



PMP® EXAM PREP
PMI Authorized
Training Partner
BOOTCAMP
Session 3

Class times:
1:00 pm - 5:00 pm EDT
12:00 am - 4:00 pm CDT
11:00 am - 3:00 pm MDT
10:00 am - 2:00 pm PDT

Attendance Tracking Alert
Please log into Zoom with your correct first and last name.
Enter the same information for every session.

This course will assist learners in preparing for PMI's PMP Exam
(2021 Update)

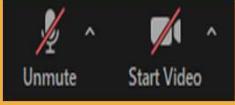
Instructor:
Susan Daniels,
MBA, PMP, DASSM, ATP-I

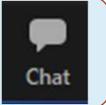
 This webinar will be recorded for quality purposes

Participant cameras and microphones are disabled

1

We are saving everyone's bandwidth usage by disabling cameras and microphones



Find the Chat option in your Zoom command bar 

Change the To: choice in the blue box to everyone. 

Explore the Reactions option in your Zoom command bar 
This is a fun way to provide quick and easy feedback

2

Q&A vs Chat Feature



Use Q&A to ask for

- Technical assistance
- Guidance on how to access course material – Percipio Y or N?
- Clarification on lecture points, if not answered by instructor
 - Please avoid asking for consulting services that are aligned to a highly specific situation.



Use Chat to

- Respond to instructor's questions
- Share examples of tools and techniques discussed
- Ask questions to clarify a concept, term or technique
- Instructor and Mentors will use ** NAME** when responding

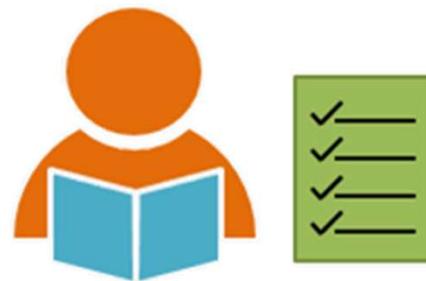
**Please be very patient,
Mentors respond to hundreds of inquiries per session.**

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IS Live ATTENDANCE REQUIRED?

- YES, if you are taking this training to register for the PMP exam live attendance is required. However, this is the exception rule for the 8 Day Bootcamp – You are allowed to miss up to two sessions if you make up the sessions by watching their replays.
- If you miss more than 15 mins at any time beyond the two sessions allowed, you will need to make it up by attending the live session in a different 8-day cohort*.

*Please see the Bootcamp calendar
at <http://calendar.skillsoft.com/> for
information about upcoming sessions.



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IN CASE OF ABSENCE

You can request a replay for a previous session by asking in the Q&A or for a past/current session by emailing the Mentoring Team 48 hours after the session ends using the email address mentoring@skillsoft.com

Please indicate the following in your request:

- The Bootcamp Cohort you are attending
- The Session Number
- The Date and Time Attended in New York Time Zone
- Example:

PMP ATP Bootcamp: 8 Day NA Cohort June/July/August 2022 Cohort
Session 7 Recording
Aug 2, 2022, 1:00 PM New York Time

REPLAY LIMIT:

There is no limit to request a replay for study purposes.

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Notice Change in Course Cadence

Aug
15

Project Management Professional (PMP) ATP Bootcamp: 8 Day NA Cohort August/September/October 2022 Cohort (Sessions 1 to 8)

REQUIRED DATES AND TIMES

- 📅 Monday, Aug 15, 2022 01:00PM - 05:00PM EDT
- 📅 Monday, Aug 22, 2022 01:00PM - 05:00PM EDT
- 📅 Monday, Aug 29, 2022 01:00PM - 05:00PM EDT
- 📅 **Tuesday, Sep 6, 2022 01:00PM - 05:00PM EDT**
- 📅 Monday, Sep 12, 2022 01:00PM - 05:00PM EDT
- 📅 Monday, Sep 19, 2022 01:00PM - 05:00PM EDT
- 📅 Monday, Sep 26, 2022 01:00PM - 05:00PM EDT
- 📅 Monday, Oct 3, 2022 01:00PM - 05:00PM EDT



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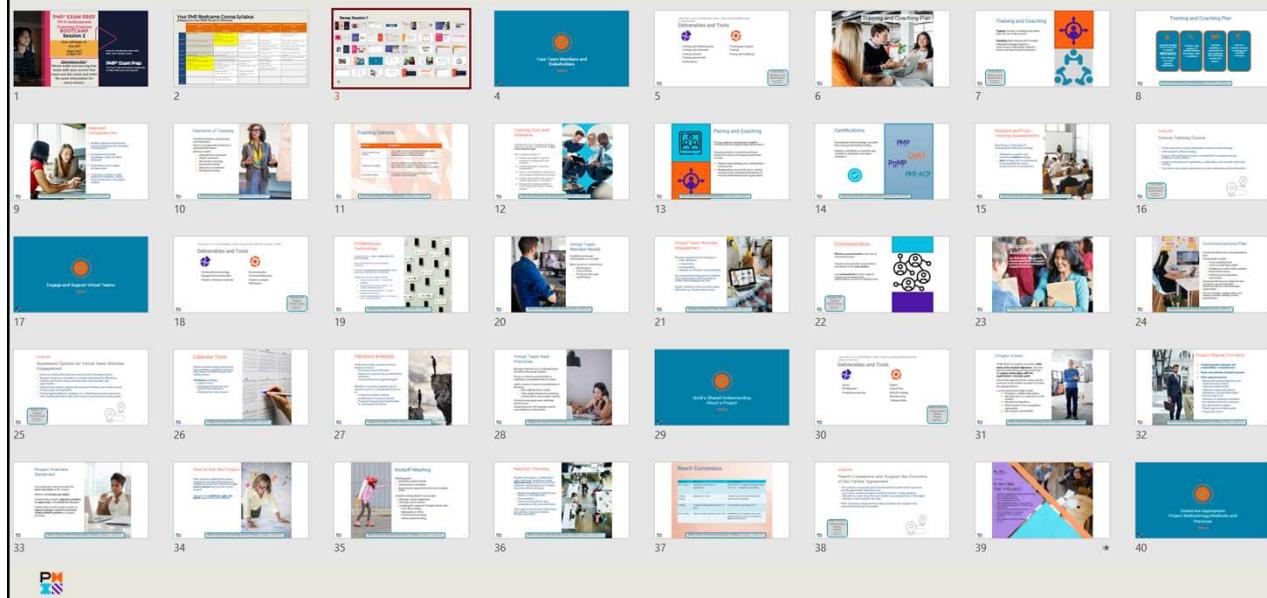
Class Schedule	
	Example for Eastern Time
1 st hour Presentation	1:00-2:00
1 st Break	2:00-2:10
2 nd hour Presentation	2:10-3:00
2 nd Break	3:00-3:10
3 rd hour Presentation	3:10-4:00
3 rd Break	4:00-4:10
4 th hour Presentation	4:10-5:00

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Your PMP Bootcamp Course Syllabus (Mapped to the PMP Student Manual)					
	Creating a High-Performing Team Lesson 1	Starting the Project Lesson 2	Doing the Work Lesson 3	Keeping the Team on Track Lesson 4	Keeping the Business in Mind Lesson 5
Topic A	Build a Team	Determine Appropriate Project Methodology/Methods and Practices	Assess and Manage Risks	Lead a Team	Manage Compliance Requirements
Topic B	Define Team Ground Rules	Plan and Manage Scope	Execute Project to Deliver Business Value	Support Team Performance	Evaluate and Deliver Project Benefits and Value
Topic C	Negotiate Project Agreements	Plan and Manage Schedule	Manage Communications	Address and Remove Impediments, Obstacles, and Blockers	Evaluate and Address Internal and External Business Environment Changes
Topic D	Empower Team Members and Stakeholders	Plan and Manage Budget and Resources	Engage Stakeholders	Manage Conflict	Support Organizational Change
Topic E	Train Team Members and Stakeholders	Plan and Manage Quality of Products and Deliverables	Create Project Artifacts	Collaborate with Stakeholders	Employ Continuous Process Improvement
Topic F	Engage and Support Virtual Teams	Integrate Project Planning Activities	Manage Project Changes	Mentor Relevant Stakeholders	
Topic G	Build Shared Understanding about a Project	Plan and Manage Procurement	Manage Project Issues	Apply Emotional Intelligence to Promote Team Performance	
Topic H		Establish Project Governance Structure	Ensure Knowledge Transfer for Project Continuity		
Topic I		Plan and Manage Project/Phase Closure			

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Recap Session 02



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MASTERY BUILDER

Which of the following should be included in a Communications plan? (Choose two.)

- How and when team meetings are run
- Equipment assigned to each team member
- Project Charter
- Preferred communications approaches with external stakeholders

Creating a
high
performing
team



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MASTERY BUILDER

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- Project Charter
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Creating a high performing team



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MASTERY BUILDER

Which of the following are examples of virtual team collaboration tools? (Choose two.)

- Shared task boards
- Your laptop hard drive
- Social media
- Team chat boards



Creating a high performing team



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MASTERY BUILDER

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Creating a
high
performing
team



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MASTERY BUILDER

Which of the following is a good practice for the use of collaboration tools?

- Select tools with the best features.
- Select tools that the team lead has experience using.
- Define team goals and practices before consideration of what tools the team will need.
- Use the tools that the previous project used.



Creating a
high
performing
team



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MASTERY BUILDER

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Creating a
high
performing
team



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Plan and Manage Schedule

TOPIC C



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STARTING THE PROJECT > PLAN AND MANAGE SCHEDULE

Deliverables and Tools



- | | |
|-----------------------------|-------------------------|
| Activity cost estimates | Product Roadmaps |
| Activity duration estimates | Earned Value |
| Task estimates | Updated schedule |
| Story estimates | Updated release plan |
| Feature estimates | Updated product backlog |
| Updated documents | Network diagram |
| Backlog | Planning meetings |
| Velocity data | Negotiations |
| Project schedule | |
| Release plan | |

Plan and
Manage
Schedule
LESSON 2
TOPIC C



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STARTING THE PROJECT > PLAN AND MANAGE SCHEDULE

Tools, Activities & Processes



- | | |
|--|--------------------------|
| Top-Down Estimating: Expert, Analogous, Parametric | Process assets |
| Bottom Up Estimating: Roll up WBS packages | Backlog management |
| T-Shirt sizing | Release planning |
| Estimating using Fibonacci sequences | Iteration planning |
| Story points | Burndown / Burnup charts |
| Relative estimating | Cumulative flow diagrams |
| Affinity estimates | Throughput analysis |
| PMIS | Velocity analysis |
| | Retrospectives |
| | Review work produced |
| | Backlog reprioritization |
| | Scaling projects |
| | Meetings |
| | Procurement negotiations |

Plan and
Manage
Schedule
LESSON 2
TOPIC C



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Project Schedule

- ✓ Includes start and finish activities
- ✓ Uses specific dates and in a certain sequence
- ✓ Sets dates for project milestones
- ✓ Coordinates activities to ensure on-time project completion
- ✓ Tracks schedule performance and provides visibility of project status to upper management and project stakeholders

Plan and Manage Schedule LESSON 2 TOPIC C

The screenshot shows a project management interface. At the top is a table with columns: Task Name, Duration, Start, and Finish. Below it is a Gantt chart with tasks represented by horizontal bars. The tasks listed in the table are:

Task Name	Duration	Start	Finish
New Business	149 days	Mon 3/9/20	Thu 10/1
Phase 1 - Strategic Plan	48 days	Mon 3/9/20	Wed 5/13
Self-Assessment	9 days	Mon 3/9/20	Thu 3/19
Define business vision	3 days	Mon 3/9/20	Wed 3/11
Identify available skills, information and support	5 days	Thu 3/12/20	Wed 3/18
Decide whether to proceed	1 day	Thu 3/19/20	Thu 3/19
Define the Opportunity	14 days	Fri 3/20/20	Wed 4/8
Research the market and competition	5 days	Fri 3/20/20	Thu 3/26
Interview owners	3 days	Fri 3/27/20	Tue 3/31

The Gantt chart shows tasks like "Manager" and "Business Advisor, Manager" with their respective start and end dates. The chart spans from March 8, 2020, to March 22, 2020.

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Benchmarks and Historical Data

Benchmarking is the comparison of a project schedule to another, similar product/service schedule to provide a good “starting point” for estimation before detailed analysis.

Benchmarks can be useful in the initial stage of scheduling to help assess the feasibility of a project.

Historical data can come from other projects completed within an organization for which detailed information is available.

Plan and Manage Schedule LESSON 2 TOPIC C

A decorative graphic featuring a small silhouette of a person standing on a grid of binary digits (0s and 1s). The grid is composed of numerous small squares, creating a pixelated effect. The person is positioned in the center of the grid, looking upwards.

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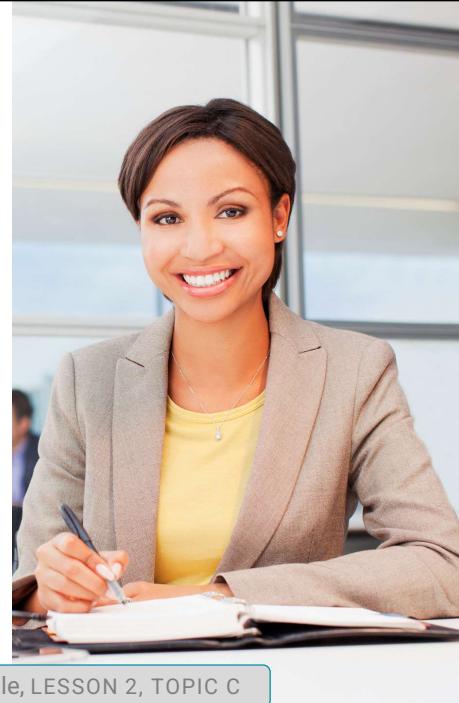
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Schedule Management Plan

Describes how activities will be defined and progressively elaborated.

Identifies a scheduling method and scheduling tool to be used.

Determines the format of the schedule. Establishes criteria for developing and controlling the project schedule.

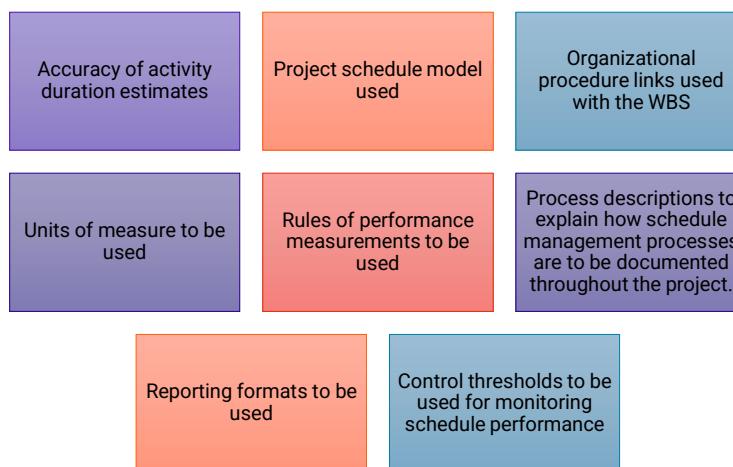


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Components of the Schedule Management Plan



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Schedule Management Considerations for Agile/Adaptive Environments

Consider developing project roadmap.
Schedule individual activities iteratively.

Choose an iterative approach:
 ✓ Iterative scheduling with backlog
 ✓ On-demand scheduling



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GUIDELINES

Develop a Schedule Management Plan

- Review the following:
 - Project management plan (for information to develop the schedule)
 - Project charter (for a summary, high-level milestone schedule)
 - EEFs
 - OPAs
- Use tools and techniques such as expert judgment and historical information.
- Use meetings to develop the schedule management plan.
- Document the schedule management plan for the project.



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LESSON 2
TOPIC C



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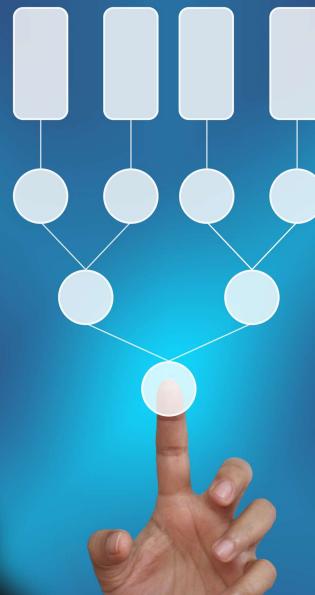
Project Activities

An **activity** is a component of a decomposed work package.

- Activities are not the same as work packages or 'tasks'.

A **work package** is the lowest level of the WBS.

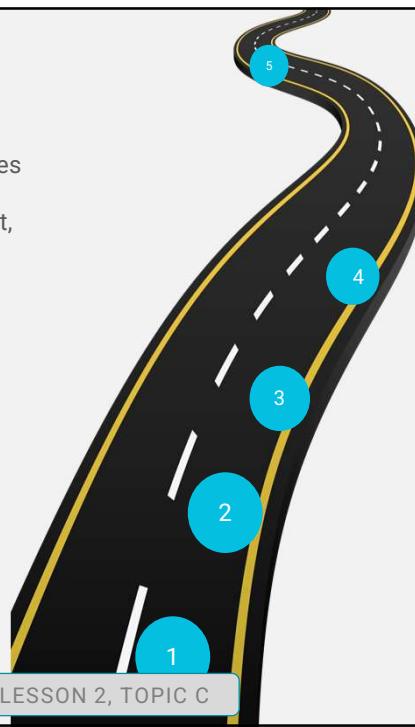
A **task** refers to project management software.



Milestones

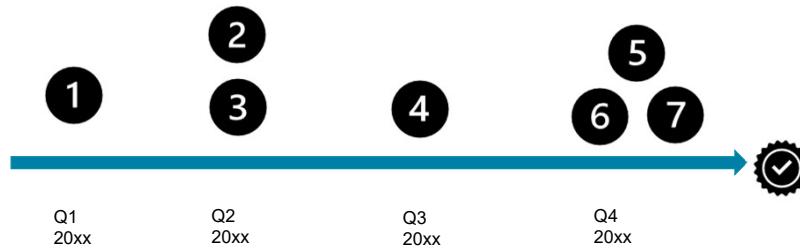
A **milestone list** identifies all project milestones and indicates whether the milestone is mandatory, such as those required by contract, or optional, such as those based on historical information.

Milestones have zero duration because they represent a significant point or event.



Milestone Chart

- ✓ Provides the summary level view of a project's milestones.
- ✓ Uses icons or symbols.
- ✓ Useful for upper management who only require an overview.



GUIDELINES

Estimating Project Activities

- Review:
 - Schedule management plan
 - Scope baseline for WBS, deliverables, assumptions, and constraints
 - EEFs
 - OPAs
- Analyze and decompose each work package of the WBS into activities that will be required to produce the deliverable.
- Consult SMEs about unfamiliar material.
- Evaluate all constraints and assumptions for their possible impact on activity definition.
- After decomposing each work package into activities, evaluate the activity list.



Activity Dependency

Relationship indicates whether the start of an activity is **contingent on an event or input from outside the activity**.

Activity dependencies determine the precedence relationships.

Example activity: Designing Room Layouts



- Architect needs to assess the functionality of a room design.
- Assessment **cannot start until** workers finish framing the walls, windows, and roof.
- **After** structure is in place, **then** architect can reassess design plans to determine if modifications are necessary.



Types of Activity Dependencies

Mandatory

A relationship that is contractually required or inherent in the nature of the work.

Discretionary

A relationship that is established based on knowledge of best practices within a particular application area or an aspect of the project where a specific sequence is desired.

External

A relationship between project activities and non-project activities.

Internal

Contingent on inputs within the project team's control.



Precedence Relationships

Precedence relationships express a logical dependency in precedence diagramming methods.

It is a logical relationship between activities that describes what the activity sequence should look like.

Precedence relationships are always assigned to activities based on the dependencies of each activity:

- ✓ Predecessor activity drives the relationship; most often, it occurs first.
- ✓ Successor activity is driven by the relationship.

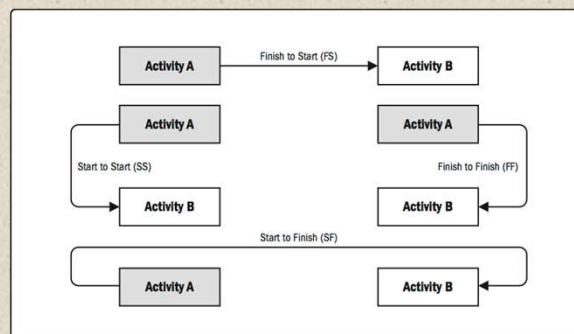


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Types of Precedence Relationships



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**More
about...**

Course: Deep Dive into the Project Schedule (2021 Update)
 Video: Activity Relationships and Dependencies (8:08 run time)

Activity Relationships and Dependencies

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GUIDELINES

Sequence Project Activities

- Review:
 - Schedule management plan (for information on the scheduling method and tool, and information on how activities may be sequenced)
 - Activity list for all project schedule activities
 - Activity attributes for each activity
 - Milestone list for the dates for specific schedule milestone events
 - Project scope statement
 - EEFs
 - OPAs
- Use tools and techniques such as the precedence diagramming method (PDM), dependency determination, and leads and lags to develop the project schedule network diagram.
- Document the project schedule network diagram and update any project documents, as needed.


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Activity Duration Estimates



Activity duration estimate

The quantitative assessment of the likely number of time periods that are required to complete an activity.



Elapsed time

The actual calendar time required for an activity from start to finish.



Effort

The number of labor units required to complete a scheduled activity or WBS component, often expressed in hours, days, or weeks. Contrast with duration.

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TOPIC C



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GUIDELINES

Estimate Activity Durations

- Involve the work package owners or those familiar with the work of the activity.
- Consult lessons learned and historical information.
- Review the schedule management plan.
- Determine how you want to quantify the work that needs to be done.
- Consider resource requirements and capabilities.
- Review the resource requirements for each activity.
- Check the resource calendars for resource availability.
- Consider interactions with other projects or operations.
- Review the project scope statement for assumptions and constraints.
- Review the risk register for risks that may affect resource estimation.
- Review the resource breakdown structure.
- Document the activity duration estimates.



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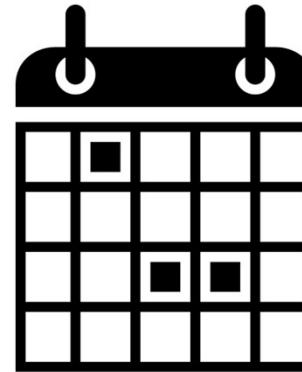
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Schedule Presentation Formats

Select the type of schedule to suit your project.

- ✓ Gantt Chart
- ✓ Milestone Chart
- ✓ Project Schedule Network Diagram with Dates
- ✓ Roadmap
- ✓ Task board
- ✓ Kanban board
- ✓ Burndown chart



Plan and Manage Schedule
LESSON 2
TOPIC C

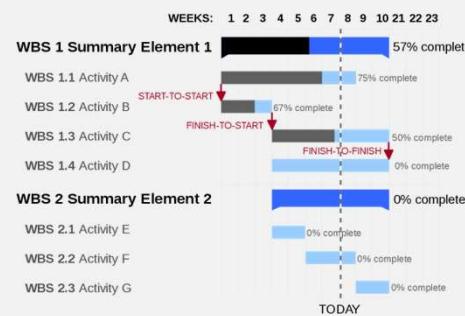


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Gantt Chart

Useful for:

- ✓ Start and end dates, duration, and order
- ✓ Precedence relationships
- ✓ Percentage completion and actual progress
- ✓ Presentation of project status to the team and management



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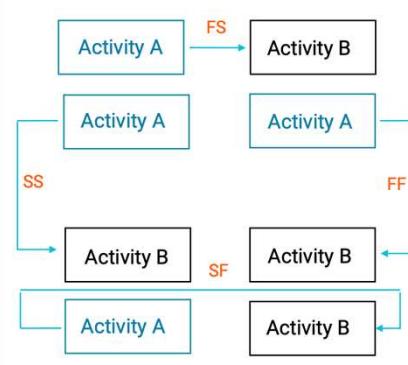
Project Schedule Network Diagram with Dates and Dependencies

Project schedule can be shown with or without dependencies.

Network diagrams have clear advantages, they assign start and finish dates to activities and show the interrelationship of activities with arrows.

Further benefits:

- ✓ **Clear visual** of project progress, workflow, and interdependencies of activities.
- ✓ **Justification** of time estimate for the project.
- ✓ **Planning and organizational aid**.
- ✓ **Schedule compression opportunities** are more easily identifiable.



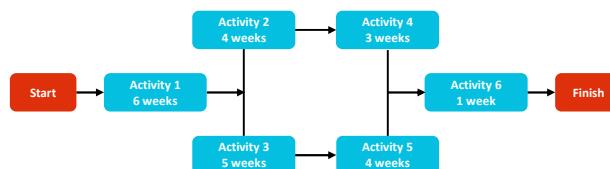
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Use the Critical Path Method

- Sequence activities to represent the longest path through a project
- Goal is to determine the shortest possible project duration.
- Use early start (ES); early finish (EF); late start (LS); and late finish (LF) dates for all activities.
- Do not factor in resource limitation.



$$\begin{aligned} 1[6w] + 2[4w] + 4[3w] + 6[1w] &= 14 \text{ weeks} \\ 1[6w] + 3[5w] + 5[4w] + 6[1w] &= 16 \text{ weeks Critical Path} \end{aligned}$$

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Spotlight Video: Working with the Critical Path

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**More
about...**

Course: Deep Dive into the Project Schedule (2021 Update)

Video: Critical Path Method Exercise (5:51 run time)

Watch: Start to 4:20

Critical Path Method Exercise

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About Float

Float is the amount of time an activity can be delayed from its early start date without delaying the project finish date or consecutive activities.

Total float is the amount of time that a schedule activity can be delayed or extended from its early start date without delaying the project finish date or violating a schedule constraint.

Free float is the amount of time that a scheduled activity can be delayed without delaying the early start date of any successor or violating a schedule constraint.

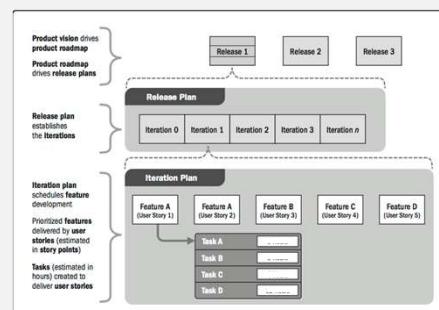


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Agile Release Planning

- ✓ High-level summary timeline of the release schedule based on product roadmap and vision for the product's evolution.
- ✓ Determines the number of iterations or sprints in the release
- ✓ Allows product owner and team to decide:
 - how much needs to be developed
 - how long it will take to have a releasable product based on business goals, dependencies, and impediments.



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Ongoing Progress Based on Methodology

Traditional - Measure project progress according to schedule by:

- ✓ Monitoring project status to update the schedule.
- ✓ Managing changes to schedule baseline.

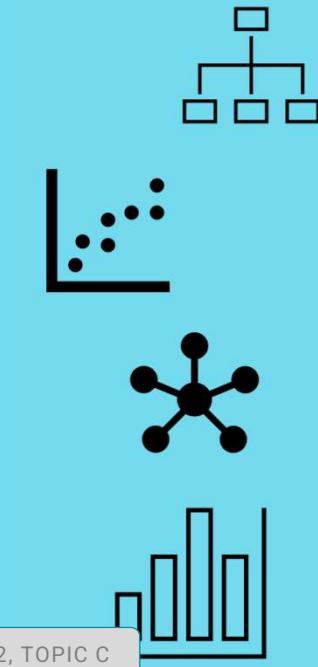
Agile - Evaluate progress by:

- ✓ Comparing the total amount of work delivered and accepted to the amount estimated for the current time period.
- ✓ Reviewing completed work in regular Sprint demos.
- ✓ Conducting scheduled reviews to record lessons learned (or retrospectives).
- ✓ Determining the rate at which deliverables are produced, validated, and accepted.



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Resource Optimization Techniques



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Smoothing and Levelling

Use Resource Optimization to adjust the start and finish dates of activities.

You need to adjust planned resource use so that it's equal to or less than resource availability.

Adjust the schedule model due to demand and supply of resources.

Use smoothing and levelling techniques.



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Plan and Manage Schedule
LESSON 2
TOPIC C

Smoothing

- Adjusts the activities of a schedule model to keep resource requirements within predefined resource limits and within free and total floats.
- Does not change the critical path is not changed nor delay the completion date.
- This method may not be able to optimize all resources.

Levelling

- Adjusts start and finish dates based on resource constraints
- Goal is to balance demand for resources with available supply.
- Use when shared or critically required resources have limited availability or are over-allocated
- Can change the critical path.

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More about...

Course: Managing the Project Schedule (2021 Update)
Video: Resource Leveling (5:16 run time)

Resource Leveling

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More about...

Course: Managing the Project Schedule (2021 Update)
Video: Resource Smoothing (5:26 run time)

Resource Smoothing

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Schedule Compression Techniques

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Schedule Compression Techniques

Crashing

- Shortens schedule duration for the least incremental cost by adding resources e.g. overtime, additional resources
- Works only for activities on the critical path
- Does not always produce a viable alternative and may result in increased risk and/or cost.

Fast-tracking

- Perform activities in parallel to reduce time
- May result in rework, increased risk, and increased cost

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More about...

Course: Managing the Project Schedule (2021 Update)
Video: Crashing the Schedule (4:29 run time)

Crashing the Schedule

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More about...

Course: Managing the Project Schedule (2021 Update)
Video: Fast Tracking (5:10 run time)

Fast Tracking

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Coordination with Other Projects

- ✓ If the project is part of a program or a portfolio, evaluate the schedule status for effects on other program or portfolio components.
- ✓ A delay (or acceleration) of a project may not necessarily impact other projects.
- ✓ However, if the delay or acceleration is caused by activities on the project's critical path and that project is critical to the schedule of other projects, the overall effect can be significant.



Plan and Manage Schedule, LESSON 2, TOPIC C

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Plan and Manage Budget and Resources

TOPIC D



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STARTING THE PROJECT > PLAN AND MANAGE BUDGET AND RESOURCES

Deliverables and Tools



Cost baseline
Management reserve
Resource management plan
Change requests
Cost forecasts
Risk analysis

Plan and
Manage
Budget and
Resources
LESSON 2
TOPIC D



Estimating techniques: Three Point,
Analogous, Parametric, T-Shirt sizing,
Planning poker
Review organization data
Meetings
Leverage PMIS
Understand change control
Use velocity data and analysis
Throughput analysis
Cost Variance, EVM, EAC
Features accepted vs feature remaining

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Cost Estimates

Develop an approximation of the cost for each activity in a project.

Use logical estimates to provide a basis for making sound decisions and they establish baselines.

IT
Labor
Materials
Facilities
Equipment
Services
Reserve

Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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Estimating Techniques – Advantages and Disadvantages

Analogous Estimating



Can ensure no work is inadvertently omitted from work estimates.



Can sometimes be difficult for lower-level managers to apportion cost estimates.

Parametric Estimating



Is not time consuming



May be inaccurate, depending on the integrity of the historical information.

Bottom-up Estimating



Is very accurate and gives lower-level managers more responsibility.



May be very time consuming
Can be used only after the WBS has been well-defined.



Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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**More
about...**

Course: Deep Dive into Project Costs and Estimates (2021 Update)

Video: Traditional Approach to Cost Estimates (3:35 run time)

Traditional Approach to Cost Estimates

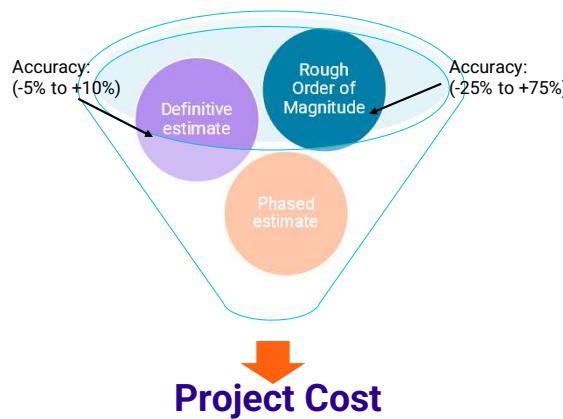
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Common Estimate Types



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Project Governance

- ✓ Budget management is a critical project oversight and within the purview of project governance.
- ✓ Deviations in budget, scope, schedule, resources or quality, will impact the project.
- ✓ Project governance tells you whom these issues would impact and how to deal with them.
- ✓ Tailor cost estimation approach to phases of the project life cycle.



Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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Compliance

Projects must be compliant with internal and external standards, such as:

- ✓ Appropriate government regulations
- ✓ Corporate policies
- ✓ Product and project quality
- ✓ Project risk

The Project Compliance Plan is a sub-plan of the project management plan.

In this step, you:

- ✓ Classify compliance categories
- ✓ Determine potential threats to compliance
- ✓ Analyze the consequences of noncompliance
- ✓ Determine necessary approach and action to address compliance needs



Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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Lessons Learned Register

- ✓ Use during and after projects.
- ✓ Start with budgets from previous, similar projects.
- ✓ They contain valuable cost-estimating information - both successes and shortcomings.



Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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GUIDELINES

Estimate Costs

- Gather estimates for individual work packages.
- Check with the resource supplier to validate assumptions.
- Choose a suitable estimating technique according to context.
- Look for alternative costing options.
- Determine which units of measure to use.
- Consider impact of risks on cost.
- Ensure that cost estimates are assigned to the right account.
- Ensure estimates include resource costs, level of estimate, and a list of assumptions.



Plan and
Manage
Budget and
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LESSON 2
TOPIC D



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GUIDELINES

Estimate Budget

- Aggregate the estimated costs of individual activities or work packages to establish an authorized cost baseline.
- Ensure budget contains funding needed to complete the project as defined in the scope baseline and the project schedule.
- Measure project cost performance against this cost baseline



Plan and
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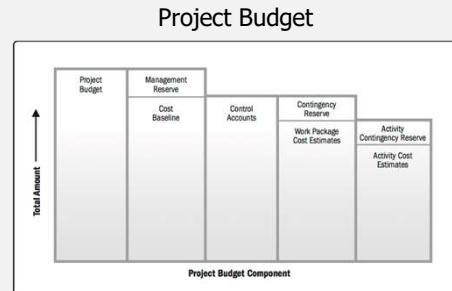
Cost Baseline

Can be changed only through formal change control procedures and is the basis for comparison to actual results.

Cost baseline:

- ✓ Monitors and measures cost performance
- ✓ Includes a budget contingency
- ✓ Is tailored for each project

Other components of the project budget are depicted at right.



control accounts
 activity management reserve
 control accounts contingency reserve
 activity cost estimate
 contingency reserve
 work package estimates



GUIDELINES

Estimate Cost Baseline

- Gather inputs to establish the baseline e.g. WBS, project schedule, cost estimates, and risk management plan.
- Assign work to dates on project schedule and allocate funds for each activity or work package for assigned time period.
- Consider a contingency reserve to cover expenses associated with risks.
- Total the costs for each time period, then plot these on a chart to create an S-curve of the baseline.
- Publish and distribute the cost baseline to the appropriate project stakeholders.





Budget Challenges

- ✓ Ideally, budget is set during project planning and does not change.
- ✓ However, the following changes can pose a challenge:
 - New/changed project requirements.
 - New risks, or changes to the probabilities or impacts of existing risks.
 - Changes to cost estimates resulting from economic factors, procurement contract modifications, resource costs, etc.

Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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Response to Budget Challenges

When changes or challenges occur, you must tailor:

- ✓ Budget or funding
- ✓ Cost
- ✓ Schedule
- ✓ Scope

If the budget remains fixed and additional funds are not available, then the project must change.

Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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Funding Limit Reconciliation

Keep in mind:

- ✓ Most budgets assume steady incoming and outgoing flows.
- ✓ Large, sporadic expenditures are usually incompatible with organizational operations.
- ✓ Funding limits help regulate the outgoing capital flow to protect against overspending.



Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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GUIDELINES

Anticipate Future Budget Challenges

- Keep the stakeholder register current and be aware of changes to project requirements if new stakeholders are added to the project.
- Monitor risks frequently to look for new risks and changes to existing ones.
- Monitor the performance of suppliers and vendors.
- Monitor all changes to the project and follow the Change Management System to try to keep them within budget.



Plan and
Manage
Budget and
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LESSON 2
TOPIC D



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GUIDELINES

Determine a Budget

- Review:
 - Cost management plan
 - Human resource management plan
 - Scope baseline for project scope statement, WBS, and WBS dictionary
 - Risk register to consider any risks that may impact cost estimation
 - EEFs and OPAs
- Check the project schedule for type, quantity, and duration of resources.
- Use appropriate tools and techniques.
- Document the project budget, creating a cost baseline.
- Understand project funding requirements or cash flow to enable the project.
- Update project documents, as needed.



Plan and Manage Budget and Resources, LESSON 2, TOPIC D

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Plan and Manage Quality of Deliverables

TOPIC E



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STARTING THE PROJECT > PLAN AND MANAGE QUALITY OF DELIVERABLES

Deliverables and Tools



Quality Management Plan
Quality Metrics
Quality Assurance
Quality Control



Cost benefits analysis
Cost of Quality
Benchmarking
Quality audit
Process analysis
Measure quality
Verify deliverables
Quality measurement tools

Plan and
Manage
Quality of
Deliverables
LESSON 2
TOPIC E

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Quality Standards and Regulations

Standards - Documents established as a model by an authority, custom, or by general consent.

Regulations - These requirements can establish product, process, or service characteristics, including applicable administrative provisions that have government-mandated compliance.

De facto regulations - Regulations that are widely accepted and adopted through use.

De jure regulations - Regulations that are mandated by law or have been approved by a recognized body of experts.

ISO 9000 Series - A quality system standard that can be applied to any product, service, or process in the world.



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Verified Deliverables

- ✓ Project team **verifies** deliverables based on quality standards and requirements
- ✓ The verified deliverables are **presented to and accepted** (or validated) by the customer – resulting in accepted deliverables.
- ✓ **Measure** products and outputs against the project's quality standards.
- ✓ **Implement** corrections and controls when quality standards are neither met nor within acceptable ranges.



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Quality Management Plan

- ✓ Describes the **activities and resources** necessary for the project management team to achieve the quality objectives.
- ✓ May be formal or informal, detailed, or broadly framed. **Style and detail** are determined by project requirements.
- ✓ **Review** the quality management plan early in the project.
- ✓ Benefits:
 - Decisions based on accurate information
 - Sharper focus on the project's value proposition
 - Cost reductions
 - Mitigate schedule overruns from rework



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Cost of Quality (CoQ)

CoQ is all costs incurred over the life of the product by investment in preventing nonconformance to requirements, appraisal of the product or service for conformance to requirements, and failure to meet requirements.



Cost of Conformance	Cost of Nonconformance
Prevention Costs (Build a quality product) <ul style="list-style-type: none"> • Training • Document processes • Equipment • Time to do it right Appraisal Costs (Assess the quality) <ul style="list-style-type: none"> • Testing • Destructive testing loss • Inspections <small>Money spent during the project to avoid failures</small>	Internal Failure Costs (Failures found by the project) <ul style="list-style-type: none"> • Rework • Scrap External Failure Costs (Failures found by the customer) <ul style="list-style-type: none"> • Liabilities • Warranty work • Lost business <small>Money spent during and after the project because of failures</small>



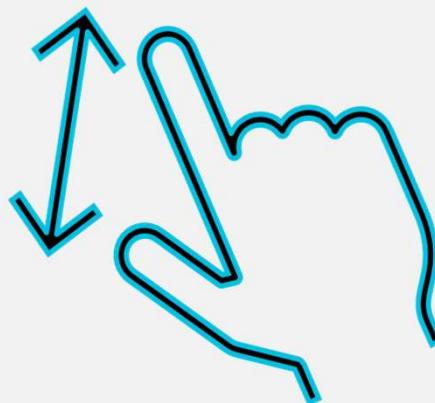
Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Quality Metrics

Quality metrics - A description of a project or product attribute and how to measure it.

Tolerance - The quantified description of acceptable variation for a quality requirement.



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Quality Audit

- ✓ Improves quality performance of a project.
- ✓ Can be conducted at scheduled or random intervals.
- ✓ Topics include:
 - Quality management policy
 - Collection and use of information
 - Analytical methods
 - Cost of quality
 - Quality process design

Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Course: Deep Dive into Project Quality (2021 Update)
Video: Cost of Quality (16:13 run time)
Watch: Start to 4:13

Cost of Quality

Barbara Waters

skillsoft®

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GUIDELINES

Manage Quality

- Ensure that random and/or scheduled quality audits are conducted by qualified auditors.
- Use one or more of the quality assurance tools and techniques to determine the causes of quality problems of the project's product, service, systems, or processes.
- Identify and implement the appropriate actions to take to increase the effectiveness and efficiency of the project team's work results.

Plan and
Manage
Quality of
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Control Quality Tools

Data Gathering



- Checklists/Check Sheets
- Statistical Sampling
- Questionnaires and Surveys

Data Analysis



- Performance Reviews
- Root Cause Analysis

Data Representation



- Cause-and-Effect Diagram
- Control Charts
- Histograms
- Scatter Diagrams



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Data Gathering



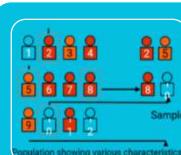
Questionnaires and Surveys

- Written set of questions, quickly accumulates information from a large number of respondents.
- Useful for varied audiences, for quick turnaround, or geographical dispersion of respondents



Checklists

- Check Sheets
A structured tool, usually component-specific
- Verifies performance of required steps or completion of requirements
- Used to organize facts to facilitate data collection about a potential quality problem
- Useful for gathering attribute data while performing inspections for defects.



Statistical sampling

- Choosing part of a population of interest for inspection.
- Determine characteristics of an entire population based on measurement of representative sample.



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

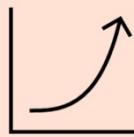
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Data Analysis

Performance Reviews

Technique that is used to measure, compare, and analyze actual performance of work in progress on the project against the baseline.

- Critical chain method
- Earned value management
- Trend analysis
- Critical path method



Root Cause Analysis

Analytical technique used to determine the basic underlying reason that causes a variance, defect, or a risk.

- Using gathered data, identify the cause of the problem.
- Goal is to pinpoint the exact cause.
- Follow issue back to the initial trigger.
- Use RCA tools - Failure Modes and Effects Analysis (FMEA), a fishbone diagram, a Pareto chart, a scatter diagram



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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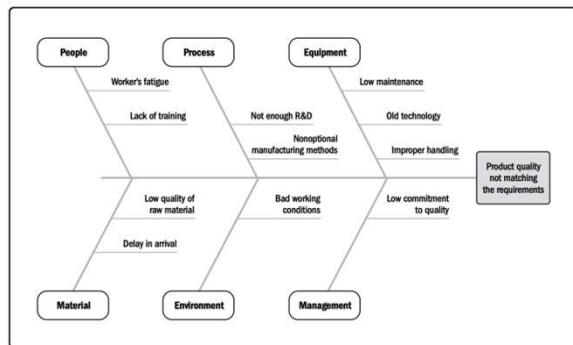
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Data Representation (1 of 4)

Cause and Effect Diagram

Fishbone diagrams, why-why diagrams, or Ishikawa diagrams

Breaks down the causes of the problem statement identified into discrete branches, helping to identify the main or root cause of the problem.



Example fishbone diagram

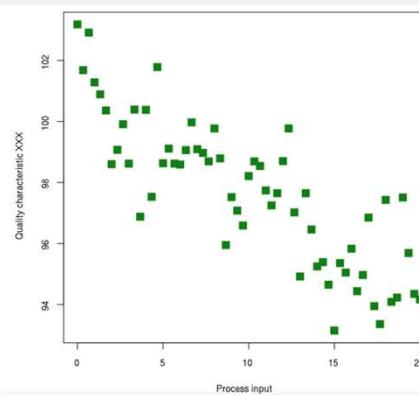
Plan and Manage Quality of Deliverables
LESSON 2 TOPIC E

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Data Representation (2 of 4)

Scatter Diagram

- ✓ A graph that shows the relationship between two variables.
- ✓ Demonstrates a relationship between any element of a process, environment, or activity on one axis and a quality defect on the other axis.



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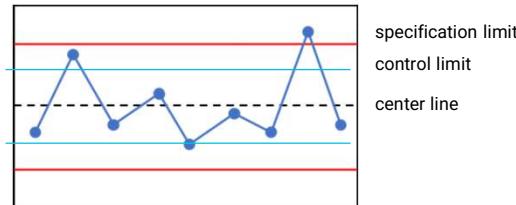
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Data Representation (3 of 4)

Control Chart

A tool used to determine the predictability, behavior and stability of a process over time.

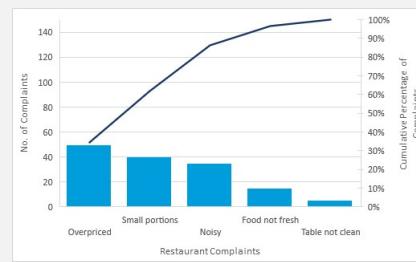
- ✓ A graphic display of project data against established control limits to reflect both the maximum and minimum values.
- ✓ Gives visibility to where corrective actions can prevent further problems.
- ✓ Ideal for repetitive processes with predictable results.



Data Representation (4 of 4)

Pareto chart

- ✓ A histogram used to rank causes of problems in a hierarchical format.
- ✓ Use to help determine the most frequent defects, complaints, or other factors that affect quality.
- ✓ Demonstrates the frequency of occurrence
- ✓ Analyzes data sets related to a specific problem or issue.
- ✓ Does not define the root cause of a problem.



GUIDELINES

Control Product Quality

- Conduct inspections to detect quality errors during project work.
- Use Pareto diagrams to focus corrective actions on the problems with the greatest effect on quality.
- Use control charts to analyze and communicate the variability of a process or project activity over time.
- Identify ways to eliminate causes of unsatisfactory results.
- Use flowcharts to identify redundancies, missed steps, or the source of quality performance problems.
- Initiate process adjustments by implementing corrective or preventive actions.
- Continue to monitor, measure, and adjust quality throughout project life cycle.



Plan and Manage Quality of Deliverables, LESSON 2, TOPIC E

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Integrate Project Planning Activities

TOPIC F

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Integration Management

- ✓ **Assessment and coordination** of all plans and activities that are built, maintained, and executed throughout a project.
- ✓ A holistic, integrated view **ties plans together**, aligns efforts, and highlights how they depend on each other.
- ✓ An integrated view of all plans can **identify and correct gaps or conflicts**.
- ✓ A consolidation of the plans **encapsulates the overall project plan** and its intended business value.

Integrate Project Planning Activities, LESSON 2, TOPIC F

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Project Management Plan

The document that describes how the project will be executed, monitored, controlled, and closed.

Integrate Project Planning Activities, LESSON 2, TOPIC F

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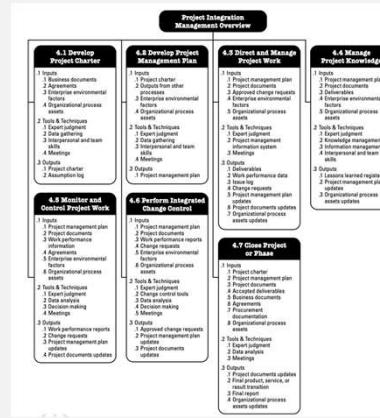
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Project Integration Management Processes

Projects and project management are integrative by nature. This is an overview of the processes that project managers need to know.

Also know that:

- ✓ These processes overlap and interact with each other.
- ✓ The links among these processes are often iterative.



Integrate Project Planning Activities, LESSON 2, TOPIC F

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Project Management Information System (PMIS)

An information system e.g. Microsoft Project consisting of the tools and techniques used to gather, integrate, and disseminate the outputs of project management processes.

The PMIS enables quick and efficient work.



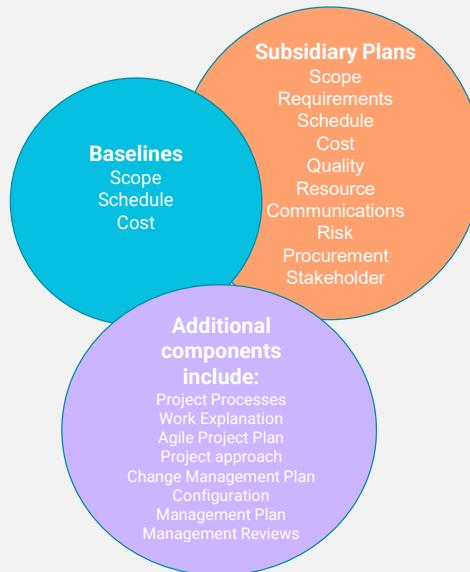
Integrate Project Planning Activities, LESSON 2, TOPIC F

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Project Management Plan Components

- ✓ These are a combination of essential and supporting processes used to run a project.
- ✓ Ensure the essential plans and processes are in place.
- ✓ Adapt and tailor the supporting plans and processes to your project.
- ✓ Consider the needs of the project to determine which components of the project management plan are needed.



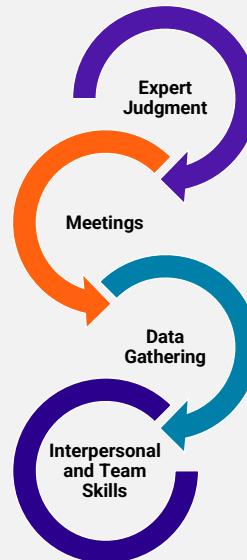
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Project Management Plan Tools and Techniques

- ✓ Use **expert judgment** to make critical decisions.
- ✓ Use **meetings** to facilitate communication and understanding.
- ✓ **Gather data** to understand the project
- ✓ Leverage **interpersonal and team skills** to be an effective leader.



Integrate Project Planning Activities, LESSON 2, TOPIC F

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Managing Change

Integrate Project Planning Activities, LESSON 2, TOPIC F

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Configuration Management Plan

Identify and account for project artifacts under configuration control, and how to record and report changes to them.

Change Management Plan

Provides direction for managing the change control process and documents the roles and responsibilities of the change control board (CCB).



Identification, maintenance, status reporting, and verification of configurable items

Identification, impact analysis, documentation, and approving or rejecting of change requests.

Integrate Project Planning Activities, LESSON 2, TOPIC F

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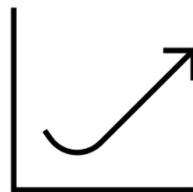
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Change Management Plan

Answers the following questions:

- Who can propose a change?
- What exactly constitutes a change?
- What is the impact of the change on project objectives?
- What are steps to evaluate a change request before approving or rejecting it?
- When a change request is approved, what project documents will record the next steps (actions)?
- How will you monitor these actions to confirm completion and quality?



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GUIDELINES

Develop a Project Management Plan

- Review:
 - Project charter - for the high-level boundaries of the project
 - Outputs from other processes
 - EEFs and OPAs
- Use tools and techniques.
- Use facilitation techniques.
- Document the project management plan.
- Assess incremental delivery options.

Integrate Project
Planning Activities
LESSON 2
TOPIC F



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Factoring in Dynamic Change

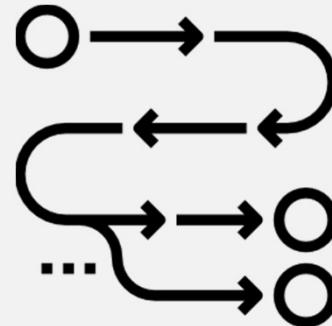
Highly dynamic and complex projects which are very common, require a robust approach to change.

Some Agile approaches for managing change:

Disciplined Agile (DA) - a hybrid tool kit that harnesses hundreds of agile practices to devise the best "way of working" (WoW) for your team or organization.

Scrum of Scrums - A technique for operation of Scrum at scale for multiple teams working on the same product, coordinating discussions of progress on interdependencies, and focusing on how to integrate the delivery of software, especially in areas of overlap.

Scaled Agile Framework (SAFe®) - A knowledge base of integrated patterns for enterprise-scale, lean-agile development.



Integrate Project Planning Activities, LESSON 2, TOPIC F

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Your PMP Bootcamp Course Syllabus (Mapped to the PMP Student Manual)

	Creating a High-Performing Team Lesson 1	Starting the Project Lesson 2	Doing the Work Lesson 3	Keeping the Team on Track Lesson 4	Keeping the Business in Mind Lesson 5
Topic A	Build a Team	Determine Appropriate Project Methodology/Methods and Practices	Assess and Manage Risks	Lead a Team	Manage Compliance Requirements
Topic B	Define Team Ground Rules	Plan and Manage Scope	Execute Project to Deliver Business Value	Support Team Performance	Evaluate and Deliver Project Benefits and Value
Topic C	Negotiate Project Agreements	Plan and Manage Schedule	Manage Communications	Address and Remove Impediments, Obstacles, and Blockers	Evaluate and Address Internal and External Business Environment Changes
Topic D	Empower Team Members and Stakeholders	Plan and Manage Budget and Resources	Engage Stakeholders	Manage Conflict	Support Organizational Change
Topic E	Train Team Members and Stakeholders	Plan and Manage Quality of Products and Deliverables	Create Project Artifacts	Collaborate with Stakeholders	Employ Continuous Process Improvement
Topic F	Engage and Support Virtual Teams	Integrate Project Planning Activities	Manage Project Changes	Mentor Relevant Stakeholders	
Topic G	Build Shared Understanding about a Project	Plan and Manage Procurement	Manage Project Issues	Apply Emotional Intelligence to Promote Team Performance	
Topic H		Establish Project Governance Structure	Ensure Knowledge Transfer for Project Continuity		
Topic I		Plan and Manage Project/Phase Closure			

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BOOTCAMP DAILY SURVEY



- Our goal is to provide the best possible Bootcamp experience for a live streaming webinar, with hundreds of participants.
- For each Bootcamp session,
 - Let us know **what you liked** about the experience – your comments really matter.
 - Please include a thank you **to the mentor(s)** working off camera.
 - If you have **recommendations**, share those too!

We sincerely value your opinion!

LOOK FOR THE SURVEY LINK IN THE CHAT

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Additional Resources

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MASTERY BUILDER

What is the process to create a project budget?

- Take the ROM and decompose it into the cost of work packages.
- Combine all individual activity cost estimates and aggregate them for the entire project. Submit this to the sponsor and modify it if necessary. The agreed-upon final cost estimate is the budget.
- Estimate costs necessary to finish project work, including direct costs, labor, materials, equipment, facilities, services, information technology, and contingency reserves.
- Create an S-curve with cost on the Y axis and time on the X axis.



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Creating a
high
performing
team



108

MASTERY BUILDER

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Creating a high performing team



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MASTERY BUILDER

Which of the following is the correct definition of the critical path?

- The critical path is the fastest path through the network diagram which represents the longest time in which the project can be completed.
- The critical path is the shortest path through the network diagram which represents the longest time in which the project can be completed.
- The critical path is the earliest path through the network diagram which represents the latest time in which the project can be completed.
- The critical path is the longest path through the network diagram which represents the shortest time in which the project can be completed.



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Creating a high performing team



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MASTERY BUILDER

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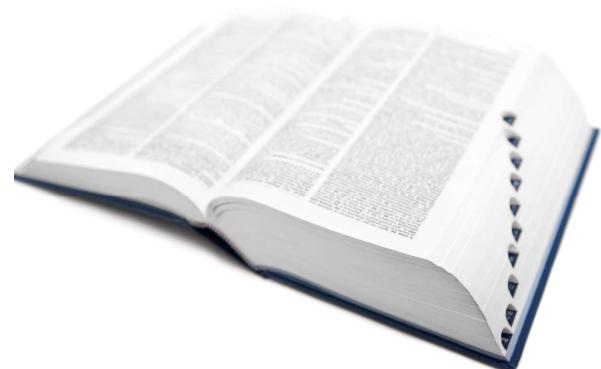
Creating a
high
performing
team



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VOCABULARY FROM TODAY'S SESSION



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Schedule Management Plan



DEFINITION

A component of the project or program management plan that establishes the criteria and activities for developing, monitoring, and controlling the schedule.



113

Project Activity



DEFINITION

A distinct, scheduled portion of work performed during a project.



114

Milestones



DEFINITION

A significant point or event in a project, program, or portfolio.



115

Activity Dependency



DEFINITION

A logical relationship that exists between two project activities.



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Gantt Chart



DEFINITION

A bar chart of schedule information where activities are listed on the vertical axis, dates are shown on the horizontal axis, and the activity durations are shown as horizontal bars placed according to start and finish dates.



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Critical Path Method



DEFINITION

Estimates the minimum project duration and determines the amount of schedule flexibility on the logical network paths within the schedule model.



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Critical Path Activity



DEFINITION

Any activity on the critical path in a project schedule.



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Cost Baseline



DEFINITION

The cost baseline is the approved version of the time-phased project budget, excluding any management reserves.



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Funding Limit Reconciliation



DEFINITION

The process of comparing the planned expenditure of project funds against any limits on the commitment of funds for the project to identify any variances between the funding limits and the planned expenditures.



121

Quality



DEFINITION

The degree to which a set of inherent characteristics fulfill requirements.



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Quality Management Plan



DEFINITION

A component of the project management plan that describes how applicable policies, procedures, and guidelines will be implemented to achieve the quality objectives.



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Quality Audit



DEFINITION

A structured, independent process to determine if project activities comply with organizational and project policies, processes, and procedures.



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