

EDULEARN:
**SCRUM PACKAGE FOR SOFTWARE
ENGINEERING EDUCATION**

2025-07-01

Candy Pang

candy.pang@macewan.ca

Department of Computer Science
MacEwan University, Canada

Software Engineering

- What is **software engineering**?
- What do we teach in **software engineering**?
 - Python?
 - Java?
 - C & C++?
- Is learning programming same as learning **software engineering**?

Software Engineering

Program Logic

- Sequential Statements
- Conditional Statements
- Repetitive Statements
- Functional Definition
- etc.

Data Types and Structure

- Numeric
- String
- Boolean
- Tuple
- List
- Set
- Dictionary
- etc.

Software Engineering

- 610.12-1990 - IEEE Standard Glossary of Software Engineering Terminology
<https://ieeexplore.ieee.org/document/159342>
- **Software Engineering**
 - (1) The application of a **systematic, disciplined, quantifiable** approach to the **development, operation, and maintenance** of software; that is, the application of engineering to software.
 - (2) The study of approaches as in (1).

Software Engineering

- Learning software engineering is
 - learning the **techniques, methodologies,** and **tools** that help produce **high-quality, operable, maintainable** software systems with the given **budgets** before the given **deadlines** while **changes** occur.

Agile – Scrum

- **Agile** is a Software Engineering methodology
<https://agilemanifesto.org/>
- **Scrum** is an **Agile framework** that manages software projects
- **Scrum** is a framework, not a methodology
 - There's no "right" way
 - There are **artifacts** and expected **outputs**, not step-by-step instructions

Agile – Scrum

The Agile Scrum Framework at a glance

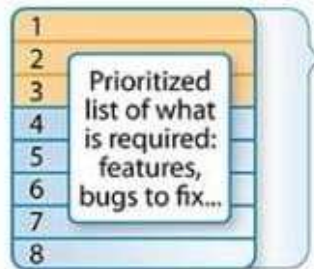
Inputs from
Customers, Team,
Managers, Execs



Product Owner



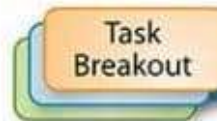
The Team



Product Backlog



Sprint Planning Meeting



Sprint Backlog

Sprint end date and team deliverable do not change



1-4 Week Sprint



Burn Down/Up Chart



Scrum Master

24 Hour Sprint



Daily Standup Meeting



Sprint Review



Finished Work



Sprint Retrospective



<https://www.neonrain.com/agile-scrum-web-development/>

Agile – Scrum – Artifacts

- Project Level
 - Product Backlog
- Sprint Level
 - Sprint Planning
 - Sprint Backlog
 - Sprint Task Boards
 - Sprint Burndown Chart
 - Sprint Tracking
 - Sprint Demo
 - Sprint Retrospective
 - Peer & Self-Evaluation

*No Standard
No Step-by-Step
Instruction*

Agile – Scrum

- Main challenge

Instructors lack
IT industry experience
to understand
the pros & cons
and the customization!

Agile – Scrum

The Agile Scrum Framework at a glance

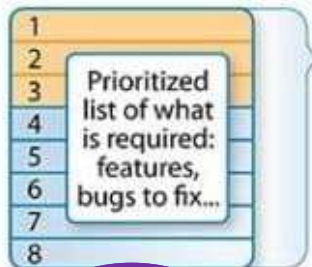
Inputs from
Customers, Team,
Managers, Execs



Product Owner



The Team



Product Backlog

Team selects starting at top as much as it can commit to deliver by end of Sprint

Sprint Planning Meeting



<https://www.neonrain.com/agile-scrum-web-development/>

Conclusion

- Scrum teaching package
<https://github.com/uacspang/ScrumEduPackage>
- Candy Pang <candy.pang@macewan.ca>
MacEwan University, Canada

Thank you and Questions?
Enjoy your time in Palma!