CompuScholar, Inc.

Alignment to
"*Oracle Java Foundations* "
Certification Exam Requirements

Oracle Exam Details:

Exam Title:	Java Foundations
Exam Code(s):	1Z0-811
Exam Link:	Java Foundations

CompuScholar Course Details:

Course Title:	Java Programming
Course ISBN:	978-1-946113-99-3
Course Year:	2023

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 reinforce the main lesson concepts, and the Lesson Text contains full details.

Course Description

The Oracle Java Foundations exam is targeted at high school students who would like to demonstrate mastery of fundamental Java language skills. Preparation for this exam can generally be accomplished within a single school year.

Exam Requirements

What Is Java?	CITATION(S)
Describe the features of Java	Chapter 2, Lessons 1, 2
Describe the real-world applications of Java	Chapter 2, Lesson 1

Java Basics	CITATION(S)
Describe the Java Development Kit (JDK) and the Java Runtime Environment (JRE)	Chapter 2, Lesson 2
Describe the components of object-oriented programming	Chapters 5, 14, 15
Describe the components of a basic Java program	Chapter 2, Lesson 3
Compile and execute a Java program	Chapter 2, Lessons 2, 3 Chapter 28, Lesson 3

Basic Java Elements	CITATION(S)
Identify the conventions to be followed in a Java program	Chapter 2, Lesson 3 Chapter 3, Lesson 2
Use Java reserved words	Java keywords are introduced and used throughout the course
Use single-line and multi-line comments in Java programs	Chapter 2, Lesson 3
Import other Java packages to make them accessible in your code	Chapter 5, Lessons 1, 6 Chapter 14, Lesson 2
Describe the java.lang package	Chapter 14, Lesson 2

Working with Java Data Types	CITATION(S)
Declare and initialize variables including a variable using final	Chapter 3, Lesson 2
Cast a value from one data type to another including automatic and manual promotion	Chapter 4, Lesson 3
Declare and initialize a String variable	Chapter 5, Lesson 2 Chapter 6

Working with Java Operators	CITATION(S)
Use basic arithmetic operators to manipulate data including +, -, *, /, and %	Chapter 4, Lesson 1
Use the increment and decrement operators	Chapter 4, Lesson 2
Use relational operators including ==, !=, >, >=, <, and <=	Chapter 8, Lessons 1, 2
Use arithmetic assignment operators	Chapter 4, Lesson 1
Use conditional operators including &&, ||, and ?	Chapter 9, Lesson 2
Describe the operator precedence and use of parenthesis	Chapter 9, Lesson 2

Working with the String Class	CITATION(S)
Develop code that uses methods from the String class	Chapter 6, Lessons 2, 3
Format Strings using escape sequences including %d, %n, and %s	Chapter 3, Lesson 3

Working with the Random and Math Classes	CITATION(S)
Use the Random class	Chapter 7, Lesson 3
Use the Math class	Chapter 7, Lesson 3

Using Decision Statements	CITATION(S)
Use the decision making statement (if-then and if-then-else)	Chapter 8, Lessons 2, 3
Use the switch statement	Chapter 8, Lesson 4
Compare how == differs between primitives and objects	Chapter 6, Lesson 1 Chapter 9, Lesson 1 Chapter 23, Lesson 4
Compare two String objects by using the compareTo and equals methods	Chapter 6, Lesson 1 Chapter 9, Lesson 1 Chapter 23, Lesson 4

Using Looping Statements	CITATION(S)
Describe looping statements	Chapter 12, Lessons 1, 2
Use a for loop including an enhanced for loop	Chapter 12, Lesson 1 Chapter 18, Lesson 3
Use a while loop	Chapter 12, Lesson 2
Use a do- while loop	Chapter 12, Lesson 2
Compare and contrast the for, while, and do-while loops	Chapter 12, Lesson 2
Develop code that uses break and continue statements	Chapter 12, Lesson 3

Debugging and Exception Handling	CITATION(S)
Identify syntax and logic errors	Chapter 10, Lesson 1
Use exception handling	Chapter 10, Lesson 2
Handle common exceptions thrown	Chapter 10, Lessons 2, 3
Use try and catch blocks	Chapter 10, Lessons 2, 3

Arrays and ArrayLists	CITATION(S)
Use a one-dimensional array	Chapter 18
Create and manipulate an ArrayList	Chapter 19
Traverse the elements of an ArrayList by using iterators and loops including the enhanced for loop	Chapter 19, Lesson 3
Compare an array and an ArrayList	Chapter 19, Lesson 2

Classes and Constructors	CITATION(S)
Create a new class including a main method	Chapter 5, Lesson 1 Chapter 14
Use the private modifier	Chapter 14
Describe the relationship between an object and its members	Chapter 14, Lesson 3

Describe the difference between a class variable, an instance variable, and a local variable	Chapter 15, Lesson 2
Develop code that creates an object's default constructor and modifies the object's fields	Chapter 14, Lesson 4
Use constructors with and without parameters	Chapter 14, Lesson 4
Develop code that overloads constructors	Chapter 14, Lesson 4 Chapter 15, Lesson 4

Java Methods	CITATION(S)
Describe and create a method	Chapter 14, Lesson 5
Create and use accessor and mutator methods	Chapter 14, Lesson 3 Chapter 15, Lesson 3
Create overloaded methods	Chapter 15, Lesson 4
Describe a static method and demonstrate its use within a program	Chapter 5, Lesson 5 Chapter 16