Hello, and welcome!

If you want to advance your IT career, this course will help you accomplish that. This course assumes a foundational knowledge of programming concepts. It provides an overview of software engineering processes and their challenging nature. You will also get familiar with project management models. These include the waterfall model and agile development. You will become prepared for tasks related to engineering, design, and software quality. Along the way, you will hone your skills in analysis and problem-solving.

We invite you to take a minute to learn about the course by reviewing the following information. 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.

Apply yourself and explore these concepts.
We’re here to help you every step of the way!
Course Description and Competencies

What to Expect
This course will give you a broad understanding of software engineering. You will explore software engineering processes, and you will look at several process models. You will also look at project management for software engineering.

This course contains four modules of content. Each is made up of one to three units. Each unit contains:

- An introduction describing Competencies and Learning Objectives
- Readings and Exercises
- A summary and Knowledge Check questions

You will demonstrate competency by preparing a solution proposal for a fictitious company. You must achieve a ranking of Competent on this submission to pass the course.

By the end of this course, you will be able to:

1. Analyze the objectives, scope, and organizational impact of software systems.
2. Determine optimal software design for given requirements.
3. Identify the costs and impact of design changes to software systems.
4. Create test cases for quality assurance as part of software development processes.

You must earn a Competent score on the project to pass the course. You will have three attempts to pass it.
# Course Outline

## Module: Software Engineering
- Apply principles that guide software engineering processes and practice.
- Explain the importance of a document management system and its components.
- Identify the types of documentation and their attributes.
- Apply a change control process and project management principles to a software project.
- Apply a plan for deployment.

## Module: Process Models
- Apply the software development life cycle process.
- Apply the characteristics of iterative models.
- Apply a prototype or a variation of the concept to a software project.
- Analyze the characteristics of rapid application development (RAD) models.
- Analyze the principles of agile, including the Agile Manifesto.

## Module: Design
- Apply guidelines for gathering collaborative requirements.
- Analyze requirements within the context of the object-oriented paradigm.
- Organize criteria for testing different types of software applications.
- Apply qualitative software assessments to categorize and control bugs.
- Integrate software testing methods throughout the software development process.

## Module: Project Management
- Create UML and ER diagrams.
- Define agile project management.
- Explain the importance of artifact transparency.
- Define product backlog and sprint backlog.
- Compare agile methods with other development methods.
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.

Key Contacts

Your Fellow Learners

Check out the Software Engineering Lobby in the course site! In 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? Our Academy Support Team 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 Academy provides compliant and accessible learning experiences. If you require accommodation, please contact us at the start of the course. You can email StudentAffairs@academy.wgu.edu or call (888) 320-0540. We are committed to ensuring that all students with disabilities have equal access to WGU Academy’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.