Course 1 Details

Software Product Design and Requirement Engineering

Course Description

This course equips students with the essential knowledge and skills to navigate the complexities of software product design and effectively manage requirements throughout the development life cycle.

Skills

Impact of New Requirements

- Understand the basics of requirements engineering, including the role of stakeholders.
- Define impact analysis and list tools and techniques for conducting it.
- Analyze how new requirements will affect a current software design, architecture, modules, and functionality.
- Understand refactoring techniques to improve code quality and accommodate new requirements.
- Explain how to identify and select tools and strategies for requirements management, version control, and configuration management.
- Explain how to communicate identified impacts, potential changes, and recommendations to stakeholders.

New Requirements

- Describe the purpose and characteristics of requirement types in a software engineering project.
- Explain how to elicit requirements using requirement-gathering techniques.
- Describe the purpose and characteristics of requirement types in a software engineering project.
- Define requirement level classifications and explain their role in meeting business needs.
- Define types of system requirements.
- Explain how requirement types align with stakeholder needs in various project contexts.

Managing Requirements

- Understand factors that influence prioritization and identify techniques and tools for prioritization.
- Analyze documents to determine stakeholder requirements.
- Understand documentation practices for software requirements.
- Describe effective communication strategies to ensure all requirements are clearly captured and understood by relevant stakeholders.

Skills Cont.

Conducting Usability Testing

- Identify the goals and objectives of usability testing and explain how to report and take action on usability findings.
- Understand how to identify the target audience and describe techniques for participant recruitment.
- Understand usability testing methods and explain how to select a usability testing method based on objectives, timeline, and available resources.
- Describe the scenarios and tasks participants perform during usability
- Explain what to include in a usability report.
- Understand the ethical and accessibility aspects associated with planning and conducting usability testing.
- Identify strategies for addressing potential challenges in usability testing.

Analyzing Software Design

- Understand how to develop diagrams that visually represent the proposed system's requirements and components in a clear, structured manner.
- Explain how to visualize a software's features, user interactions, and key functionalities in a prototype or wireframe using a professional tool.
- Describe the importance of iterative design and best practices for maintainability and testability.