	You will need access to a PC or a Mac. All work in class will be on the available PC, Mac or Linux computer. You will need to install a java compiler and Notepad ++ (PC) or an equivalent text editor such as jedit for a Mac. You may also use the latest version of Eclipse or any other IDE to prepare programs. See the website for all presentations, assignments, assignment answers and reference materials.
Attendance	Students are expected to attend all lectures. Assignments are to be e-mailed to the lecturer before class on the due date. A hardcopy should be available for use when we go over the homework. A make-up for a missed test requires a serious excuse. Any make-up will be more challenging than the original test. An unexcused missing test will earn a 0%. **Notice. If you miss more than 6 classes you must drop the class.** **Failure to do all the homework will likely result in failure.**

Grading:

Midterms: 15% each. There will be two tests. Format may be in class, take home, or a project for each test, as determined by the instructor.

Final: 40%

Homework: 30% - I encourage you to do as much as you can yourself.

You will have difficulty passing this course if you don't do the homework. Homework answers are posted after the due date. Homework is sent to the e-mail address above as attachments. Programs similar to those required for homework are often posted when the homework is posted. You must submit homework on time unless there is a valid excuse.

There may be extra credit points associated with some homeworks and/or each exam.

Final letter grade follows standard University policy:

A's for 93 and above, A- from 90 to 92, B+ 87-89, B 83-86, etc.

Class Description: This class is meant to hone and improve your object-oriented skills in design and programming. We will discuss the proper ways to build and develop software, and further develop your object oriented mind-set. I have chosen to use generics and data structures, key computer science topics, to meet these goals. We will also study newer functional programming methods that are now popular in Java programming and introduce the use of streaming. This class is specifically directed to computer science majors, and will move at a faster pace. The skills learned in this class will be of great use in your upper division classes.

Course Objectives:

- Solidify students' understanding about major aspects of object-oriented programming
- Enhance students' programming and problem solving ability significantly
- Learn some more advanced concepts in Java
- Build a solid foundation for further study in computer science, data science and programming

Below is a preliminary schedule that may be modified based on the pace of the class. This is a fairly aggressive schedule that will depend to some extent on your prior knowledge from CSC 123. Additional materials that are posted are listed here and available for independent study.

Week	Lectures
1	Lesson 1 - Good Software Programming Practices
1-2	Lesson 2 - Reviewing Java Implementation of OO Principles - Part 1 - Classes, Encapsulation, Aggregation, Inheritance
2-3	Lesson 3 - Reviewing Java Implementation of OO Principles - Part 2 - Abstract Classes, Polymorphism, Interfaces

3	Lesson 4 - ArrayList - A Generic; Comparator and Comparable Interfaces
4-5	Lesson 5 - Introduction To Generics
6	Exam 1 (approximate date)
6	Lesson 6 – Collections in Java
7	Lesson 7 – The List interface and List classes
8	Lesson 8 - Queues
8	Lesson 9 - Sets
9	Lesson 10 – Maps and Trees
9	Exam 2 (approximate date)
10	Lesson 11 – Functional Programming and Lambda Expressions
11	Lesson 12 – The Java Functional Interfaces
12	Lesson 13 - Using Functional Interfaces
13-14	Lesson 14 - Introduction To Streams
14-15	Lesson 15 - Working With Streams
15	Lesson 16 - Collecting Data with Streams
	Lesson 17 - Introduction To Concurrency and Multithreading
	Lesson 18 - Java Multithreading
	Lesson 19 - Java Synchronization
	Lesson 20 - The Java Memory Model and Concurrency
	Lesson 21 - Deadlocks and Thread Pools In Java
	Lesson 22 - Design Patterns Introduction

Import Dates

Date	Description
February 9	Instructor Drop Deadline
February 17	Drop Without Record Of Enrollment Deadline
Feb.. 20 – April 21	Serious and Compelling Reason To Withdraw
Feb. 20	President's Day (No Classes)
March 26 – April 1	Spring Break (No Classes)
April 24 – May 12	Serious Accident/Injury Required To Withdraw
May 12	Last Day of Scheduled Classes
May 13 – May 19	Final Exams

University Standards for Academic Behavior as described below are applicable to this course.

AMERICANS WITH DISABILITIES ACT

CSUDH adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with temporary and permanent disabilities. If you have a disability that may adversely affect your work in this class, I encourage you to register with Disabled Student Services (DSS) and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: no accommodation can be made until you register with the DSS. For information call (310) 243-3660 or to use the Telecommunications Device for the Deaf, call (310) 243-2028 or go to: http://www4.csudh.edu/dss/

COMPUTER INFORMATION LITERACY EXPECTATIONS

It is expected that students will:

1 *Use Microsoft Word for word processing unless otherwise approved by the instructor,*
2 *Be familiar with using email as a communication tool and check your official campus email account at least every other day;*
3 *Be able to access websites and online course materials which may require Flash and other plug-ins;*
4 *Use the library databases to find articles, journals, books, databases and other materials;*
5 *Be able to create an effective PowerPoint presentation;*
6 *Be able to record audio (ideally video) to share with the instructor via the web; and*
7 *Have regular access to a computer and internet access for the term of this course.*

ACADEMIC INTEGRITY

Academic integrity is of central importance in this and every other course at CSUDH. You are obliged to consult the appropriate sections of the University Catalog and obey all rules and regulations imposed by the University relevant to its lawful missions, processes, and functions. ***All work turned in by a student for a grade must be the students' own work.*** Plagiarism and cheating (e.g. stealing or copying the work of others and turning it in as your own) will not be tolerated, and will be dealt with according to University policy. The consequences for being caught plagiarizing or cheating range from a minimum of a zero grade for the work you plagiarized or cheated on, to being dropped from the course.

BEHAVIORAL STANDARDS

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. The instructor may require a student responsible for disruptive behavior to leave class pending discussion and resolution of the problem and may also report a disruptive student to the Student Affairs Office (WH A-410, 310-243-3784) for disciplinary action.