CompuScholar, Inc.

Alignment to Florida **"Object-Oriented Programming Fundamentals"** Course Standards

Florida Course Details:

Course Name:	Object-Oriented Programming Fundamentals
Course Code(s):	9007230
Credit:	1
State Standards Link:	https://www.cpalms.org/PreviewCourseProgram/Preview/4260

CompuScholar Course Details:

Course Title:	Java Programming
Course ISBN:	978-1-946113-99-3
Course Year:	2025

Course Description (from CPALMS)

This course continues the study of computer programming concepts with a focus on the creation of software applications employing object-oriented programming techniques.

Course Standards

Note 1: Citation(s) listed may represent a subset of the instances where objectives are met throughout the course.

Note 2: Citation(s) for a "Lesson" refer to the "Lesson Text" elements and associated "Activities" within the course, unless otherwise noted. The "Instructional Video" components are supplements designed to introduce or re-enforce the main lesson concepts, and the Lesson Text contains full details.

Course Standards

CTE-IT.912.9007230.1 - Explain key concepts that distinguish object-oriented programming from procedural programming.	CITATION(S)
CTE-IT.912.9007230.1.1 - Demonstrate the understanding and use of classes, objects, attributes, and behaviors.	Chapters 5, 16, 17
CTE-IT.912.9007230.1.2 - Demonstrate the understanding and use of inheritance.	Chapter 30
CTE-IT.912.9007230.1.3 - Demonstrate the understanding and use of data encapsulation.	Chapter 17, Lesson 3
CTE-IT.912.9007230.1.4 - Demonstrate the understanding and use of polymorphism.	Chapter 31
CTE-IT.912.9007230.1.5 - Use predefined functions and parameters, classes, and methods to divide a complex problem into simpler parts by using the principle of abstraction to manage complexity (e.g., by using searching and sorting as abstractions).	Chapter 5, Lesson 3 Chapter 16, Lesson 1

CTE-IT.912.9007230.2 - Create a project plan for an object-oriented programming project that defines requirements, structural design,	CITATION(S)
CTE-IT.912.9007230.2.1 - Write a project plan for completion of a project that includes gathering program requirements, developing the program, and testing it.	Chapter 33 Supplemental Chapter 2, Lesson 1
CTE-IT.912.9007230.2.2 - Write a program requirements document that identifies business purpose, functional requirements, system requirements, and other common components of a requirements document.	Chapter 33 Supplemental Chapter 2, Lesson 1
CTE-IT.912.9007230.2.3 - Design an object-oriented program using standard design methodology.	Chapter 33 Supplemental Chapter 2, Lesson 1
CTE-IT.912.9007230.2.4 - Work with other team members to develop a project plan for a program.	Chapter 33 Supplemental Chapter 2, Lesson 1
CTE-IT.912.9007230.2.5 - Work with other team members to write a design document for a program with multiple functions and shared data.	Chapter 33 Supplemental Chapter 2, Lesson 1
CTE-IT.912.9007230.2.6 - Participate in design meetings that review program design documents for conformance to program requirements.	Chapter 33 Supplemental Chapter 2, Lesson 1
CTE-IT.912.9007230.2.7 - Estimate the time to develop a program or module.	Chapter 33 Supplemental Chapter 2, Lesson 1
CTE-IT.912.9007230.2.8 - Evaluate algorithms by their efficiency, correctness, and clarity (e.g., by analyzing and comparing execution times, testing with multiple inputs or data sets, and by debugging).	Chapters 12, 14, 39

CTE-IT.912.9007230.3 - Design, document, and create object-oriented computer programs.	CITATION(S)
CTE-IT.912.9007230.3.1 - Compare and contrast recursive functions to other iterative methods.	Chapter 27
CTE-IT.912.9007230.3.2 - Understand the implementation of character strings in the programming language.	Chapter 7, Lesson 1
CTE-IT.912.9007230.3.3 - Write programs that perform string processing (e.g., manipulating, comparing strings, concatenation).	Chapter 7
CTE-IT.912.9007230.3.4 - Write programs that implements user-defined data types.	Chapter 16
CTE-IT.912.9007230.3.5 - Decompose a problem by defining new functions and classes.	Chapters 16, 17, 18, 30, 31
CTE-IT.912.9007230.3.6 - Write object-oriented programs that implement inheritance.	Chapter 30
CTE-IT.912.9007230.3.7 - Write object-oriented programs that implement polymorphism.	Chapter 31
CTE-IT.912.9007230.3.8 - Develop class constructors.	Chapter 16, Lesson 4
CTE-IT.912.9007230.3.9 - Write programs that define and use program constants.	Chapter 3, Lesson 2 Chapter 18, Lesson 1

CTE-IT.912.9007230.3.10 - Write programs that perform error handling.	Chapter 11
CTE-IT.912.9007230.3.11 - Participate in program code review meetings to evaluate program code for validity, quality, performance, data integrity, and conformance to program design documents.	Chapters 12, 33
CTE-IT.912.9007230.3.12 - Describe the concept of parallel processing as a strategy to solve large problems.	N/A
CTE-IT.912.9007230.3.13 - Demonstrate concurrency by separating processes into threads of execution and dividing data into parallel streams.	N/A
CTE-IT.912.9007230.3.14 - Update a program module to implement enhancements or corrections and demonstrate appropriate documentation (internal and external) related to version control.	N/A
CTE-IT.912.9007230.3.15 - Write programs that are event-driven.	Chapters 36, 37
CTE-IT.912.9007230.3.16 - Write programs that perform file input and output (i.e., sequential and random-access file input/output).	Chapter 25
CTE-IT.912.9007230.3.17 - Explain the value of heuristic algorithms to approximate solutions for unmanageable problems (e.g., a heuristic solution to Towers of Hanoi).	N/A

CTE-IT.912.9007230.4 - Design a unit test plan for an object-oriented computer program, test and debug the program, and report the	CITATION(S)
CTE-IT.912.9007230.4.1 - Develop a test plan for an object-oriented program.	Chapter 33, Lesson 3
CTE-IT.912.9007230.4.2 - Write test plans for programs that perform file input and output.	Chapter 33, Lesson 3
CTE-IT.912.9007230.4.3 - Perform test and debug activities on object-oriented programs, including those written by someone else.	Chapter 33, Lesson 3
CTE-IT.912.9007230.4.4 - Perform test and debug activities on programs that perform file input and output and verify the correctness of output files.	Chapter 33, Lesson 3
CTE-IT.912.9007230.4.5 - Document the findings of testing in a test report.	Chapter 33, Lesson 3

CTE-IT.912.9007230.5 - Understand human-AI interaction.	CITATION(S)
CTE-IT.912.9007230.5.1 - Describe the unique features of computers embedded in mobile devices and vehicles.	N/A
CTE-IT.912.9007230.5.2 - Describe the common physical and cognitive challenges faced by users when learning to use software and hardware.	N/A
CTE-IT.912.9007230.5.3 - Describe the process of designing software to support specialized forms of human-computer interaction.	N/A
CTE-IT.912.9007230.5.4 - Explain the notion of intelligent behavior through computer modeling and robotics.	Supplemental Chapter 3, Lesson 3

CTE-IT.912.9007230.5.5 - Describe common measurements of machine intelligence (e.g., Turing test).	N/A
CTE-IT.912.9007230.5.6 - Describe a few of the major branches of artificial intelligence (e.g., expert systems, natural language processing, machine perception, machine learning).	Supplemental Chapter 3, Lesson 3
CTE-IT.912.9007230.5.7 - Describe major applications of artificial intelligence and robotics, including, but not limited to, the medical, space, and automotive fields.	Supplemental Chapter 3, Lesson 3