Java Developer Certificate Syllabus

Back-End Coding: Java and Job Readiness

Hello, and welcome!

The first thing you might notice when visiting a website or application is its aesthetic and layout. But as you begin to navigate, you'll quickly discover if it's performing as it should or if it leaves you feeling frustrated. The purpose of back-end web development is to ensure that a website or application operates efficiently beyond the appealing graphics and design. This is crucial for creating web applications that users can rely on and trust. In this certificate, you will explore Java programming for beginners. You will also work toward mastering algorithms and data structures in Java. With the skills gained in this certificate, you can continue your web development journey with confidence!

We invite you to take a minute to learn about the certificate by reviewing the information that follows. This way, you will be better able to understand the expectations of the certificate as a whole. Then you can determine how to manage your time and efforts as you navigate through it.

You are in the right place. You belong here. You can do this!

Certificate Description and Competencies

WHAT TO EXPECT

In this certificate, you will work through four CodeSignal learning paths. And each learning path is broken into multiple courses, covering multiple learning objectives. These will teach you the skills needed to develop seamless and accessible websites for any organization.

Throughout these courses, you will find readings, videos, and a variety of interactive elements in the CodeSignal learning platform. These include practices and interactions with an AI tutor to help deepen your understanding of the content. Engaging with these activities reinforces new learning. It also complements the knowledge you bring to this area of study.

This course covers the following competencies:

1. The student chooses and applies optimal algorithms and data structures for a variety of problems.
2. The student applies stacks, queues, and linked lists to solve algorithmic coding challenges.
3. The student addresses data analysis and management challenges using Hashing, HashMaps, and HashSets.
4. The student identifies and resolves coding errors in Java.
5. The student creates and implements object-oriented programming frameworks.

Assessment

The assessment provides an opportunity to demonstrate your mastery of the competencies in this certificate. You may attempt the assessment two times before additional support is necessary. If you require further attempts, please contact your Course Instructor or Student Experience Specialist.

♦ **3** quizzes   ♦ **1** General Coding Certified Assessment   ♦ **9** competency units

Certificate Outline

CodeSignal Learning Paths	Upon completion of this learning path, you will:
Java Programming for Beginners	**A.** Develop foundational skills in general programming and algorithms. **B.** Build a solid understanding of computer science fundamentals.
Algorithms and Data Structures in Java	**A.** Enhance your intermediate skills in general programming and algorithms. **B.** Build an intermediate understanding of computer science fundamentals.
Coding Interview Preparation with Java	**A.** Leverage Java to write programs and solve problems. **B.** Improve your ability to implement algorithms and data structures in Java. **C.** Gain an intermediate level of skill in general programming and algorithms. **D.** Improve competency in requirement understanding and implementation.
Advanced Coding Interview Preparation with Java	**A.** Create, manipulate, and traverse multidimensional arrays in Java using proper indexing, loops, and control flow. **B.** Use Java HashMaps to store, access, and manage key-value data efficiently while understanding hash functions and time complexity. **C.** Parse and analyze structured log data using string operations, timestamp conversion, and data structures for meaningful insights. **D.** Apply data processing and aggregation techniques in Java to calculate and present group performance metrics. **E.** Implement efficient Java algorithms with HashMaps and lists to solve complex problems and optimize performance.

Technology Requirements

We want to be sure you have the tools to succeed! Review the Computer System and Technology Requirements to learn about the technology you'll need. If you have questions about your setup, contact support@academy.wgu.edu.

You will need Adobe Acrobat Reader DC. If you haven't already, download this free software. You may encounter an interactive form that contains fields that you can select or fill in. Review how to fill in a PDF form.

Key Contacts

Certificate Connect
(if you are enrolled in the Back-End Coding Certificate)

Check out this online community to take advantage of course resources, including videos and tips from your educators. You can ask and answer questions, provide feedback on your progress, and interact with fellow students. You will find this platform in the Student Resources section of the course. Log on and do some exploring!

Tutor.com

If you need academic support, don't hesitate to contact Tutor.com. There, you have access to thousands of tutors. And they are available 24/7 from any internet-ready device. You can also benefit from instructional videos, study tools, and other assistance.

Technical Support

If you encounter technical issues, be sure to contact the Help Desk. Just submit a Support Request for assistance.

Program Support

Do you have questions about your account? Student Support has answers. They can help with billing, switching courses, and other requests. You can contact them at (888) 320-0540 or support@academy.wgu.edu.

Accommodations

WGU provides compliant and accessible learning experiences. If you require accommodation, please contact us at the start of the course. You can email support@academy.wgu.edu or call (888) 320-0540. We are committed to ensuring that all students with disabilities have equal access to WGU's services and materials. We strive to use best practices for accessibility. Our goal is to conform to existing U.S. laws. These include the Americans with Disabilities Act and Section 504 and Section 508 of the Rehabilitation Act. Our learning management system (LMS) platform is Open edX. Open edX's commitment to accessible content is published on their Website Accessibility Policy.