



**Scrum Inc. Scrum Master™**

## **Learning Objectives**

Scrum Inc., 2020



## Preamble

This document lays out the objective Learning Outcomes for the Scrum Inc. Scrum Master™ course. The focus of the Scrum Inc. Scrum Master course is on the application of knowledge and skills within and beyond the context of the course. The learning outcomes are designed to offer instructors an opportunity for reflection on the course content, to set standards by which the success of the course will be evaluated, and to provide useful methods for assessing students' learning.

## 1 Core Scrum

### 1.1 The Scrum Framework

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

- Explain that Scrum is a lightweight framework that can be applied in any industry and domain; yet, while Scrum is adaptable to different contexts, the core framework remains the same across implementations.
- Recognize that having different interpretations of Scrum across teams will present significant challenges when scaling a Scrum implementation.
- Explain the value of agility over traditional project management in today's rapidly changing marketplace.
- List the five Scrum Values and explain how they relate to one another.
- Relate hands-on experience with iterative development to their own working context.
- Express the value of sharing learnings and insights across teams.
- Give at least one example of Scrum or Scrum@Scale™ in hardware or outside of IT.

### 1.2 The Origins of Scrum

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

- Explain how Dr. Sutherland's experience in making work visible at West Point led to the transparency emphasized in Scrum today.
- Recognize the influence that Dr. Sutherland's experience as a fighter pilot, responding to change over following a plan, has had on Scrum.
- Recognize how Dr. Sutherland's background working as a cancer researcher gave rise to a statistical understanding of which small steps lead to healthier change, and that each small step will open or close doors in the evolution of a system.
- Describe the OODA loop as it relates to overcoming resistance to change.
- Discuss the significance of '2-sword combat' (e.g., balancing short and long term needs and goals) and 'winning a war without firing a single shot' (e.g., an Agile transformation without firing a single person) in the context of business.

### 1.3 The Scrum Roles

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

- Distinguish the three Scrum roles, identify what each is accountable for, and explain how they work together to balance quality, sustainability, and economic viability with a focus on the customer.

### 1.3.1 Scrum Master

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

- Describe how and why the Scrum Master owns the Scrum process.
- Explain why the Scrum Master should focus on speed and shortening the feedback loop while helping the team maintain a sustainable pace.
- Explain why the Scrum Master is accountable for improving team performance.
- Recognize that the Scrum Master is responsible for coaching the team, the Product Owner, and the organization on the Scrum process, making work visible, facilitating Scrum events, removing impediments and maintaining a focus on continuous improvement.
- Provide real-world examples of Scrum Master challenges and propose ways of addressing them.
- Evaluate possible courses of action and their consequences.
- Explain why the Scrum Master and Product Owner are a pair and must work together to implement the Scrum and Agile values, find techniques for effective Backlog management, and clearly communicate the vision, priority, and goals to the team.

### 1.3.2 Product Owner

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

- Explain why the Product Owner is responsible for clearly communicating their vision to the team and for developing a Backlog to achieve that vision.
- Recognize that the Product Owner has the final say on the ordering of the Product Backlog.
- Describe why the Product Owner should spend half of their time with customers and stakeholders and the other half of their time with the team.
- State that the Product Owner is accountable for maximizing the value of the work done by the team.

### 1.3.3 Team Member

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

- State that the team owns the 'how' and is empowered to self-organize around how to get the work done.
- Explain that the team is accountable for the quality of the work delivered, with the constraints of the Acceptance Criteria, Definition of Done, and scope of work defined by the Product Owner.
- Describe the benefits of cross-functional teams over siloed teams.
- Explain the value of T-shaped Team Members and identify techniques for encouraging T-shaped growth and development.
- Discuss why Scrum Teams should be small & stable, collaborative, self-managing and self-organizing.
- Recognize that the Scrum Master and Product Owner are *part of* the Scrum Team, not *apart from* it, and are expected to participate in all Scrum Events.

### 1.3.4 Leadership/Management

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

- Discuss the notion of servant leadership and explain how this differs from traditional command and control management.
- Explain why servant leadership is key to building an agile system.
- Explain why leadership must create the environment and culture for Scrum to succeed.
- Explain why leadership is responsible for eliminating organizational debt.
- Distinguish areas of waste and areas of value in traditional management practices.
- Describe how the value-add responsibilities of traditional project management are distributed across the three Scrum Roles.

## 1.4 Scrum Events

### 1.4.1 The Sprint

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

- Recognize the Sprint as a fixed time-box of one month or less, in which the team produces a “done” Product Increment.
- Explain the importance of having a stable Sprint cadence, especially with regard to Velocity.
- Describe why shorter Sprint cycles are preferred to longer Sprint cycles.

### 1.4.2 Product Backlog Refinement

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

- State that the team owes up to 10% of their Sprint to the Product Owner for the purpose of refining the Product Backlog.
- Recognize that Backlog Refinement is a Product Owner meeting and that the Scrum Master may help to facilitate it.
- Recognize that Product Backlog Items (PBIs) can be any size and become more granular and detailed as they get closer to execution.
- Create PBIs using a format that incorporates the "who," "what," and "why" (e.g., user story format).
- Explain why we want to get PBIs in a “ready” state and give examples of ‘Definitions of Ready.’
- Distinguish ‘Definition of Done’ from ‘Acceptance Criteria.’
- Apply story-slicing techniques that enable swarming on PBIs.

#### 1.4.2.1 Estimation

- Discuss why only those doing the work estimate it.
- Recall at least two empirically supported reasons for why estimating in points is better than estimating in time.
- Describe relative size estimation, which may include estimates of effort or value.
- Identify at least two methods for estimating PBIs with points (e.g., planning poker and affinity estimation).
- Practice estimating PBIs using points.

### 1.4.3 Sprint Planning

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

- Describe the importance of having a Sprint Goal that is motivating and achievable.
- Identify two methods for establishing the Sprint Goal.
- State that Sprint Planning is time-boxed to two hours or less per week of Sprint.
- Recognize that the Scrum Master is responsible for facilitating this event.
- Recognize that the Scrum Master should help the team confirm their capacity so they know how much work to pull into the Sprint.
- Discuss why only “ready” PBIs should be pulled into the Sprint Backlog.
- State that the Sprint Backlog is one of the three Scrum artifacts.
- Explain that a Kaizen, or process improvement experiment, should be at the top of the Sprint Backlog.

### 1.4.4 Sprint Review

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

- State that the Sprint Review is time-boxed to one hour or less per week of Sprint.
- Describe that the objective of the Sprint Review is to demonstrate a working increment for the purpose of getting feedback and updating the Product Backlog.
- Explain that only completed work is demonstrated at the Sprint Review.
- Explain that the Product Owner is responsible for getting the right people in the room to give feedback during the Sprint Review.
- Recognize that the Scrum Master may help facilitate this event.
- Discuss the impact of any work that was pulled into the Sprint backlog but, for one reason or another, did not get done.

### 1.4.5 Sprint Retrospective

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

- State that the Sprint Retrospective is time-boxed to 45 minutes (or less) per week of Sprint.
- Recognize that the Scrum Master is responsible for facilitating this event.
- Explain the importance of the Retrospective for continuous improvement.
- Discuss the importance of the Scrum team identifying and agreeing on a measurable process improvement experiment (Kaizen) to try in the next Sprint based on reflection of previous Sprint.
- Relate the importance of identifying the current state and target condition when deciding on experiments for improving the process.
- Differentiate velocity trends for teams that practice Kaizen versus teams that don't.
- Demonstrate at least one method for facilitating a Sprint Retrospective.

### 1.4.6 Daily Scrum

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

- Describe that the Daily Scrum is a meeting for the team to re-plan and intensify focus, increase collaboration, and identify and resolve impediments.
- State that the Scrum Master is responsible for ensuring that the Team has a Daily meeting.
- Explain why the result of the Daily meeting should reflect improved flow (and Process Efficiency of PBIs).
- Identify techniques for motivating team spirit and maximizing the effectiveness of the Daily Scrum.
- Explain how the Daily Scrum can be used in a scaled context to align multiple teams that have a need to coordinate or a common goal.
- Recognize symptoms of an unhealthy Scrum board.

### 1.5 Scrum Artifacts

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

- Identify the three Scrum artifacts and how they are produced in, or help guide, the five Scrum events.

## 2 Lean Principles

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

- Describe a Kaizen mindset and explain how small, iterative changes can lead to revolutionary leaps.
- Describe the three pillars of Scrum – Transparency, Inspection, and Adaptation – and how they implement the work of Ogunnaike and Ray.
- Explain the importance in reducing and eliminating waste in the system.
- Perform a root-cause analysis (e.g., using the '5 Whys' technique).
- Assess the Process Efficiency of their teams and recall that the definition of Lean is a Process Efficiency of 25% or higher.
- Explain how the work of Takeuchi and Nonaka on Lean and the Toyota Production System defined Scrum.
- Describe the origins of the name 'Scrum' from Takeuchi and Nonaka's 'New New Product Development Game.'
- Recognize that a Lean mindset suggests that you address a defect immediately after it is identified as opposed to a mindset where defects are stored to be fixed later.

## 3 Agile Manifesto

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

- Recognize the four values of the Agile Manifesto and their significance in the context of complex adaptive systems.
- Identify the 12 principles of the Agile Manifesto and describe their function in guiding practices that support teams in implementing and executing with agility.

- Explain that Scrum is one of the driving forces that gave rise to the Agile movement and predates the Agile Manifesto.
- Explain why 58% of Agile teams are late, over-budget, and with unhappy customers (i.e., not agile) and explain what needs to be done to fix that.

## 4 Patterns of High Performing Teams

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

- Recommend multiple ways to double their teams' production in one Sprint.
- Identify which of the Patterns are generative and promote or enhance the effectiveness of other patterns, and explain how.
- Explain the advantage of adding the Patterns to Scrum to achieve increased productivity.
- Recognize the evidence-based nature of the Patterns in the Scrum Pattern Language.

### 4.1 Yesterday's Weather

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

- Apply Yesterday's Weather to determine how much work should be pulled into a Sprint.
- Explain how this Pattern is generative to the Pattern of 'Teams that Finish Early Accelerate Faster.'

### 4.2 Happiness Metric

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

- Explain that happiness is a leading indicator of productivity.
- Describe why maintaining a sustainable pace is important for happiness.
- Apply the Happiness Metric pattern to assess the happiness of their teams.
- Demonstrate how this pattern can be used to facilitate conversation during the Sprint Retrospective.

### 4.3 Teams that Finish Early Accelerate Faster

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

- Explain the rationale behind not committing to more work than the team has been able to complete in previous Sprints.
- Describe how the 'Yesterday's Weather' and 'Interrupt Buffer' patterns reinforce the 'Teams that Finish Early Accelerate Faster' pattern.

### 4.4 Stable Teams

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

- Recite Brook's law and describe how it relates to the 'Stable Teams' pattern.
- Discuss the cost of context switching and how this impacts unstable teams.
- Explain why team performance and effectiveness improves for Stable teams.

## 4.5 Swarming

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

- Explain what Swarming is.
- Explain that teams that don't Swarm are less likely to meet their Sprint commitments.
- Describe the cost of context switching and the impact Swarming has on Process Efficiency, throughput and quality.

## 4.6 Interrupt Buffer

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

- Determine the amount of interrupts that should be planned for based on Yesterday's Weather.
- Recognize that the Product Owner should still prioritize interrupts that are brought into the interrupt buffer.
- Explain that when the interrupt buffer is full, new interrupts that are higher priority than other PBIs in the Sprint Backlog will cause the Sprint to be aborted and the team must re-plan the remainder of the Sprint.
- Describe how this pattern can help reduce interrupts and lead to Finishing Early, making it a generative pattern.

## 4.7 Good Housekeeping (formerly Daily Clean Code)

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

- Describe the Toyota Production System's Andon Cord approach to dealing with defects and how this approach and mindset encourages Swarming, making it another generative pattern.
- Recognize the impact and cost of fixing a defect outside of the Sprint.
- Discuss how to deal with defects discovered inside versus outside of the Sprint differently.

## 4.8 Scrum Emergency Procedure

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

- Explain what to do when it becomes obvious by mid-Sprint that the Sprint will fail.
- Identify the steps in the Scrum Emergency Procedure in the correct order: Innovate > Offload Backlog > Reduce Scope > Abort the Sprint.

# 5 Scrum@Scale

## 5.1 Descaling

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

- Explain the importance of descaling, running a Lean scrum, and starting with a small group of teams that get Scrum working well before scaling.
- Recognize that dysfunctions at the team-level will only be magnified at scale.



## 5.2 Scaling the Scrum Master

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

- Explain how the Scrum Master role scales in Scrum@Scale.
- Recognize the Scrum of Scrums Master (SoSM) as a new role in Scrum@Scale.
- Identify the Executive Action Team (EAT) as the Scrum Master for the organization.
- Distinguish Scrum Of Scrums (SoSs) as a team of teams from the Scaled Daily Scrum (SDS) as an event.
- Describe how the SDS can be utilized to sync and align teams within a SoSs to maintain high communication saturation while encapsulating complexity and reducing communication pathways.
- Explain how impediments that can't be resolved by those who encounter them are escalated to those who can resolve them.

## 6 Scrum Inc. Scrum Master Credential

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

- Access and complete the Scrum Inc. Scrum Master exam.
- Download their Scrum Inc. Scrum Master Credential (upon successful completion of the exam).
- State the renewal process.