

CompuScholar, Inc.
Alignment to
"Certiport IT Specialist (Java)"
Certification Exam Requirements

Certiport Exam Details:

Exam Title:	IT Specialist (Java)
Exam Link:	IT Specialist Certification (Java)

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.

Exam Description (From the Exam Link)

Candidates for this exam are application developers working with Java 6 SE or later, secondary and immediate-post-secondary students of software development, or entry-level software developers.

Candidates should have at least 150 hours of instruction or hands-on experience with Java, be familiar with its features and capabilities, and understand how to write, debug and maintain well-formed, well-documented Java code.

Exam Requirements

1. Java Fundamentals	CITATION(S)
1.1 Describe the use of main in a Java application	
• Signature of main	Chapter 2, Lesson 3
• How to consume an instance of your own class	Chapter 14, Lesson 3
• Command-line arguments	N/A

1.2 Perform basic input and output using standard packages	
• Print statements	Chapter 2, Lesson 3 Chapter 3, Lesson 3
• Import and use the Scanner class	Chapter 5, Lesson 6
1.3 Evaluate the scope of a variable	
• Declare a variable within a block, class, or method	Chapter 3, Lesson 2 Chapter 15, Lesson 2
1.4 Comment and document programs	
• Evaluate the syntax of Javadocs, write syntactically correct code comments	Supplemental Chapter 1, Lesson 2

2. Data Types, Variables, and Expressions	CITATION(S)
2.1 Declare and use primitive data type variables	
• Data types, including byte, char, int, double, short, long, float, Boolean	Chapter 3, Lesson 1
• Identify when precision is lost	Chapter 4, Lesson 3
• Initialization	Chapter 3, Lesson 2
• How primitives differ from wrapper object types such as Integer and Boolean	Chapter 3, Lesson 1 Chapter 7, Lesson 1
2.2 Construct and evaluate code that manipulates strings	
• String class and string literals	Chapter 5, Lesson 2
• Comparisons	Chapter 6, Lesson 1
• Concatenation	Chapter 5, Lesson 2
• Case, and length	Chapter 6, Lessons 1, 2
• String.format methods	Chapter 6, Lesson 3
• String operators	Chapter 5, Lesson 2
• The immutable nature of strings	Chapter 6, Lesson 2
• Initialization	Chapter 5, Lesson 2
• Null	Chapter 5, Lesson 2
2.3 Construct and evaluate code that creates, iterates, and manipulates arrays and array lists	
• One- and two-dimensional arrays, including initialization, null, size, iterating elements, accessing elements	Chapters 18, 21

• Array lists, including adding and removing elements, traversing the list	Chapter 19
2.4 Construct and evaluate code that performs parsing, casting, and conversion	
• Cast between primitive data types	Chapter 4, Lesson 3
• Convert primitive types to equivalent object types	Chapter 7, Lesson 1
• Parse strings to numbers	Chapter 7, Lesson 1
• Convert primitive data types to strings	Chapter 7, Lesson 1
2.5 Construct and evaluate arithmetic expressions	
• Arithmetic operators, assignment	Chapter 4, Lesson 1
• Compound assignment operators	Chapter 4, Lesson 2
• Operator precedence	Chapter 4, Lesson 1

3. Flow Control Implementation	CITATION(S)
3.1 Construct and evaluate code that uses branching statements	
• if	Chapter 8, Lesson 2
• else, else if	Chapter 8, Lesson 3
• switch	Chapter 8, Lesson 4
• single-line vs. block	Chapter 8, Lesson 2
• nesting	Chapter 8, Lesson 3
• logical and relational operators	Chapter 8, Lesson 1
3.2 Construct and evaluate code that uses loops	
• while	Chapter 12, Lesson 2
• for	Chapter 12, Lesson 1
• for each	Chapter 18, Lesson 3
• do while	Chapter 12, Lesson 2
• break and continue	Chapter 12, Lesson 3

• nesting	Chapter 12, Lesson 4
• logical, relational, and unary operators	Chapter 4, Lesson 2 Chapter 8, Lesson 1 Chapter 9, Lesson 2

4. Object-Oriented Programming	CITATION(S)
4.1 Construct and evaluate class definitions	
• Constructors, constructor overloading	Chapter 5, Lessons 4, 5 Chapter 14, Lesson 4
• One class per .java file	Chapter 2, Lesson 3 Chapter 14, Lesson 2
• this keyword	Chapter 16, Lesson 3
• Basic inheritance and overriding	Chapter 22
4.2 Declare, implement, and access data members in classes	
• private, public, protected	Chapter 14, Lessons 1, 3 Chapter 15, Lesson 3 Chapter 22, Lesson 1
• Instance data members	Chapter 5, Lesson 4 Chapter 14, Lesson 3
• static data members	Chapter 16, Lesson 1
• Use static final to create constants	Chapter 16, Lesson 1
• Describe encapsulation	Chapter 15, Lesson 3
4.3 Declare, implement, and access methods	
• private, public, protected	Chapter 14, Lesson 5 Chapter 22, Lesson 1
• Method parameters	Chapter 5, Lesson 3 Chapter 14, Lesson 5
• Return type; void; return value;	Chapter 5, Lesson 3 Chapter 14, Lesson 5
• Instance methods	Chapter 5, Lesson 3 Chapter 14, Lesson 5
• static methods	Chapter 5, Lesson 5 Chapter 16, Lesson 2
• overloading	Chapter 5, Lesson 5 Chapter 14, Lesson 4
4.4 Instantiate and use class objects in programs	
• Instantiation, initialization, null	Chapter 5, Lessons 2, 4

• Access and modify data members, access methods	Chapter 5, Lessons 3, 4 Chapter 14, Lesson 3 Chapter 15, Lesson 3
• Access and modify static members	Chapter 5, Lesson 5 Chapter 16, Lessons 1, 2
• Import packages and classes	Chapter 5, Lesson 6 Chapter 14, Lesson 2

5. Code Compilation and Debugging	CITATION(S)
5.1 Troubleshoot syntax errors, logic errors, and runtime errors	
• Print statement	Chapter 11, Lesson 1
• javac command output	Chapter 28, Lesson 3
• Logic errors, console exceptions, stack trace evaluation	Chapter 10, Lesson 1 Chapter 11, Lesson 1
5.2 Implement exception handling	
• try, catch, finally	Chapter 10, Lesson 2
• Exception class; exception class types	Chapter 10, Lessons 1, 2
• Display exception information	Chapter 10, Lesson 1 Chapter 11, Lesson 1