

CS 140: JAVA PROGRAMMING

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2021
Credits:	3
Total Contact Hours:	72
Lecture Hours :	54
Lab Hours:	18
Hours Arranged:	0
Outside of Class Hours:	108
Prerequisite:	CS 111.
Strongly Recommended:	MATH 150.
Transferable to CSU:	Yes
Transferable to UC:	Yes - Approved
Grading Method:	Standard Letter, Pass/No Pass

Catalog Course Description

An introduction to the Java language and object oriented programming. General concepts and techniques of computer programming to be covered include expressions, flow control, methods, program structure, Java classes, overloading, object references, inheritance, Java library packages, exceptions, file I/O, applets, GUI, and event handling. 54 lecture hours, 18 lab hours.

Course Objectives

- Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, and the definition of methods.
- Use pseudocode or a programming language to implement, test, and debug algorithms for solving simple problems.
- Summarize the evolution of programming languages illustrating how this history has led to the paradigms available today.
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- Demonstrate different forms of binding, visibility, scoping, and lifetime management.

Major Course Content

1. Basic syntax and semantics of a higher-level language
2. Variables, types, expressions and assignment
3. Simple I/O
4. Conditional and iterative control structures
5. Methods and parameter passing
6. Structured decomposition
7. Problem-solving strategies
8. The role of algorithms in the problem-solving process
9. Implementation strategies for algorithms
10. Debugging strategies
11. The concept and properties of algorithms
12. History of programming languages
13. Brief survey of programming paradigms

14. Procedural languages
15. The conception of types as a set of values together with a set of operations declaration models (binding, visibility, scope and lifetime)
16. Overview of type-checking
17. Arrays and Structures

Lab Content

1. Sequence
2. Logical flow of the program.
3. Flow charts
4. Pseudocode
5. Selection
6. if statement
7. switch statement
8. Repetition
9. while statement
10. for statement
11. do statement

Sequence

1. Logical flow of the program.
2. Flow charts
3. Pseudocode

Selection

1. if statement
2. switch statement

Repetition

1. while statement
2. for statement
3. do statement

Suggested Reading Other Than Required Textbook

The student will visit several programming online websites in order to read documentation about object oriented programming languages.

Examples of Required Writing Assignments

The student will create a flowchart and a pseudocode before implementing the programming code for any given assignment.

Examples of Outside Assignments

Students will be required to complete the following types of assignments outside of the regular class time:

- Study course concepts - Answer various programming questions - Practice skills (i.e., writing programs and creating flowcharts).
- Read required materials - Solve programming problems - Create programs that apply Object-Oriented programming techniques

Instruction Type(s)

Lecture, Lab, Online Education Lecture, Online Education Lab