Java Basics

Define the scope of variables	CSA Unit 1.2
Define the structure of a Java class	CSA Unit 2.5
Create executable Java applications with a main method; run a Java program from the command line; produce console output	CSA Unit 1.1, 3.7
Import other Java packages to make them accessible in your code	CSA Unit 1.2
Compare and contrast the features and components of Java such as: platform independence, object orientation, encapsulation, etc.	CSA Unit 1.1

Working With Java Data Types

Declare and initialize variables (including casting of primitive data types)	CSA Unit 1.1
Differentiate between object reference variables and primitive variables	CSA Unit 1.1, 2.2
Know how to read or write to object fields	CSA Unit 1.2
Explain an Object's Lifecycle (creation, "dereference by reassignment" and garbage collection)	Java Certification Topic 7
Develop code that uses wrapper classes such as Boolean, Double, and Integer	CSA Unit 1.2

Using Operators and Decision Constructs

Use Java operators; use parentheses to override operator precedence	CSA Unit 1.1
Test equality between Strings and other objects using == and equals () Know how to read or write to object fields	CSA Unit 1.3
Create if and if/else and ternary constructs	CSA Unit 1.3
Use a switch statement	Java Certification Topic 2

Creating and Using Arrays

Declare, instantiate, initialize and use a one-dimensional array	CSA Unit 3.6
Declare, instantiate, initialize and use multi-dimensional arrays	CSA Unit 3.8

Using Loop Constructs

Create and use while loops	CSA Unit 2.4
Create and use for loops including the enhanced for loop	CSA Unit 3.6
Create and use do/while loops	Java Certification Topic 1
Compare loop constructs	CSA Unit 2.4 Java Certification Topic 1
Use break and continue	Java Certification Topic 1

Working with Methods and Encapsulation

Create methods with arguments and return values; including overloaded methods	CSA Unit 1.2
Apply the static keyword to methods and fields	CSA Unit 1.2
Create and overload constructors; differentiate between default and user defined constructors	CSA Unit 2.5
Apply access modifiers	CSA Unit 2.5
Apply encapsulation principles to a class	CSA Unit 2.5
Determine the effect upon object references and primitive values when they are passed into methods that change the values	CSA Unit 1.2, 2.5

Working with Inheritance

Describe inheritance and its benefits	CSA Unit 4.9
Develop code that makes use of polymorphism; develop code that overrides methods; differentiate between the type of a reference and the type of an object	CSA Unit 4.9 Java Certification Topic 8
Determine when casting is necessary	Java Certification Topic 8
Use super and this to access objects and constructors	CSA Unit 2.5, 4.9
Use abstract classes and interfaces	Java Certification Topic 7, 8

Handling Exceptions

Differentiate among checked exceptions, unchecked exceptions, and Errors	Java Certification Topic 6
Create a try-catch block and determine how exceptions alter normal program flow	Java Certification Topic 6
Describe the advantages of Exception handling	Java Certification Topic 6
Create and invoke a method that throws an exception	Java Certification Topic 6
Recognize common exception classes (such as NullPointerException, ArithmeticException, ArrayIndexOutOfBoundsException, ClassCastException)	CSA Unit 1.1, 1.2, 2.4, 3.7

Working with Selected classes from the Java API

Manipulate data using the StringBuilder class and its methods	Java Certification Topic 3
Create and manipulate Strings	CSA Unit 1.2
Create and manipulate calendar data using classes from java.time. LocalDateTime, java.time.LocalDate, java.time.LocalTime, java.time. format.DateTimeFormatter, java.time.Period	Java Certification Topic 4
Declare and use an ArrayList of a given type	CSA Unit 3.7
Write a simple Lambda expression that consumes a Lambda Predicate expression	Java Certification Topic 5