# UNIVERSITY INSTITUTE OF COMPUTING

## Agile Methodology

**(24CAT-656)**

# Unit-2- Syllabus

| Unit-2 | Agile | Lecture Hours:10 |
|---|---|---|
| **Agile Project Management** | Project Management introduction, Agile Scrum, Project management methodology, Selection of right project management methodology, Continuous integration and continuous delivery (CI/CD) in agile development. | |
| **Scrum** | Scrum framework, Scrum Roles, Agile Kanban, Agile Vs. Scrum. Product Backlog, Scrum Practices, Process flow of Scrum Methodologies,\ | |
| **Agile Design** | Agile Daily Stand-up, Sprint Review meeting vs Daily Stand-up meeting in Agile, Definition of Done, Agile Design, Retrospective in Agile development. | |

# CONTENT OF THE SYLLABUS

## • TEXT BOOKS

**T1** David J. Anderson and Eli Schragenheim, Agile Management for Software Engineering: Applying the Theory of Constraints for Business Results, Prentice Hall, 2003.

**T2** Hazza and Dubinsky, Agile Software Engineering, Series: Undergraduate Topics in Computer Science, Springer, 2009.

**T3** Agile Software Development Ecosystems by Jim Highsmith, Addison-Wesley 2002, ISBN 0201760436.

## • REFERENCES

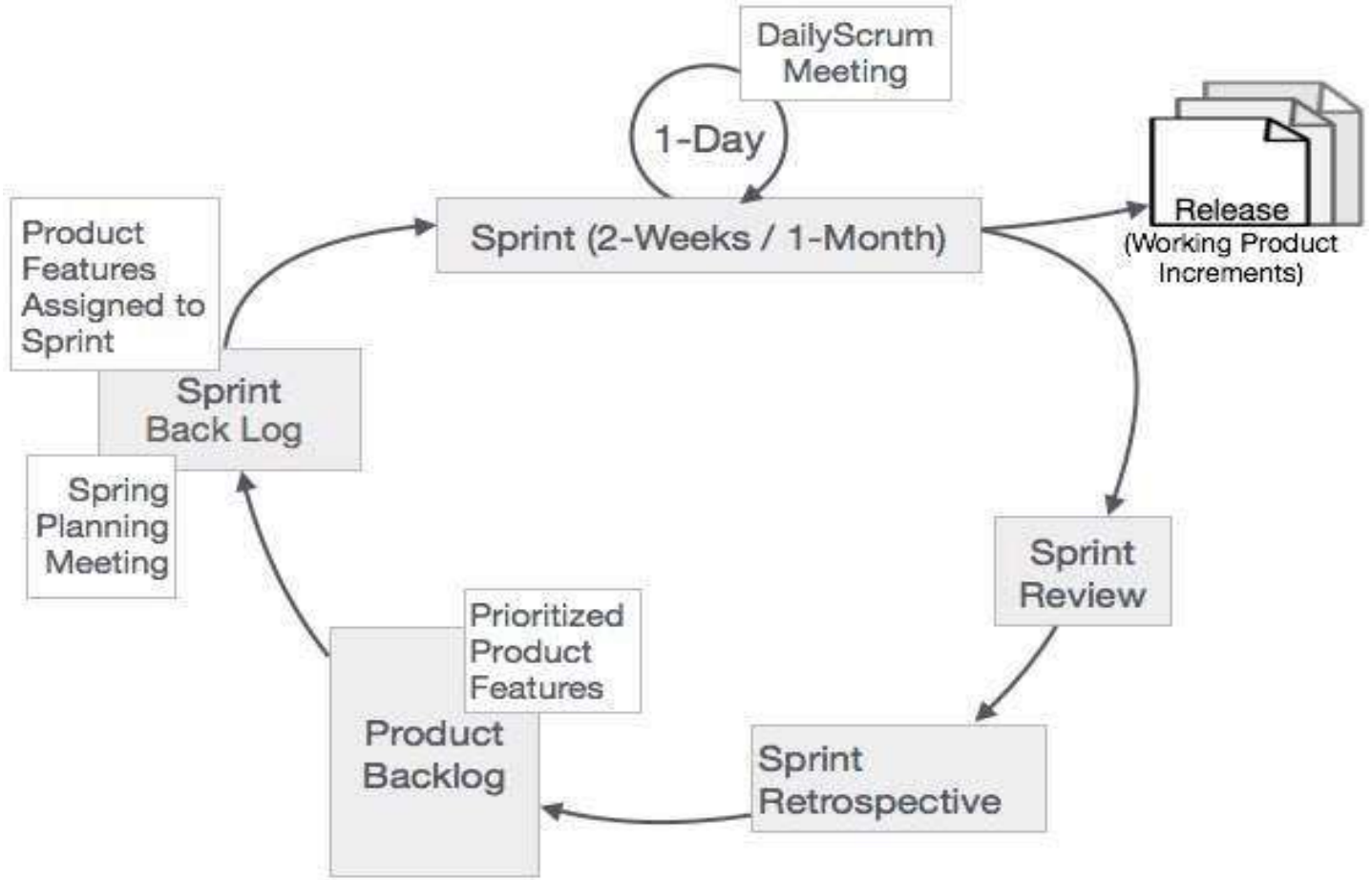
**R1** Craig Larman, Agile and Iterative Development: A Managers Guide, Addison-Wesley, 2004.

**R2** Kevin C. Desouza, Agile Information Systems: Conceptualization, Construction, and Management, Butterworth-Heinemann, 2007.

# Scrum framework

- Scrum is a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.
- Scrum is a process framework that has been used to manage complex product development since the early 1990s. Scrum is not a process or a technique for building products; rather, it is a framework within which you can employ various processes and techniques.
- The Scrum framework consists of Scrum Teams and their associated roles, events, artifacts, and rules.

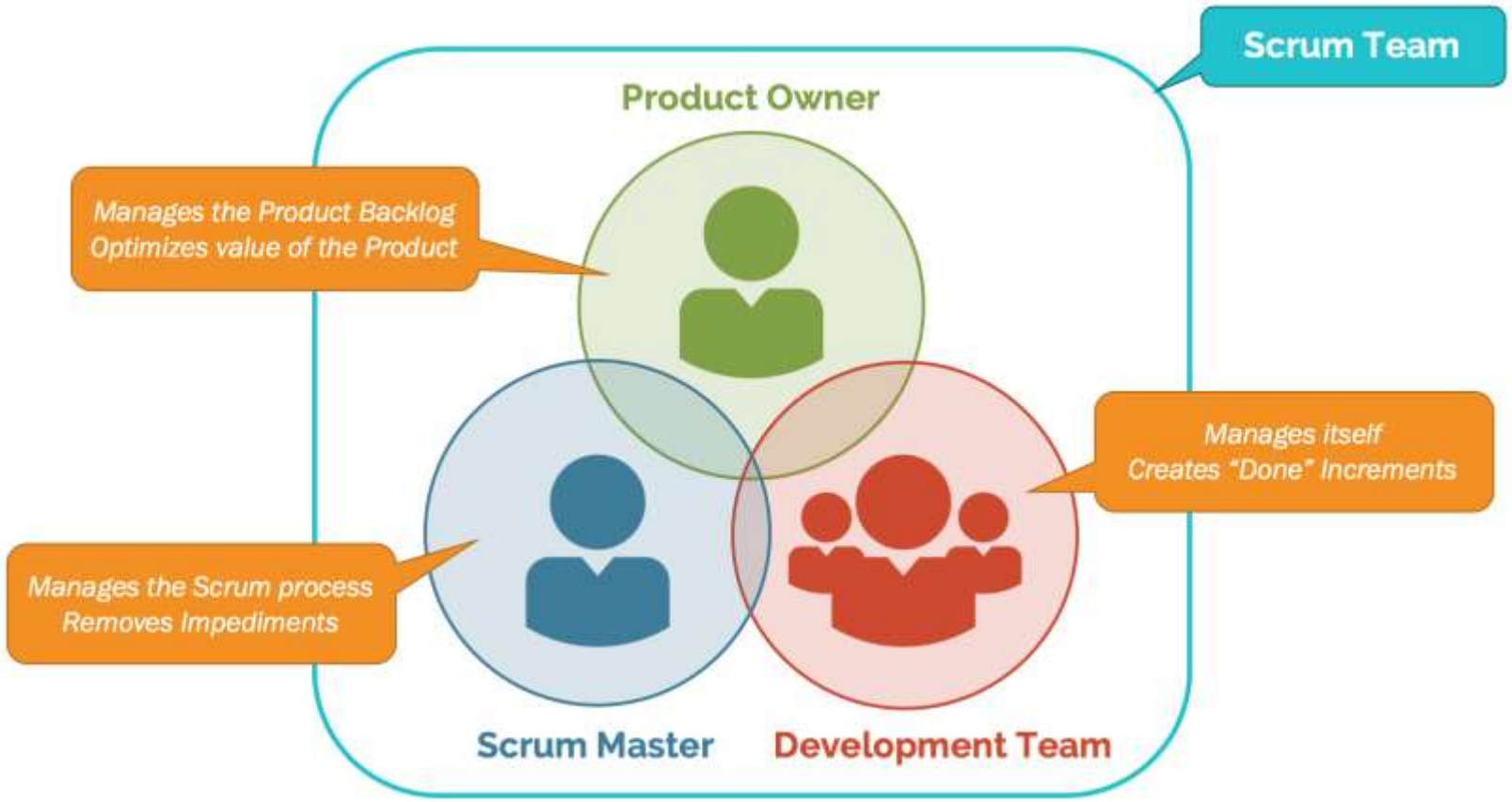
# Scrum Process Framework



# Sprint

- The heart of Scrum is a Sprint, a time-box of two weeks or one month during which a potentially releasable product increment is created. A new Sprint starts immediately after the conclusion of the previous Sprint. Sprints consist of the Sprint planning, daily scrums, the development work, the Sprint review, and the Sprint retrospective.
- In Sprint planning, the work to be performed in the Sprint is planned collaboratively by the Scrum Team.
- The Daily Scrum Meeting is a 15-minute time-boxed event for the Scrum Team to synchronize the activities and create a plan for that day.
- A Sprint Review is held at the end of the Sprint to inspect the Increment and make changes to the Product Backlog, if needed.
- The Sprint Retrospective occurs after the Sprint Review and prior to the next Sprint Planning. In this meeting, the Scrum Team is to inspect itself and create a plan for improvements to be enacted during the subsequent Sprint.

# Scrum Roles


Scrum Team
Product Owner
Manages the Product Backlog
Optimizes value of the Product
Manages itself
Creates "Done" Increments
Manages the Scrum process
Removes Impediments
Scrum Master
Development Team

# Scrum Roles

**1) ScrumMaster**

- The ScrumMaster (sometimes written as the Scrum Master, although the official term has no space after “Scrum”) is the keeper of the scrum process. He/she is responsible for-
- making the process run smoothly
- removing obstacles that impact productivity
- organizing and facilitating the critical meetings

# Scrum Roles

**2) Product Owner**

- The Product Owner is responsible for maximizing the value of the product and the work of the Team. How this is done may vary widely across organizations, Scrum Teams, and individuals.
- The Product Owner is the sole person responsible for managing the Product Backlog. Product Backlog management includes-
- Expressing Product Backlog items clearly.
- Ordering the Product Backlog items to best achieve goals and missions.
- Optimizing the value of the work the Team performs.
- Ensuring that the Product Backlog is visible, transparent, and clear to all, and shows what the Team will work on further.

# Scrum Roles

**2) Product Owner**

- Ensuring that the Team understands items in the Product Backlog to the level needed.
- The Product Owner may do the above work, or have the Team do it. However, the Product Owner remains accountable for these tasks.
- The Product Owner is one person, not a committee. The Product Owner may represent the desires of a committee in the Product Backlog, but those wanting to change a Product Backlog item's priority must address the Product Owner.
- For the Product Owner to succeed, the entire organization must respect his or her decisions. The Product Owner's decisions are visible in the content and ordering of the Product Backlog. No one is allowed to tell the Team to work from a different set of requirements, and the Team is not allowed to act on what anyone else says. This is ensured by ScrumMaster.

# Scrum Roles

**3) The Team**

- The Team is self-organizing and cross-functional. That means the team comprises of analysts, designers, developers, testers, etc. as appropriate and as relevant to the project.
- Optimal Team size is small enough to remain nimble and large enough to complete significant work within a Sprint. The Team size should be kept in the range from five to nine people, if possible. Fewer than five team members decrease interaction and results in smaller productivity gains. Having more than nine members requires too much coordination.
- The scrum team works together closely, on a daily basis, to ensure the smooth flow of information and the quick resolution of issues. The scrum team delivers product iteratively and incrementally, maximizing opportunities for feedback.

# ScrumMaster Services to the Product Owner

- The ScrumMaster serves the Product Owner in several ways, including -
- Finding techniques for effective Product Backlog management.
- Helping the Scrum Team understand the need for clear and concise Product Backlog items.
- Understanding product planning in an empirical environment.
- Ensuring that the Product Owner knows how to arrange the Product Backlog to maximize value.
- Understanding and practicing agility.
- Facilitating Scrum events as needed.

# ScrumMaster Services to the Scrum Team

- The ScrumMaster serves the Scrum Team in several ways, including -
- Coaching the Scrum Team in self-organization and cross-functionality.
- Helping the Scrum Team to create high-value products.
- Removing impediments to the Scrum Team’s progress.
- Facilitating Scrum events as requested or needed.
- Coaching the Scrum Team in organizational environments in which Scrum is not yet fully adopted and understood.

# ScrumMaster Services to the Organization

- The ScrumMaster serves the organization in several ways, including-
- Leading and coaching the organization in its Scrum adoption.
- Planning Scrum implementations within the organization.
- Helping employees and stakeholders understand and enact Scrum and empirical product development.
- Causing change that increases the productivity of the Scrum Team.
- Working with other ScrumMasters to increase the effectiveness of the application of Scrum in the organization.

# THANK YOU