

# Temario Academia Java 8 APX

## Semana 1

### Lunes

- Java class structure
- Package declarations and imports
- Creating objects

### Martes

- Primitive types vs. reference types
- Variable declaration, initialization, and scope
- Garbage collection

### Miércoles

- Java operators (arithmetic, unary, assignment, relational, logical)

### Jueves

- Control flow statements (if-then, if-then-else, switch)
- Iteration statements (while, do-while, for)

### Viernes

- Advanced flow control (break, continue, labels)
- String manipulation

## Semana 2

### Lunes

- StringBuilder and StringBuffer
- Java arrays and ArrayList

### Martes

- Wrapper classes and autoboxing
- Working with dates and times

### Miércoles

- Method design and overloading
- Access modifiers
- Static methods and fields

### Jueves

- Passing data among methods
- Constructors
- Encapsulation and immutability

### Viernes

- Inheritance
- Abstract classes
- Interfaces

## Semana 3

### Lunes

- Polymorphism
- Casting objects
- Exception types

### Martes

- Try-catch-finally blocks
- Throwing and handling exceptions

- Creating nested classes (inner classes, **anonymous classes**, static nested classes)

### **Miércoles**

- Coding equals(), hashCode(), and toString()

### **- Working with Enums**

### **- Using instanceof**

### **Jueves**

### **- Designing interfaces and functional interfaces**

- Understanding design principles (JavaBeans, is-a and has-a relationships)

### **Viernes**

- Working with design patterns (**Singleton**, Immutable Objects, Builder, Factory)
- **Dependency Injection**

## **Semana 4**

### **Lunes**

- Advanced use of collections
- **Working with generics (classes, interfaces, methods)**

### **Martes**

- Using Lists, Sets, Maps, and Queues
- Comparing collection types
- Comparator vs. Comparable

### **Miércoles**

- Advanced use of lambdas
- Working with built-in functional interfaces
- Using Optional

### **Jueves**

- Working with Streams (creating, terminal operations, intermediate operations)
- Working with primitive streams
- Advanced stream pipeline concepts

### **Viernes**

- Using multi-catch and try-with-resources
- Creating custom exceptions
- Working with assertions
- Introducing threads and concurrency
- Creating and managing threads
- Using ExecutorService

## **Semana 5**

### **Lunes**

- JUnit
- Mockito

### **Martes**

- Spring Core

### **Miércoles**

- Spring MVC

### **Jueves**

- Spring Rest

### **Viernes**

- Spring Data JPA

## **Semana 6**

### **Lunes**

- Spring Batch
- Git (Command Line and GUI Tool)

### **Martes**

- Maven
- Relational Database

### **Miércoles**

- MongoDB
- Understanding HTTP/HTTPS protocols

### **Jueves**

- HTTP verbs (POST, PUT, GET, DELETE, PATCH)
- Response codes

### **Viernes**

- REST vs SOAP: differences and advantages
- Creating RESTful services with Java