Hello, and welcome!

When you visit a website or use an app, you may be drawn in by the appealing graphics. However, if nothing performs well, you may get discouraged and leave. No one wants that to happen! The role of back-end programming is to ensure that the software works as it should. In this course, you will be introduced to creating back-end components of a web application with the support of framework packages. You will learn to implement database functionality and create web services. By gaining these skills, you can help produce web applications that users rely on and trust.

We invite you to take a minute to learn about the course by reviewing the information that follows. This way, you will be better able to understand the expectations of the course 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!
Course Description and Competencies

What to Expect

This course introduces learners to creating back-end components of a web application with the support of framework packages. It also teaches learners how to implement database functionality in a web application and how to create web services. This course requires intermediate expertise in object-oriented programming and the Java language.

This will be sequenced to build upon knowledge of development and design techniques and languages, such as Java Fundamentals, Java Frameworks, and Version Control.

You will find that this course employs learning resources that contain all the necessary reading materials, videos, and knowledge checks to prepare you for the course assessment. For the best understanding of the course content, complete each lesson. You will demonstrate your competency with a performance assessment.

This course covers the following competencies:

1. The learner develops object-oriented applications that can be integrated with relational databases.
2. The learner writes code for object-oriented applications using Spring framework.
3. The learner implements design patterns for object-oriented applications.

You must achieve a ranking of Competent on the assessment to pass the course. You may attempt the assessment two times before additional support is necessary. If you require further attempts, please contact our support team at (888) 320-0540 or support@academy.wgu.edu.

1 final project • 3 competency units
## Course Outline

<table>
<thead>
<tr>
<th>Module</th>
<th>Upon completion of this module, you will be able to:</th>
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| **SQL & Java**                | A. Manipulate data with structured query language (SQL) statements.  
B. Create an object-oriented program using Java.  
C. Construct ad hoc SQL queries and commands.                                                                                                                                               |
| **Object-Oriented Programming** | A. Perform real-time system design using object-oriented programming (OOP).  
B. Develop data processing applications.  
C. Create client-server systems using OOP.                                                                                                                                                 |
| **Spring Framework**          | A. Design applications with Spring Framework data access components and Spring Framework model-view-control components.  
B. Implement Spring Framework solutions.  
C. Use existing frameworks, assets, and content for OOP.                                                                                                                                           |
| **Software Design Patterns**  | A. Validate the need for software design patterns in an application.  
B. Apply the software design patterns in an application.                                                                                                                                                                                            |

## Technology Requirements

We want to be sure you have the tools to succeed! Review the [Computer System and Technology Requirements](#). 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

**Your Fellow Learners**
Check out the Course Lobby in the course site! If this online community, you can ask questions and explore ideas. You can connect with your fellow learners. When you use this site, you will realize that other learners may have the same questions you have. You can all benefit from learning together!

**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.