



AIM CODE SCHOOL JAVA

SPECIALIZATION

JAVA SPECIALIZATION SYLLABUS

Course description

Love that ultimate control? In this 14-week course you'll learn the programming language that's relied upon by corporations of all shapes and sizes.

By the end of the course you'll design and implement a fully functional web application using an Integrated Development Environment (IDE) and implement web pages using HTML5 and CSS3. You'll code business ready programs, intelligently designed forms, and interactive, dynamic web pages using JavaScript and jQuery. Finally, you'll learn how to connect the client to the server by using AJAX to retrieve data.

Participant Profile

This course is open to individuals with 6 months of front-end web development experience and/or graduates of an Interface School Foundations course who want to build the skills to begin a career as a web application developer. An assessment is required to be accepted into this course.

Outlined below are the units for this 14-week course. Keep in mind that we do not expect you to know the different terms, languages, or technical words that are included in the units. We'll teach you it all with slides, lectures, code assignments, and hands-on instruction!

Unit 1

Course Overview and Introductions

In this section students will get to know the instructor, get acclimated with the IDE and tools this course will cover, and go over the pre course assignment that was sent out prior to class starting. Students are encouraged to ask questions, get any last minute preparations ready, and get comfortable before the next unit starts.

What students will learn:

- Make introductions
- Software installation and configuration
- Go over course requirements
- Review the pre course assignment

Unit 2

Beginner Java Programming

Starting slow and building momentum, students will learn about the basics of Java learning about basic programming such as how to work with numbers, strings, variables, and add logic to control the flow and decision making of our program

What students will learn:

- Primitives
- Variables
- Assignment Operators
- Conditional Statements
- Loops

Unit 3

Advanced Java

Moving into our next Unit students will learn how to create and use classes, create and manipulate objects, build constructors to pass arguments, use collections and arrays, and much more to build a solid foundational understanding of Object Oriented Programming.

What students will learn:

- Define and use Classes
- Constructors
- Encapsulation
- Methods
- Inheritance
- Polymorphism
- Interfaces
- Arrays
- Collections & Generics
- Exception Handling

Unit 4

Forms with Java

Java not only can create console-based programs but also be utilized in the real world creating Graphical User Interfaces or GUI's for short. In this Unit students will learn how to design and test Java GUI applications using Java Swing and JavaFX.

What students will learn:

- Basic form building
- Form design
- Event Handling
- Testing and debugging

Unit 5

Databases

All data has to be stored somewhere. In this Unit, students will learn about how data is stored, and get a better understanding of how to create, read, update, and delete data within a Relational Database Management System. Students will learn how to manipulate data through selective queries, learn about joins, primary keys and foreign key relationships, and how to build a RDBMS in the cloud. Students will also get an introduction to other database alternatives known as NoSQL or “Not only SQL”.

What students will learn:

- NoSQL
- MySQL

Unit 6

Java Script Review

Before students learn about Java Web, it's important to review what we will need for our Java web unit. Students will get an introduction to git and its tools, review core JavaScript concepts, the use of closures and scope, algorithms in JavaScript, learn how to setup a server using cloud services, and build a Constant Integration/Constant Deployment pipeline to remove guesswork for deployments to servers.

What students will learn:

- Introduction To Git
- JavaScript Review
- Closures & Scope
- AJAX
- Algorithms in JavaScript
- Server Management
- CI/CD Pipelines

Unit 7

Java Web

Students will learn about how to create and use Servlets that isolate the application/business layer from the persistence layer (usually a relational database, but it could be any other persistence mechanism) using an abstract API (Application Programming Interface).

The functionality of this API is to hide from the application all the complexities involved in performing CRUD operations in the underlying storage mechanism. This permits both layers to evolve separately without knowing anything about each other. Students will get a deep knowledge of Java web by building websites using a Java backend.

What students will learn:

- Data Access Objects
- Servlets
- POJOs
- Deployment
- Debugging
- Intro to Spring Framework

Unit 8

Capstone Project

In the final weeks of this course students will work collaboratively by creating three capstone projects. From concept, to design, to creation, to deployment students will be building projects that will not only be practical in the real world, but will also put the knowledge and skills they acquired over the course to test and debug their applications in a mock business/client environment using common development tactics to deliver a working product to a client.

What students will build:

- Build a console-based application
- Build a form-based application
- Build a web-based application

Commonly asked Questions

Why should you enroll in this course?

Java is commonly used by many employers in the Midwest. This course provides you with all the information and training you need to start a career as a Java developer by providing practical knowledge and experience for real-world situations. You'll work with Java to build programs, forms, and Web Applications from the front-end, to the server by creating web pages, to working with databases, and everything in between.

You'll walk away from this course versatile enough to not only write code, build applications, and test and deploy those applications, but also gain critical skills required to be an effective team junior member and full-stack developer.

Should I come equipped with anything?

System requirements: Laptop should be 3 years old or newer and have 2 GB of RAM (8GB or more recommended) as well as 2.5 GB available hard-disk space for installation; additional free space required during installation (cannot install on a volume that uses a case-sensitive file system or on removable flash storage devices). Wireless internet access will be provided by AIM and a free year of AWS or Azure cloud services will be provided by AIM for homework assignments and to have a working portfolio for demonstration purposes when students graduate and are ready for the job market.

Where do I sign up?

Are you ready to change your career path and learn an incredibly valued skill set? [Apply](#) today. There's no risk in applying! After your application has been received, you'll be sent an online, non-technical assessment to gauge your problem-solving skills.