

## Learning Guide Unit 4

### Reading Assignment

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As you go through the readings and watch the videos, consider the following:

1. Compare the Agile and Waterfall methodologies, highlighting their strengths and weaknesses in managing software projects.
  2. Describe the core principles of Scrum and explain how Git and GitHub support these practices in software development.
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#### Read:

1. Summers, B. L. (2020). *Effective methods for software engineering*. Auerbach Publishers, Incorporated.

- Read Chapter 12: Agile for Software Engineering ( pp. 122 - 130)
  - This chapter explores Agile methodologies, emphasizing their role in fostering flexibility, collaboration, and iterative development in software engineering. It highlights Agile's core principles, including customer involvement, adaptability to change, and incremental progress, making it an effective approach for dynamic and complex projects.

#### To read this book:

- Log into the UoPeople library and go to LIRN. [How to Access LIRN is now added to the library](#)
  - Select Computer Science under the "**Jump to the Specific Group**" section.
  - Search using the entire name of the book.
  - View the online book.
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#### Additional Readings:

1. Letaw, L. (2024). *Handbook of software engineering methods*. Oregon State University. Licensed under CC. 4.0.  
<https://open.oregonstate.education/setextbook/>

- Read Chapter 1: Agile ( pp. 12 - 18)
  - This chapter explores the Agile methodology, a flexible and iterative approach to software development that emphasizes collaboration, adaptability, and customer satisfaction. It delves into the principles and practices that make Agile effective, including continuous feedback, incremental delivery, and cross-functional teamwork. Through real-world examples and comparisons with traditional methods, the chapter highlights Agile's ability to respond to changing project requirements and deliver high-quality outcomes.

#### Watch:

1. OeLean. (2020, March 7). *Agile vs Waterfall: Choosing Your Methodology* [Video].

- This video explores the key differences between Agile and Waterfall methodologies, focusing on their approaches to planning, execution, and adaptability. It highlights the strengths and challenges of each, providing practical insights to help teams choose the most suitable methodology for their projects.

### Agile vs Waterfall: Choosing Your Methodology



2. Scrum Alliance. (2023, January 31). *Scrum Essentials in Under 10 Minutes* [Video].

- This video provides a concise overview of Scrum's key concepts, including roles, events, and artifacts, all explained in under 10 minutes. It covers how Scrum promotes team collaboration, iterative development, and adaptability, making it essential for modern software project management.

### Scrum Essentials in Under 10 Minutes



3. ProDeveloper. (2020, March 17). *Software Development Methodologies Introduction* [Video].

- This video provides an overview of foundational software development methodologies, highlighting their importance in structuring and managing projects effectively. It explores key approaches like Agile, Waterfall, and Scrum, emphasizing their principles, applications, and advantages in various project scenarios.

### Software Development Methodologies Introduction



4. Lightning AI. (2023, January 31). *Version Control Your Code Using Git ... And Thank Yourself Later | Ep 6* [Video].

- This video provides a practical introduction to version control using Git, showcasing how it simplifies code management, collaboration, and tracking changes in software projects. It highlights key features like branching, merging, and pull requests, making it an essential tool for developers in modern workflows.

Version Control Your Code Using Git ... And Thank Yourself ...

