IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Fall 2023**	Instructor Name:	**Octavio Ortiz**
Course Title & #:	**CS 221**	Email:	**octavio.ortiz@imperial.edu**
CRN #:	**10962**	Webpage (optional):	**Canvas Course**
Classroom:	**3109**	Office #:	**2767.1**
Class Dates:	**8/14 – 12/9**	Office Hours:	**Faculty Schedule**
Class Days:	**T/R**	Office Phone #:	**760-355-5706**
Class Times:	**2:40 – 4:05 PM**	Emergency Contact:	**Silvia Murray**
Units:	**3**	Class Format:	**Hybrid (In-Person/Online)**

Course Description

Introduction to programming and software engineering for computer science majors and computer professionals. A systematic approach to the design, implementation, and management of robust Java computer programs. Course emphasizes Object Oriented programming design, programming documentation, testing and debugging techniques. (C-ID COMP 122) (CSU/UC)

Course Prerequisite(s) and/or Corequisite(s)

None

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Correctly use classes from the standard Java libraries to solve a problem
2. Correctly use graphical user interface (GUI) components to create a program
3. Correctly use inheritance relations to solve a problem

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Analyze unstructured problems and design computer solutions
2. Use procedural techniques to control program flow (sequence, selection, and repetition) and declare local variables and pass parameters to functions.
3. Demonstrate object-oriented programming language syntax and structure
4. Define and use classes and methods to implement algorithms
5. Assess the applicability of common algorithms to specific program design problems
6. Develop and use beginning program testing data and techniques
7. Assess the applicability of common data structures to specific program design problems
8. Use system debuggers
9. Adhere to style and documentation standards in writing programs

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Textbooks & Other Resources or Links

Introduction to JAVA – Programming and Data Structures
Author: Y. Daniel Liang
Edition: 12th
ISBN: 978-0-13-652023-8
Copyright Year: 2020
Publisher: Pearson Prentice Hall

Course Requirements and Instructional Methods

Students will be exposed to various instructional methods. Lectures, both in person and through pre-recorded tutorial videos, will introduce students to fundamental programming concepts. Students will then apply what they learn in lectures to their own programming assignments and applications.

Programming assignments will be relatively short and will assess a student's mastery of a particular programming skill, as well as a student's ability to problem solve. Programming applications, or projects, will be more intricate. To develop an application, students will rely on the various programming and problem-solving skills they have developed up to that point.

There will be short quizzes where students will read code and answer multiple choice, true-false, and free-response questions pertaining to the code segments. A comprehensive semester final exam will assess students' ability to read, debug and rationalize code segments that range in complexity.

Course Grading Based on Course Objectives

ASSIGNMENT	POINTS
Programming Assignments	**15%**
Approximately 10-15 PA's	
Exams	**60%**
Three planned Exams	
Projects/Final Exam	**25%**
Midterm/Final project & comprehensive final	
Total	**100%**

Score	Letter Grade
≥ 90%	**A**
≥ 80%	**B**
≥ 70%	**C**
≥ 60%	**D**
< 60%	**F**

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Course Policies

Attendance:

Attendance is mandatory. Students are expected to attend every class meeting. Lectures will preview programming assignments, programming applications and future assessments.

- Although attendance is not explicitly factored into your grade, failing to complete programming assignments and assessments due to absences will negatively impact your grade.
- Students with excessive absences will be dropped from the course as outlined in AP 5075.

Late Submissions:

Programming assignments are to be completed and submitted by the due date stated on Canvas. Late programming assignments will be accepted and penalized as follows:

- 90% maximum score if submitted within 24 hours past due date
- 80% maximum score if submitted within 48 hours past due date
- 70% maximum score if submitted within 72 hours past due date
- 50% maximum score if more than three days and less than a week past due date
- No credit will be given to assignments that submitted past the hard deadline (see calendar)

Programming applications/projects, quizzes and the final exam will NOT be accepted late.

Make-up Assignments:

There are no make-up assignments.

- Programming applications/projects and quizzes cannot be made up, however, if the material is presented again in future applications or quizzes, then the failed assessment will be reevaluated.

Drop Policy

The instructor reserves the right to drop students who fail to attend the first-class session or fail to complete the first assignment by the assigned due date.

Other Course Information

Resources:

https://www.w3schools.com – Learn Programming

https://docs.oracle.com/en/java/index.html - Java Documentation

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit http://www.imperial.edu/studentresources or click the heart icon in Canvas.

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Anticipated Class Schedule/Calendar

The semester calendar is meant to provide an overview of the topics that will be covered throughout the semester. Every effort will be made to adhere to the calendar; however, changes might be necessary.

Week	Date	Topic	Assignment
Week 1	8/15	• **Syllabus & Course Policies** ○ Modules, programming assignments, etc…	
	8/17	• **Fundamentals** ○ Basic file structure in Java ○ Printing ○ Data types	
Week 2	8/22	• **Elementary Programming** ○ Data Types, String Objects ○ String Objects, User Input	
	8/24	• **Selection** ○ If-statements	
Week 3	8/29	• **Selection** ○ AND/OR, NOT, MOD operators	
	8/31	• **Strings & Mathematical Functions** ○ Common math functions • **Strings & Mathematical Functions** ○ String type and its methods	
Week 4	9/5	• **Chapter 1-4 Review**	
	9/7	• **Chapter 1-4 Review** • **Quiz 1 (Chapters 1-4)** ○ Deadline to submit late assignments (Ch.1-4) for 50% credit.	
Week 5	9/12	• **Repetition** ○ while loops, do-while loops, for loops	
	9/14	• **Repetition** ○ Implementing Loops	
Week 6	9/19	• **Repetition & Arrays** ○ 1-D arrays, for loops & arrays	
	9/21	• **Repetition & Arrays** ○ for-each loops & arrays	
Week 7	9/26	• **Encapsulation** ○ Functions & Methods, Parameters, Return type	
	9/28	• **Encapsulation** ○ Implementing Methods	
Week 8	10/3	**Midterm Project**	
	10/5	• **Quiz 2 (Chapters 5-7)** ○ Deadline to submit late assignments (Ch.5-7) for 50% credit.	
Week 9	10/10	• **Multidimensional Arrays**	

Week	Date	Topic	Assignment
		○ 2D array, nested for loops & 2-D arrays	
	10/12	• **Multidimensional Arrays** ○ Implementing 2D arrays	
Week 10	10/17	• **ArrayLists** ○ add(), remove(), get(), isEmpty()…	
	10/19	• **ArrayLists** ○ Implementing arraylists	
Week 11	10/24	• **Encapsulation & Class Design** ○ Fields, constructors, the this reference	
	10/26	• **Encapsulation & Class Design** ○ Accessor & Mutator Methods, toString() method	
Week 12	10/31	• **Class Design** ○ Class Instantiation, zero & multiple argument Constructor, overloading methods	
	11/2	• **Class Design** ○ Static vs. non-static methods & fields • **Quiz 3 (Chapters 8-10)** ○ Deadline to submit late assignments (Ch.8-10) for 50% credit.	
Week 13	11/7	• **Class Design** ○ Passing Object to Methods	
	11/9	• **Class Design** ○ Array of Objects ○ Writing your own classes	
Week 14	11/14	• **Inheritance** ○ extends keyword, superclasses & subclasses, super keyword, overriding and overloading methods	
	11/16	• **Inheritance** ○ Advantages of inheritance ○ Inheritance and JavaFX	
Thanksgiving Break			
Week 15	11/28	• **GUI** ○ JavaFX vs. Swing and AWT, JavaFX basic structure, Color class, Font class, Panes & Groups	
	11/30	• **GUI** ○ JavaFX vs. Swing and AWT, JavaFX basic structure, Color class, Font class, Panes & Groups • **Final Project**	
Week 16	12/5	• **GUI** ○ Implementing GUI's with JavaFX	
	12/7	• **Final Project Due** • **Comprehensive Final Exam**	

*****Subject to change without prior notice*****

IMPERIAL VALLEY COLLEGE

OCTAVIO ORTIZ

IVC Instructor's Schedule of Classes and Office Hours

Science, Math and Engineering Department

Fall 2023

		7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1PM	2:00 PM	3:00 PM	4:00 PM
M	COURSE		CS 221		ENGR 100			Office Hour			
	CRN		LEC/LAB 10521		LEC/LAB 10929			Online - Zoom			
	LEC/LAB		7:30 - 10:00 AM		10:15 - 12:45 PM			1:30 - 2:30 PM			
	FACULTY		RM #2724		RM #3119						
T	COURSE		Office Hour	ENGR 210		CS 281			CS 221 - Hybrid		
	CRN		In-Person	LEC 10603		LEC/LAB 10522			Lab/Lec 10962		
	LEC/LAB		8:30 - 9:30 AM	9:40 - 11:05 AM		11:30 - 2:10 PM			2:40 - 4:05 PM		
	FACULTY		RM #2767	RM #2721		RM #3109			Online - RM #3109		
W	COURSE		CS 221		ENGR 100			Office Hour			
	CRN		LEC/LAB 10521		LEC/LAB 10929			Online - Zoom			
	LEC/LAB		7:30 - 10:00 AM		10:15 - 12:45 PM			1:30 - 2:30 PM			
	FACULTY		RM #2724		RM #3119						
R	COURSE		Office Hour	ENGR 210		CS 281			CS 221 - Hybrid		
	CRN		In-Person	LEC 10603		LEC/LAB 10522			Lab/Lec 10962		
	LEC/LAB		8:30 - 9:30 AM	9:40 - 11:05 AM		11:30 - 2:10 PM			2:40 - 4:05 PM		
	FACULTY		RM #2767	RM #2721		RM #3109			Online - RM #3109		
F	COURSE										
	CRN										
	LEC/LAB										
	FACULTY										

Course No			Sections	Lec Hrs	Lab Hrs
CS 221			2	4	6
CS 281			1	2	3
ENGR 100			1	2	3
ENGR 210			1	3	0
Total				**11**	**12**

Instructor's Name	Octavio Ortiz
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