



DETAIL TECHNIQUES

ZPM_EN_0082 Project Training Detail techniques Planning Rev-0 - Project Professional

Jeroen Zwiers

File Task Resource Report Project **View** Developer Help Gantt Chart Format Tell me what you want to do

Task Views: Gantt Chart, Usage, Board, Calendar, Other Views

Resource Views: Team, Planner, Resource Sheet, Other Views

Data: Sort, Outline, Tables, Filter, Group by

Zoom: [B] Days, Zoom, Entire Project, Selected Tasks

Split View: Timeline, Details

Window: New Window, Switch Windows, Arrange All, Hide

Macros: Macros

Start: Mon 1-1-24 08:00

Finish: Sat 20-4-24 17:00

Project Management: Mon 1-1-24 08:00 - Thu 18-4-24 17:00

Engineering: Wed 31-1-24 08:00 - Mon 4-3-24 17:00

Procurement and Site Works: Wed 31-1-24 08:00 - Sat 20-4-24 17:00

Project kick-off: Tue 30-1-24 17:00

Design review: Wed 28-2-24 17:00

Task Mode	Task Name	Constraint Type	Type	Task Calendar
0	ZPM_EN_0082 Project Training Detail Techniques Planning	As Soon As Possible	Fixed Duration	None
1	1 Milestones	As Soon As Possible	Fixed Duration	None
2	1.1 Project kick-off	As Soon As Possible	Fixed Work	None
3	1.2 Design review	As Soon As Possible	Fixed Work	None
4	2 Project Management	As Soon As Possible	Fixed Duration	None
5	2.1 Initiating	As Soon As Possible	Fixed Work	None
6	2.2 Planning	As Soon As Possible	Fixed Work	None
7	2.3 Executing	As Soon As Possible	Fixed Work	None
8	2.4 Monitoring and Controlling	As Soon As Possible	Fixed Work	None
9	2.5 Closing	As Soon As Possible	Fixed Work	None
10	3 Engineering	As Soon As Possible	Fixed Duration	None
11	3.1 Process	As Soon As Possible	Fixed Work	None
12	3.2 Civil	As Soon As Possible	Fixed Work	None
13	3.3 Mechanical	As Soon As Possible	Fixed Work	None
14	3.4 Design review	Must Start On	Fixed Work	None
15	3.5 Electrical and Instrumentation	As Soon As Possible	Fixed Work	None
16	3.6 Automation	As Soon As Possible	Fixed Work	None
17	4 Procurement and Site Works	As Soon As Possible	Fixed Duration	None
18	4.1 Procurement	As Soon As Possible	Fixed Work	None
19	4.2 Construction	As Soon As Possible	Fixed Work	None
20	4.3 Commissioning	As Soon As Possible	Fixed Units	Commissioning phase

December 2023

Qtr 1, 2024

January 2024

February 2024

March 2024

Qtr 2, 2024

April 2024

May 2024

Milestones: 30-1 Project kick-off, 28-2 Design review

Project Management: Project Manager[38%] Initiating, Project Manager[43%] Planning, Project Manager[21%] Executing, Project Manager[27%] Monitoring and Controlling, Project Manager[50%] Closing

Engineering: Process Engineer[67%] Process, Civil Engineer[94%] Civil, Mechanical Engineer[50%] Mechanical, Civil Engineer;Electrical Engineer;Mechanical Engineer;Process Engineer Design review, Electrical Engineer[40%] Electrical and Instrumentation, Automation Engineer[94%] Automation

Procurement and Site Works: Procurement Manager[23%] Procurement, Construction Team Construction, Commissioning Engineer Commissioning



INTRODUCTION

LEARNING GOAL?

What is your position? How much knowledge and experience do you have of MS Project? What would you like to learn?

AGENDA



Project

- Learning goals
- Practice task scheduling
- Practice resource assignment
- Practice resource allocation
- Short break
- Practice schedule organizing
- Practice progress tracking
- Practice report project status

Microsoft Project

Keep your projects, resources, and teams organized and on track.

LEARNING GOALS



TASK SCHEDULING

View task path relations and learn to set constraints and deadlines to tasks.



SCHEDULE ORGANIZING

Group and filter details to gain focus in the schedule and create new tables and views.



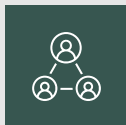
RESOURCE ASSIGNMENT

View and change resource availability and use Team Planner to make adjustments.



PROGRESS TRACKING

Learn how to update a baseline and to reschedule the remaining work to complete the project plan.



RESOURCE ALLOCATION

View resource allocation and resolve resource overallocations manually and calculated.



REPORT PROJECT STATUS

View slipped tasks and report the task and resource cost status to identify variances.



INSTRUCTION

Use the instruction for reference.

TASK SCHEDULING

SKILLS

- View task path relations
- Set task constraints
- Split tasks
- Change task base calendar
- View task inspector

TASK PATH RELATION

Task List:

Task ID	Task Name	Predecessors
0	ZPM_EN_0082 Project Training Detail Techniques Planning	
1	1 Milestones	
2	1.1 Project kick-off	6
3	1.2 Design review	14
4	2 Project Management	
5	2.1 Initiating	
6	2.2 Planning	5
7	2.3 Executing	10SS
8	2.4 Monitoring and Controlling	7SS
9	2.5 Closing	7
10	3 Engineering	
11	3.1 Process	2
12	3.2 Civil	2
13	3.3 Mechanical	2
14	3.4 Design review	13FS-2 days
15	3.5 Electrical and Instrumentation	13FF+3 days
16	3.6 Automation	15FF
17	4 Procurement and Site Works	
18	4.1 Procurement	11SS
19	4.2 Construction	12SS
20	4.3 Commissioning	19

Gantt Chart Summary:

- Project Management:** Initiating (Project Manager [38%]), Planning (Project Manager [43%]), Executing (Project Manager [21%], Project Manager [27%]), Monitoring and Controlling (Project Manager [50%]), Closing.
- Engineering:** Process (Process Engineer [67%]), Civil (Civil Engineer [94%]), Mechanical (Mechanical Engineer [50%]), Design review (Civil Engineer, Electrical Engineer, Mechanical Engineer, Process Engineer).
- Electrical and Instrumentation:** Electrical and Instrumentation (Electrical Engineer [40%]).
- Automation:** Automation (Automation Engineer [94%]).
- Procurement and Site Works:** Procurement (Procurement Manager [23%]), Construction (Construction Team), Commissioning (Commissioning Engineer).



Highlight task path



Task Path changes by selection

CONSTRAINTS CATEGORY



Flexible constraints



Semi-flexible constraints




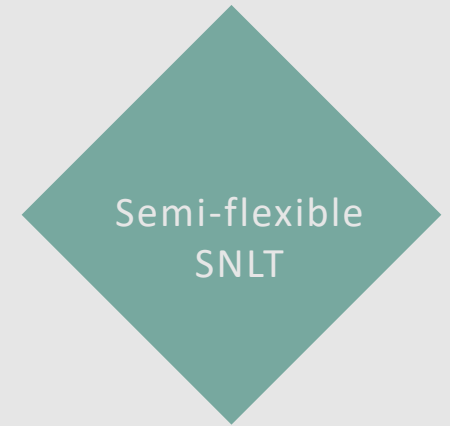
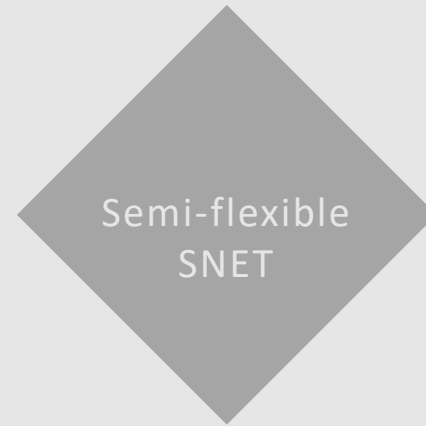
Inflexible constraints



Constraint indicator

TASK CONSTRAINTS [1-3]

 Default task constraint



As Soon As Possible

The start date of the task will be scheduled as soon as it can occur.



As Late As Possible

The start date of the task will be scheduled as late as it can occur.



Start No Earlier Than

The start date of the task will be scheduled on or after the constraint date.



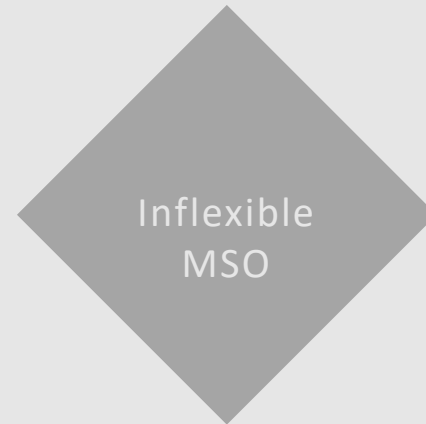
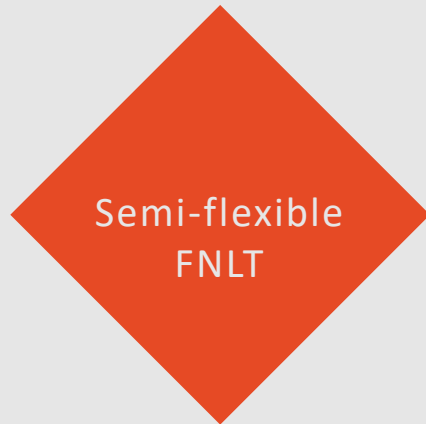
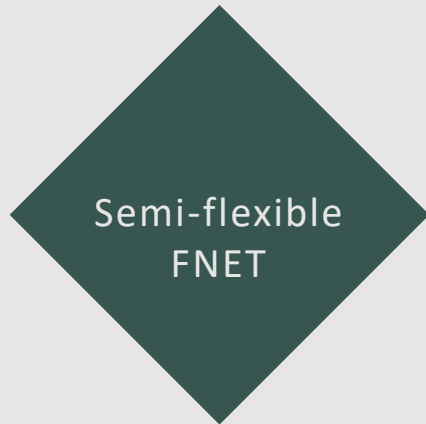
Start No Later Than

The start date of the task will be scheduled on or before the constraint date.

TASK CONSTRAINTS [2-3]



Consider deadline dates instead of semi-flexible or inflexible constraints



Finish No Earlier Than

The finish date of the task will be scheduled on or after the constraint date.



Finish No Later Than

The finish date of the task will be scheduled on or before the constraint date.



Must Start On

The start date of the task will be scheduled on the constraint date.

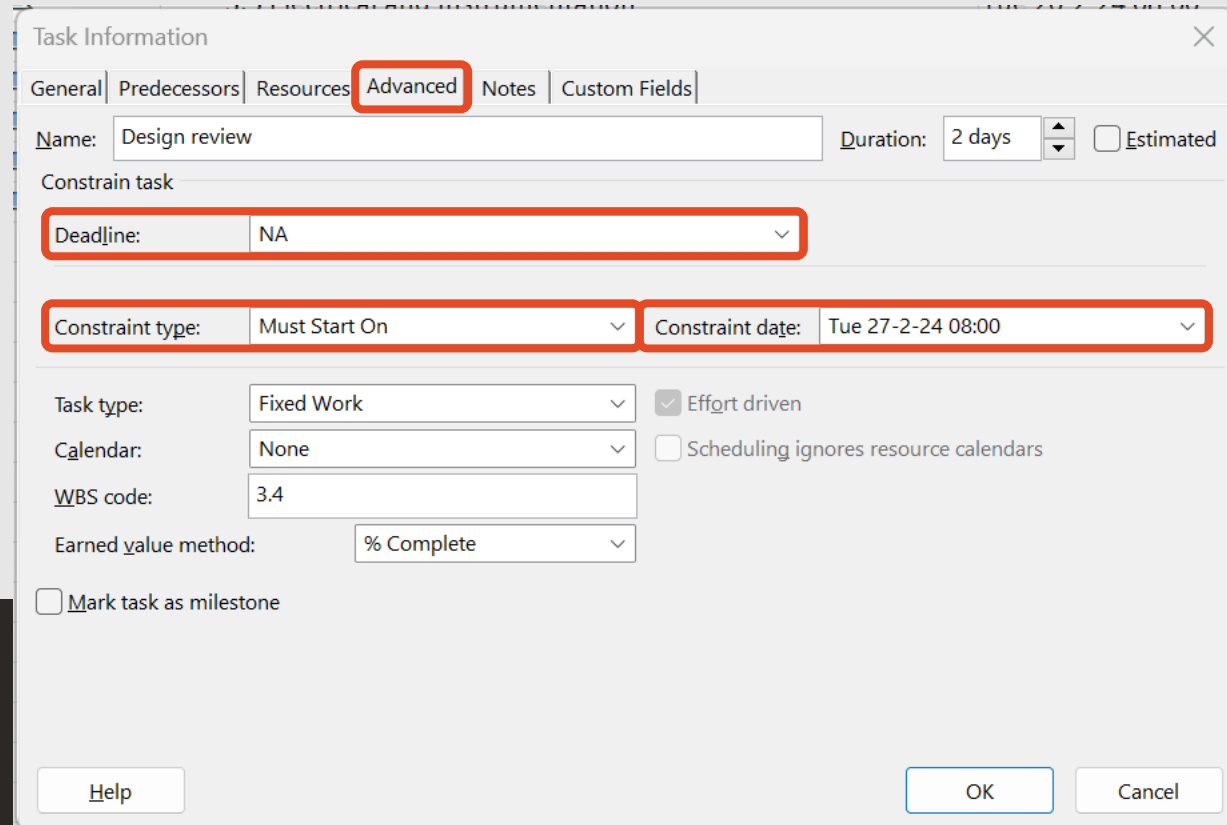


Must Finish On

The finish date of the task will be scheduled on the constraint date.

TASK CONSTRAINT [3-3]

Consider using constraint versus deadline.



Task Information

General | Predecessors | Resources | **Advanced** | Notes | Custom Fields

Name: Design review Duration: 2 days Estimated

Constrain task

Deadline: NA

Constraint type: Must Start On Constraint date: Tue 27-2-24 08:00

Task type: Fixed Work Effort driven

Calendar: None Scheduling ignores resource calendars

WBS code: 3.4

Earned value method: % Complete

Mark task as milestone

Help OK Cancel

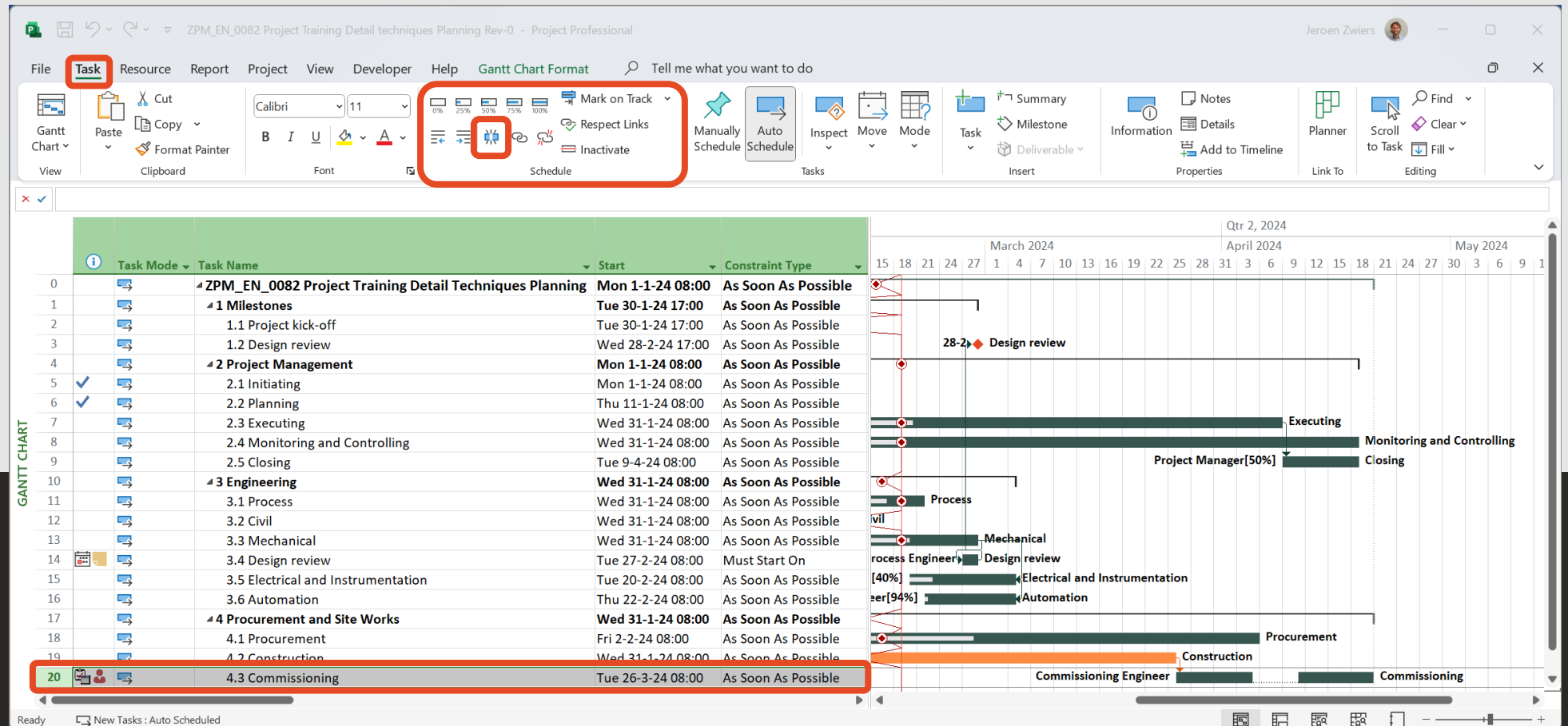


Set constraint
or deadline

TASK SCHEDULING

SPLIT TASKS

Useful for remaining work to be rescheduled due to interruption.



 Split task

TASK BASE CALENDAR

Change Working Time

For calendar: Commissioning phase Create New Calendar ...

Calendar 'Commissioning phase' is a

Legend:

- Working
- Nonworking
- 31 Edited working hours
- 31 Exception day
- 31 Nondefault work week

Click on a day to see its working times: Working times for 14 October 2023:

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21

- 08:00 to 12:00
- 13:00 to 17:00

Create New Base Calendar

Name: Commissioning phase

Create new base calendar

Make a copy of Standard calendar

OK Cancel

Name	Start	Finish
1 [Default]	NA	NA

Help Options... OK Close

Task Information

General Predecessors Resources Advanced Notes Custom Fields

Name: Commissioning Duration: 18 days Estimated

Constrain task

Deadline: NA

Constraint type: As Soon As Possible Constraint date: NA

Task type: Fixed Work Effort driven

Calendar: Commissioning phase Scheduling ignores resource calendars

WBS code: 4.3

Earned value method: % Complete

Mark task as milestone

Help OK Cancel



Create and set new calendar

TASK TYPE AND EFFORT DRIVEN

Effort driven scheduling only affects the schedule when resources are assigned or removed.

TASK FORM

Name: Commissioning Duration: 18 days Effort driven Manually Scheduled Previous Next

Start: Tue 26-3-24 08:00 Finish: Sat 20-4-24 17:00 Task type: Fixed Units % Complete: 0%

ID	Resource Name	Units	Work	ID	Predecessor Name	Type	Lag
9	Commissioning Engineer	100%	144h	19	Construction	FS	0d

Task Information

General | Predecessors | Resource | **Advanced** | Notes | Custom Fields

Name: Commissioning Duration: 18 days Estimated

Constrain task

Deadline: NA

Constraint type: As Soon As Possible Constraint date: NA

Task type: Fixed Units Effort driven

Calendar: Commissioning phase Scheduling ignores resource calendars

WBS code: 4.3

Earned value method: % Complete

Mark task as milestone

Help OK Cancel

Busy ↗ New Tasks : Auto Scheduled



Change task type

PEAK UNITS

$$\textit{Work} = \textit{Duration} \times \textit{Assignment Units}$$

40 hours work = 40 hours task duration x 100% assignment units

Task type	Adjust work	Adjust duration	Adjust assignment units
Fixed work	Duration calculated	Peak units calculated	Duration calculated
Fixed duration	Peak units calculated	Work calculated	Work calculated
Fixed assignment units	Duration calculated	Work calculated	Duration calculated

TASK INSPECTOR

Inspect the task and use details to understand scheduling factors.

The screenshot shows the Microsoft Project interface with the Task Inspector open for a task named 'Commissioning'. The ribbon includes 'Task' and 'Tasks' tabs. The 'Tasks' tab has an 'Inspect' dropdown menu highlighted. The Gantt chart table shows the following data:

Task ID	Task Name	Work	Duration	Details	Thu 18-4	Fri 19-4	Sat 20-4	Sun 21-4
17	Procurement and Site Works	1.156 hrs	57 days	Work	8h	8h	8h	
18	Procurement Procurement Manager	52 hrs	28 days	Work				
19	Construction Construction Team	960 hrs	38 days	Work				
20	Commissioning Commissioning Engineer	144 hrs	18 days	Work	8h	8h	8h	



Inspect task details



PRACTICE

Task scheduling

PRACTICE

Step	Action
1	Apply Task Path Predecessors and Driving Predecessors for the task Design review.
2	Add constraint type Must Start On (MSO) to Design review with constraint date 27-2-2024 08:00.
3	Create a new calendar with the name commissioning phase by making a copy of the standard project calendar.
4	Add Saturdays as standard working time to the Work Weeks in the commissioning phase calendar. Standard working time is from 08:00 to 12:00 and from 13:00 to 17:00.
5	Change the Task Calendar for the Commissioning task from None to Commissioning phase and mark the box Scheduling ignores resource calendars.
6	Change the Task Type for the Commissioning task from Fixed Work to Fixed Units.
7	View the overallocation warning of the resource Commissioning Engineer in the Task Inspector Pane.

RESOURCE ASSIGNMENT

SKILLS

- View resource availability
- Change resource pay rates
- Delay the start of assignments
- View resource capacity
- Adjust assignments