

Java SE 8

1Z0-808 OR 1Z0-809

Course Syllabus

26.50 Hours

Course Description

Java is one of the most widely used development language in the world today. This certification provides an entry into application development or software project management using Java technologies. It validates basic knowledge of OO concepts, the Java programming language and general knowledge of Java platforms and technologies. It explores the significance of object-oriented programming, the keywords and constructs of the Java programming language and the steps required to create simple Java technology programs. This course covers the objectives for the certification exam:

- **Java SE 8 Programmer I: 1Z0-808**
OR
- **Java SE 8 Programmer II: 1Z0-809** (if already SE 8 Programmer I certified)

Learning Objectives

Upon completion of the course, students will understand:

- Defining a class, identifying class components, using a main method, and testing and executing a simple Java program, In addition, this course covers identifying the uses of variables and defining a variable's syntax, and how to work with mathematical operators, basic decision constructs and basic arrays
- Working with methods as well as how to apply access control levels to classes and methods, implementation of field encapsulation, and how to overload constructors,
- Relational and conditional operators, configuring complex if/else constructs, and use switch statements
- The uses of variables and defining a variable's syntax, primitive data types, declaring, initializing, and using variables and constants, modifying variable values by using operators, and using promotion and type casting
- Relational and conditional operators, creating if and if/else constructs, chaining an if/else statement, and using a switch statement
- Working with dates, processing the args array and two-dimensional arrays as well as using the ArrayList class, as well as inheritance in Java classes, including superclasses, subclasses and abstract classes
- Lambda operations with the Stream application program interface or API, using map and peek, as well as search and data related methods of the Stream API
- The advantages of localizing an application, defining locales, building a resource bundle for each locale, calling a resource bundle from an application, changing the locale for a resource bundle, and formatting text for localization by using NumberFormat and DateFormat
- Auto closing resources with a try-with-resources statement, common exception classes and categories, creating custom exceptions, and testing invariants by using assertions
- Best practices for writing and documenting source codes, including variable naming, working with methods, classes, and object-oriented principles
- How to optimize existing code through refactoring, as well as how to perform code inspections to locate defects and how to debug existing code to eliminate potential errors not yet discovered

Course Format

Java SE 8 is a self-paced, online course delivered through the learning management system Skillssoft. The site to access the coursework is su.skillport.com. Login credentials will be provided to you on the cohort launch date. If you do not receive them by the launch date, please check your Spam/Junk folder of your email and/or contact your

advisor or O2O program coordinator. Once you have logged into your account, you can locate the coursework by selecting “View My Learning Plan.”

Coursework is delivered through videos, tutorials, and tests. No textbooks are required for the course; however, students are encouraged to utilize additional resources to assist with certification preparation. Resource Guides with lists of supplemental study materials for each certification are available at <http://libguide.get-vet.syr.edu/curriculum/>.

Course Completion Requirements

Java SE 8 coursework is due within 90 days from the assignment date. The course hours listed at the top of the syllabus reflect the time it would take to click through the slides and do not account for taking notes or the end of module tests. You must complete all five modules in Topic 1, all five modules in Topic 2, and all four modules in Topic 3. Successful completion of a module is marked after you review the lesson videos and score 80% or higher on the end of module tests.

At the beginning of a module, you will be asked to take a pre-test. Scoring 80% or higher on the pre-test signifies competence in the information that will be covered; you will therefore be waived from completing the module. A non-credit certificate of completion will be awarded for successful completion of the coursework.

Industry Certification Requirements

In order for the program to fund your Java SE 8 certification exam you will need to meet the Java SE 8 practice exam requirements. Your advisor or O2O program coordinator will provide you with access to the practice exam as well as completion instructions once you have finished the coursework.

Support

- For technical support, please contact Skillsoft Support at support.skillsoft.com
- For course content support, please utilize Skillsoft’s “Ask My Mentor” tool, located in the left-hand Menu within the module course player
- For program support or questions, please contact your advisor or O2O program coordinator

Course Outline

Topic 1: Introduction to Java Basics

- 1.1 Java SE 8 Fundamentals: Introduction to Java
- 1.2 Java SE 8 Fundamentals: Classes and Objects
- 1.3 Java SE 8 Fundamentals: Methods, Encapsulation, and Conditionals
- 1.4 Java SE 8 Fundamentals: Data Manipulation and Inheritance
- 1.5 Java SE 8 Fundamentals: Interfaces, Exceptions, and Deployment

Topic 2: Java SE 8 Programming Fundamentals

- 2.1 Java SE 8 Programming: Encapsulation, Polymorphism, and Abstraction
- 2.2 Java SE 8 Programming: Interfaces, Lambda Expressions, Collections, and Generics
- 2.3 Java SE 8 Programming: Inheritance, Interfaces, Exceptions, and Deployment
- 2.4 Java SE 8 Programming: Date/Time API, I/O and File I/O (NIO.2), and Concurrency
- 2.5 Java SE 8 Programming: Concurrency, Parallelism, the JDBC API, and Localization

Topic 3: Software Programming Fundamentals

- 3.1 Design and Development Best Practices
- 3.2 Source Coding Best Practices
- 3.3 Software Security Best Practices
- 3.4 Best Practices for Maintaining Code