



O APMG International

Agile Business Consortium Scrum Master Course (v1.1)

Copyright [©] 2021 Agile Business Consortium all rights reserved

Scrum Master Examination



At the end of the course there is an exam!

- 50 simple, multiple choice questions
- 40 minutes
- Closed book
- Pass mark: 37 marks out of 50 (74%)





Course Overview



Day 1

- Scrum Overview
- Self Organization
- Agile Fundamentals
- Empirical Product Development and Scrum Theory
- Scrum Events
- The Scrum Team and accountabilities
- Artifacts and Commitment

Day 2

- Day 1 Refresh
- Simulation Practicalities of:
 - The Product Backlog Creation
 - Estimation
 - Sprint Planning & Done
 - Sprint Progress
 - Sprint Retrospectives and Review
- Scrum Master Exam





Day 1



Scrum Definition



Scrum is a lightweight framework that helps people, teams and organizations generate value through adaptive solutions for complex problems.

- It is simple and purposefully incomplete
- It does not provide people with detailed instructions its rules guide their relationships and interactions
- It can be augmented if necessary, after trying 'as is'
 - Various processes, techniques and methods can be employed within the framework.
 - It wraps around existing practices or renders them unnecessary.





Scrum Team





The Product Owner is accountable for maximizing the value of the product resulting from the work of the Scrum Team



The Scrum Master is accountable for establishing Scrum as defined in the Scrum Guide. They do this by helping everyone understand Scrum theory and practice, both within the Scrum Team and the organization.



Developers

The self-managing group of professionals who do the work of delivering one or more 'Done Increments each Sprint



Scrum Master Responsibilities



- Promote and support Scrum as defined in the Scrum Guide
 - Help everyone understand the Scrum theory, practices, rules and values
- Service to the Product Owner
 - Ensuring that goals, scope, and product domain are understood by everyone on the Scrum Team
 - Finding techniques for effective Product Backlog management
 - Support the PO in understanding and practicing agility
- Service to the Development Team
 - Coaching the Development Team in self-organization and cross-functionality
 - Removing impediments to the Development Team's progress
- Service to the organization
 - Leading and coaching the organization in its Scrum adoption
 - Causing change that increases the productivity of the Scrum Team
 - Working with other Scrum Masters to increase the effectiveness of Scrum in the organization







Self organization



Self Organization Model









Discuss how Scrum complements the three aspects of the model: **Container, Difference and Exchanges**

Explore the three aspects:

- Container
 - What makes up the container, what are the boundaries of the system.
 e.g. (process, time, behaviors, authority)

Differences

 What differences in agents in the systems are there, how does that affect how members of the Development Team interact. What would happen if we add or take away differences, i.e. Have less diversity?

• Exchanges

 What are the exchanges of information in the system, what meetings or information sources would they come from? What would happen if they were less infrequent or more frequent?

Designed Alliance or Working Agreement

- A "container" that sets the context for expected team behaviors
- Created by the whole Scrum Team
- Participants commit to holding each other accountable to it
- Sets the foundation for healthy conflict









Agile Fundamentals





That sounds simple, what's difficult?







Work in Groups

Think of a successful project you have worked on

What were the key things that made it successful?

You have x mins

CAPTURE ONE STATEMENT PER POST-IT



ABC Agile Manifesto



The Agile Business Consortium are building on the Manifesto for Agile Software Development by uncovering better ways of *developing solutions to business problems and opportunities*.

Through this work we continue to value:

Individuals and interactions over processes and tools Working solutions over comprehensive documentation Customer collaboration over contract negotiation Responding to change over following a plan

That is, while we value the items on the right, we value the items on the left more.







ABC Agile Manifesto Principles 1 – 6

1. Our highest priority is to satisfy the customer through early and continuous delivery of value.

Formazione

- 2. Welcome change, even late in the evolution of a solution. Agile processes harness change to deliver competitive advantage.
- 3. Deliver working solutions frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
- 4. All parties involved in evolving valuable solutions must work together daily throughout the project.
- 5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- 6. The most efficient and effective method of conveying information to and within any team is face-to-face conversation.

ABC Agile Manifesto Principles 7 – 12

- 7. Working solutions are the primary measure of progress.
- 8. Agile processes promote sustainable delivery. Everybody involved in an endeavour should be able to maintain a constant pace indefinitely.
- 9. Continuous attention to technical excellence and good design enhances agility.
- 10. Simplicity -- the art of maximizing the amount of work not done -- is essential.
- 11. The best understanding of problems and opportunities and the best business outcomes emerge from self-organizing teams.
- 12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.





Formazione

Exercise

In Groups

- Discuss the Agile Principles
- Take a few minute to reflect on the Agile Principles
- Agree and highlight the 3 most important and the 3 least important
- Be ready to share and explained you decision







Scrum Theory Empiricism and Lean Thinking



Scrum Theory



- Scrum is founded on empiricism and lean thinking
 - Empiricism asserts that knowledge comes from experience and making decisions based on what is observed
- Lean thinking reduces waste and focuses on the essentials
- Scrum employs an iterative, incremental approach to optimize predictability and to control risk
- Scrum engages groups of people who collectively have all the skills and expertise to do the work and share or acquire such skills as needed.
- Scrum combines four formal events for inspection and adaptation within a containing event, the Sprint
- These events work because they implement the empirical Scrum pillars of transparency, inspection, and adaptation





Incremental





Iterative







Image source: Jeff Patton

Incremental and Iterative



- **Iterative** development
 - Revisit previously worked-on process using feedback to make it better with each cycle
- Incremental delivery
 - Deliver piece by piece, realising value with each delivery
- Neither is all good alone
 - Iterative development without Incremental delivery delays realisation of value
 - Incremental delivery without iterative development eliminates the feedback loops needed to get it right



In combination iterative and incremental are fantastic





Three legs uphold every implementation of empirical process control



Based on: www.scrum.org/resources/blog/readingscrum-guide-empirical-process-itself



Empiricism in Scrum



 Adaptation is best enabled by selfmanagement



Adaptation

Transparency

- Inspection enables Adaptation
- Inspection without adaptation is considered pointless

Inspection

- Transparency enables Inspection
- Inspection without transparency is misleading and wasteful



Empiricism in Scrum



Transparency

- Process and work must be visible to Scrum Team and Stakeholders
- Perceived state of the three formal artifacts inform decisions
- Low transparency can lead to decisions that diminish value and increase risk

Inspection

- Artifacts and progress toward agreed goals must be inspected frequently and diligently to detect potentially undesirable variances or problems.
- To help with inspection, Scrum provides cadence in the form of its five events

Adaptation

- Deviation outside acceptable limits for either the process or the product must be corrected
- Adjustment must be made as soon as possible to minimize further deviation
- Adaptation should occur as soon as soon as anything new is learned through inspection

Lean thinking

- Lean thinking encourages us to reduce waste and focus on the essentials of the work we are doing and to continuously improve our processes to achieve this. It encourage us to focus on:
- Value for example by specifically identifying value in the goals and items to be addressed in Product and Sprint Backlogs



- Flow for example by ensuring that value creating steps occur in tight sequence from backlog item to delivered Increment
- Pull for example through the pull of the most valuable items from backlog just in time to be be converted into valuable product







Reflection...



- What are the benefits of using an Iterative and Incremental approach that embraces empiricism and lean thinking ?
- What elements might be easy to apply in your organization.
- What might be more challenging and how might you address those challenges?







Scrum Events



Timeboxes for Scrum Events





Scrum Events should be timeboxed

(a timebox is a defined period of time within which the activity takes place)

The timebox duration is dependent on the sprint length

Scrum Event	One month sprint	Shorter Sprint	
Sprint Planning	8 hours	Scaled accordingly	
Daily Scrum	15 mins	15 mins	
Sprint Review	4 hours	Scaled accordingly	
Sprint Retrospective	3 hours	Scaled accordingly	Agi





All the work necessary to achieve the Product Goal, including Sprint Planning, Daily Scrums, Sprint Review, and Sprint Retrospective, happen within Sprints.

During the Sprint, Developers work to achieve the Sprint Goal:

- No changes are made that would endanger the Sprint Goal
- Quality does not decrease
- The Product Backlog is refined as needed
- Scope may be clarified and renegotiated with the Product Owner as more is learned





Backlog Refinement

An ongoing activity NOT an event



- The act of breaking down and further defining Product Backlog items into smaller more precise items.
- An ongoing activity to add details, such as a description, order, and size.
- The Developers who will be doing the work are responsible for the sizing.
- The Product Owner may influence the Developers by helping them understand and select trade-offs.
- For Development Teams to be highly productive, backlog refinement is essential
- Scrum Masters should encourage this practice and support everybody in making it effective.




Daily Scrum

- Daily timeboxed 15 minute event for the Developers of the Scrum Team
- Purpose:
 - Inspect progress towards the Sprint Goal
 - Adapt the Sprint Backlog as necessary
 - Adjusting the upcoming planned work



- The Developers can select whatever structure and techniques they want
- Produces an actionable plan for the next day of work
- Creates focus and improves self-management

Daily Scrums improve communications, identify impediments, promote quick decision-making, and consequently eliminate the need for other meetings.

Same Place





Daily Scrum – Reflection...



- Identify 3 ways the Daily Scrum differs from a status meeting
- How does the guidance for the Daily Scrum support the Development Team?
- What techniques could the Scrum Master suggest to help the Development Team keep the Daily Scrum to 15 minutes?



Sprints

The heartbeat of Scrum, where ideas are turned into value





Sprint length is fixed at 1 month or less

Sprint is focused on a defined Sprint Goal

Scope change must be negotiated within existing Sprint Goal

Product Owner may cancel the Sprint if the Sprint Goal becomes obsolete





Agile Busines SCRL

Sprint Review



- Held at the end of the Sprint the purpose of the Sprint Review is to inspect the outcome of the sprint (the sum of all Increments) and determine future adaptations of the Product Backlog
- The Scrum Team presents the results of their work to key stakeholders and progress towards the Product Goal is discussed
 - Demonstration of completed Product Backlog Items
 - NOT partially completed Product Backlog Items
- A working session for the Scrum Team
 - Minimal preparation
 - Avoid slides / descriptions demonstrate the product!
- Whole Scrum Team participates



Sprint Review – reflection



- Identify at least 3 ways the Sprint Review differs from a traditional project progress meeting
- Consider how the Sprint Review helps make empirical process control (transparency, inspection and adaptation) a reality



Sprint Retrospective



The purpose of the Sprint Retrospective is to plan ways to increase quality and effectiveness.



The Scrum Team:

- Inspects how the last Sprint went with regards to individuals, interactions, process tools, and their Definition of Done
- Identifies assumptions that led them astray and their origins are explored
- Discusses what went well, what problems were encountered, and how those problems were solved
- Identifies the most helpful changes to improve effectiveness





Sprint Retrospective – reflection



- Identify at least 3 ways the Sprint Retrospective differs from a traditional project progress meeting
- Consider how the Sprint Retrospective helps make empirical process control (transparency, inspection and adaptation) a reality



Meetings: Fact or Fiction?











The Scrum Team and accountabilities



Scrum Team





The Product Owner is accountable for maximizing the value of the product resulting from the work of the Scrum Team



The Scrum Master is accountable for establishing Scrum as defined in the Scrum Guide. They do this by helping everyone understand Scrum theory and practice, both within the Scrum Team and the organization.



Developers

The self-managing group of professionals who do the work of delivering one or more 'Done Increments each Sprint



The Developers

Developers are the people in the Scrum Team that are committed to creating any aspect of a usable Increment each Sprint.

The specific skills needed by the Developers are often broad and will vary with the domain of work.

Developers are always accountable for:

- Creating a plan for the Sprint, the Sprint Backlog
- Instilling quality by adhering to a Definition of Done
- Adapting their plan each day toward the Sprint Goal; and
- Holding each other accountable as professionals











What characteristics, disciplines and skills would you expect to find in an effective *self-managing, cross-functional* Development Team within your organization(s)?





Self-Managing, Cross Functional

- The Developers:
 - Collectively have all the skills necessary to create value each Sprint
 - Collaborate as a team to complete Sprint Backlog items
 - Share knowledge of specialist skills; rotate common tasks
 - Egos are put aside
- The Scrum Master:
 - Coaches team members in self-management and cross-functionality



Formazione



Ideal Team Size







Group size: 2 Only one interaction possible



Group size: 5 Ten interactions possible

Group size: 3 Three interactions possible



Group size: 6 Fifteen interactions possible



Group size: 4 Six interactions possible



Formula is N(N-1)/2

Group size: 7 Twenty-one interactions possible

This affects: Communication overhead, group decision making, relationships are key, maintaining relationships takes time

The highest performing teams need to have strong relationships



Scrum Master



Scrum Masters – true leaders who serve Scrum Team and the larger organization.

- The Scrum Master is accountable for:
 - Establishing Scrum as defined in the Scrum Guide
 - Helping everyone understand Scrum theory and practice, both within the Scrum Team and the organization.
 - The Scrum Master is accountable for the Scrum Team's effectiveness
 - Finding techniques for effective Product Backlog management
 - Enabling the Scrum Team to improve its practices, within the Scrum framework







Scrum Master Responsibilities



- The Scrum Master serves the Scrum Team in several ways:
 - Coaching the team members in self-management and cross-functionality
 - Helping the Scrum Team focus on creating high-value Increments that meet the Definition of Done
 - Causing the removal of impediments to the Scrum Team's progress
 - Ensuring that all Scrum events take place and are positive, productive, and kept within the timebox



Scrum Master Responsibilities



- The Scrum Master serves the Product Owner in several ways:
 - Helping find techniques for effective Product Goal definition and Product Backlog management
 - Helping the Scrum Team understand the need for clear and concise Product Backlog items
 - Helping establish empirical product planning for a complex environment
 - Facilitating stakeholder collaboration as requested or needed





Scrum Master Responsibilities



- The Scrum Master serves the organization in several ways:
 - Leading, training, and coaching the organization in its Scrum adoption
 - Planning and advising Scrum implementations within the organization
 - Helping employees and stakeholders understand and enact an empirical approach for complex work
 - Removing barriers between stakeholders and Scrum Teams





The Product Owner is accountable for maximizing the value of the product resulting from the work of the Scrum Team. How this is done may vary widely across organizations, Scrum Teams, and individuals.

- The Product Owner is also accountable for effective Product Backlog management, which includes:
 - Developing and explicitly communicating the Product Goal
 - Creating and clearly communicating Product Backlog items
 - Ordering Product Backlog items; and
 - Ensuring that the Product Backlog is transparent, visible and understood





Product Owner



- For Product Owners to succeed:
 - the entire organization must respect their decisions
 - decisions are visible in the content and ordering of the Product Backlog, and through the inspectable Increment at the Sprint Review
- The Product Owner is one person, not a committee
 - The Product Owner may represent the needs of many stakeholders in the Product Backlog
 - Those wanting to change the Product Backlog can do so by trying to convince the Product Owner.





The Product Owner should have

Formazione



Authority to make decisions

Time to do the job and work collaboratively as part of the Scrum Domain knowledge that guides the product in the right direction



Roles Exercise



Organize the responsibilities under the correct role:

- Stakeholders
- Product Owner
- Developments
- Scrum Team
- Scrum Master
- Nobody



What about other roles, like the Project Manager?

Agile Project Management and Scrum Pocket Book

- Describes how Scrum can operate seamlessly with AgilePM
- Leaving Scrum 100% compliant with the Scrum Guide and providing advice and guidance on:
 - A project lifecycle beyond the Scrum process
 - Roles and responsibilities beyond the Scrum roles
 - Supplementary events and techniques to help the Product
 Owner operate successfully in a corporate project environment



E Formazione





Artifacts and Commitments





- Scrum's artifacts represent work or value
 - Designed to maximize transparency of key information
 - Everyone inspecting them has the same basis for adaptation
- Each artifact contains a commitment to ensure it provides information that enhances transparency and focus against which progress can be measured:

For the **Product Backlog** it is the **Product Goal** For the **Sprint Backlog** it is the **Sprint Goal** For the **Increment** it is the **Definition of Done**

 These commitments exist to reinforce empiricism and the Scrum values for the Scrum Team and their stakeholders



The Product Backlog

Formazione

The Product Backlog is an emergent, ordered list of what is needed to improve the product. It is the single source of work undertaken by the Scrum Team.

Commitment - Product Goal:

- Describes a future state of the product
- Serve as a target for the Scrum Team to plan against
- The rest of the Product Backlog emerges to define "what" will fulfil the Product Goal
- The long-term objective for the Scrum Team
- They must fulfil (or abandon) one objective before taking on the next

A product is a vehicle to deliver value. It has a clear boundary, known stakeholders, well-defined users or customers. A product could be a service, a physical product, or something more abstract.



The Sprint Backlog



The Sprint Backlog is a plan by and for the Developers:

- A highly visible, real-time picture of the work that the Developers plan to accomplish during the Sprint in order to achieve the Sprint Goal
- Updated throughout the Sprint as more is learned
- Should have enough detail that they can inspect their progress in the Daily Scrum

Commitment - Sprint Goal:

- Created during Sprint Planning and added to the Sprint Backlog
- Single objective for the Sprint
- A commitment by the Developers
- Provides flexibility in terms of the exact work needed to achieve it
- Creates coherence and focus, encouraging the Scrum Team to work together rather than on separate initiatives

Sprint Backlog

- The Sprint Goal (why)
- Selected Product Backlog items (what)
- Plan for delivery How)





Increment

Formazione



Multiple Increments may be created within a Sprint Sum of the Increments is presented at the Sprint Review supporting empiricism

The Sprint Review should never be considered a gate to releasing value

An Increment may be delivered to stakeholders prior to the end of the Sprint



Increment: Definition of Done



Commitment: Definition of Done

- A formal description of the state of the Increment when it meets the quality measures required for the product
- The moment a Product Backlog item meets the Definition of Done, an Increment is born
- The Definition of Done creates transparency by providing everyone a shared understanding of what work was completed as part of the Increment
- If a Product Backlog item does not meet the Definition of Done, it cannot be released or even presented at the Sprint Review
- Instead, it returns to the Product Backlog for future consideration
- If the Definition of Done for an increment is part of the standards of the organization, all Scrum Teams must follow it as a minimum
- If it is not an organizational standard, the Scrum Team must create a Definition of Done appropriate for the product

Work cannot be considered part of an Increment unless it meets the Definition of Done

The Product Backlog Funnel





'Ready'



- Well understood enough so that the Development Team can estimate effort to complete
- Small enough for the Development Team to deliver between four and ten Product Backlog Items in a Sprint
- High-level solution design considered where appropriate
- Sufficient supporting information included and/or subject matter experts identified as required









As a: <USER/BENEFICIARY>

- I want: <this FEATURE/CAPABILITY>
- So that: <I can achieve this GOAL>

This helps to support the demonstration of a 'Done' Increment at the end of a sprint





User Stories



Card

- Typically 6" x 4" (approx. 15cm x 10cm Restricted space intentionally constrains detail)
- A token for a conversation



Conversation – Informal discussion of detail

- Between Product Owner and Development Team
- Involving other stakeholders as required to avoid misinterpretation

Confirmation

- Acceptance criteria for the Story
 - Traditionally written on the back of the card
 - Help define what 'done' means for the Story



Context

- Provided by Visual Models
 - E.g. Business Process Models, Customer Journeys, Story Boards, Story Maps etc.



Example Stories

• A reasonable size story that is scheduled for the next Sprint

 An Epic that will be broken into smaller stories later on As a: Customer I need: To cancel a hotel booking So that: I can get a refund

As a: Brand Manager I need: A new Brand identity So that: Our product will appeal to our new target market





Where are the details?



Details can be added as Acceptance Criteria – essentially tests.
Here is a rules-based example:

As a: Customer I need: To cancel a hotel booking So that: I can get a refund

- Can a premium customer cancel the same day without a fee?
- Is a non-premium customer charged 10% for a cancellation?
- Is an email confirmation for the cancelled booking sent?
- Is an email sent to the hotel to cancel the room reservation(s)?
Where are the details?



As a: Customer I need: To cancel a hotel booking So that: I can get a refund

These can be added as smaller sub stories

As a: Premium Customer I need: To cancel my booking free of charge So that: I can get a full refund of the money that I paid

As a: Customer I need: A confirmation email to be sent to me So that: I know my cancellation request has been processed As a: Non-premium customer I need: The cancellation fee to be deducted from the refund So that: I get back the money that I am owed





End of Day 1

