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Welcome to the
Eastwood Harris Pty Ltd
PRINCE2™
 Revised 2009
 and
 Microsoft Project
 user training course

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Administration

- Evacuation
- Timings, meals and facilities
- Mobile phones and emails
- Introductions
 - Your Name
 - Experience in scheduling software
 - PRINCE2 experience
 - What you expect from the course
- Course attendance sheet.

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Course Agenda

Day 1 Modules

- 1 Introduction
- 2 Creating a Project Plan
- 3 Creating Projects and Setting up the Software
- 4 Navigating Around the Screen
- 5 Defining Calendars
- 6 Adding Tasks
- 7 Organizing Tasks Using Outlining
- 8 Formatting the Display
- 9 Adding Task Dependencies
- 10 Network Diagram View
- 11 Constraints

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Course Agenda - continued

Day 2 Modules

- 12 Filters
- 13 Views, Tables and Details
- 14 Grouping Tasks, Outline Codes and WBS
- 15 Printing and Reports
- 16 Tracking Progress
- 17 Options
- 18 Creating Resources
- 19 Assigning Resources and Costs to Tasks
- 20 Resource Histograms, Tables, S-Curves & Leveling
- 21 Statusing Projects with Resources
- 22 Tools and Techniques for Scheduling.

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Module 1 – Introduction

Topics:

- Purpose of the Course
- Required Background Knowledge
- Purpose and Aims of Planning
- Definition and Elements of a Plan
- Plan Supporting Documents
- PRINCE2 Plan Levels
- Programme Planning in Microsoft Project
- Controlling a Project
- Organisation Responsibilities
- Planning Metrics and the Planning Cycle
- PRINCE2 Processes supported by Microsoft Project.

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Purpose of the course

- Provide a method for planning, scheduling and controlling projects using Microsoft Project,
- In a project environment using the PRINCE2 2009 methodology,
- Up to an intermediate level.

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Required Background Knowledge

- The ability to use a personal computer and understand the fundamentals of the operating system,
- Experience using application software such as Microsoft Office and
- An understanding of the PRINCE2 2009 Processes, Components and Techniques.

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PRINCE2 2009 Changes

- The 2009 Managing Successful Projects with PRINCE2™, fifth edition of the manual introduced some significant changes in both the terminology used and the structure of PRINCE2.

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PRINCE2 2009 Terminology

The following terminology changes have been made:

- **Components** are now called **Themes**,
- **Processes** remain **Processes**,
- **Sub processes** are now called **Activities**,
- **Processes** and **Activities** are no longer assigned codes such as SU and SU1.

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Additions and Removals

- This edition is a major rewrite of the book and not just an update,
- Some sub processes have been removed, many are renamed with some new ones being introduced,
- One of the more significant changes is that the Planning Process has been removed and the Planning sub processes have been moved and restructured in the **Planning Theme** under a heading titled **The PRINCE2 Approach to Plans**,
- These Planning sub processes are now referred to as **Steps**.

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Starting up a Project

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Starting up a Project SU1 Appointing a PB Executive and a PM SU2 Designing a PM Team SU3 Appointing a PM Team SU4 Preparing a Project Brief SU5 Defining a Project Approach SU6 Planning an Initiation Stage	Activities Starting up a Project Appoint the Executive and the Project Manager <i>Capture previous lessons</i> Design and appoint the projects management team Prepare the outline Business Case Select the project approach and assemble the Project Brief Planning the Initiation Stage

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Directing a Project

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Directing a Project DP1 Authorising Initiation DP2 Authorising a Project DP3 Authorising a Stage Plan or Exception Plan DP4 Giving ad hoc Direction DP5 Confirming Project Closure	Activities Directing a Project Authorize initiation Authorize the project Authorize a Stage or Exception Plan Give ad hoc direction Authorize Project Closure

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Initiating a Project

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Initiating a Project	Activities Initiating a Project
IP1 Planning Quality	Prepare the Risk Management Strategy Prepare the Configuration Management Strategy Prepare the Quality Management Strategy Prepare the Communications Management Strategy
IP4 Setting up Project Controls	Setting up Project Controls
IP2 Planning a Project	Create a Project Plan
IP3 Refining the Business Case and Risks	Refine the Business Case
IP6 Assembling a PID	Assembling a Project Initiation Document
IP5 Setting up Project Files	

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Controlling a Stage

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Controlling a Stage	Activities Controlling a Stage
CS1 Authorising a Work Package CS2 Assessing Progress CS9 Receiving Completed Work Package	Work Packages Authorize a Work Package Review Work Package Status Receive Complete Work Package
CS5 Reviewing Stage Status CS6 Reporting Highlights	Monitoring and reporting Reviewing the stage status Report highlights
CS3 Capturing Project Issues	Issues Capture and examine issues and risks
CS4 Examining Project Issues CS8 Escalating Project Issues CS7 Taking Corrective Action	Escalate issues and risks Take corrective action

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Managing Product Delivery

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Managing Product Delivery	Activities Managing Product Delivery
MP1 Accepting a Work Package	Accept a Work Package
MP2 Executing a Work Package	Execute a Work Package
MP3 Delivering a Work Package	Deliver a Work Package

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Planning

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Planning	Activities <i>PRINCE2 Theme - Steps in the Approach to Plans</i>
PL1 Designing a Plan	Design the plan
PL2 Defining and Analysing Products	Define and analyse the products
PL3 Identifying Activities and Dependencies	Identify activities and dependencies
PL4 Estimating	Prepare estimates
PL5 Scheduling	Prepare the schedule
PL6 Analysing Risks	Analyse the risks (throughout the whole Theme)
PL7 Completing a Plan	Document the Plan

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Managing Stage Boundaries

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Managing Stage Boundaries	Activities Managing a Stage Boundary
SB1 Planning a Stage	Plan the next stage
SB2 Updating a Project Plan	Update the Project Plan
SB3 Updating a Project Business Case	Update the Business Case
SB4 Updating the Risk Log	
SB5 Reporting Stage End	Report stage end
SB6 Producing an Exception Plan	Produce an Exception Plan

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Closing a Project

PRINCE2 4th Edition 2005 Processes	PRINCE2 5th Edition 2009 Processes
Sub Processes Closing a Project	Activities Closing a Project
CP3 Evaluating a project	Prepare planned closure Prepare premature closure Hand over products Evaluate the project Recommend project closure
CP1 De-commissioning a project CP2 Identifying Follow on Actions	

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Purpose of Planning

- The ultimate purpose of planning is to build a model that allows you to predict which tasks and resources are critical to the timely completion of the project, then:
- Strategies may then be implemented to ensure that these tasks and resources are managed properly, thus ensuring that the project will be delivered both **On Time** and **Within Budget**.

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Planning aims to:

- Identify the Products and Tasks required to deliver a project,
- Evaluate different project delivery methods,
- Identify and optimize the use of resources,
- Optimize time and evaluate if target dates may be met
- Identify risks and set priorities,
- Provide a baseline plan against which progress is measured,
- Communicate the plan to all stakeholders, including what is to be done, when and by whom,
- Provide early warning of potential problems and enable proactive and not reactive action to be taken and
- Assist management to think ahead and make informed decisions.

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Planning helps to avoid or assist in evaluating:

- Increased project costs or reduction in scope and/or quality,
- Additional change over and/or operation costs,
- Extensions of time claims,
- Loss of your client's revenue,
- Contractual disputes and associated resolution costs,
- The loss of reputation of those involved in a project, and
- Loss of a facility or asset in the event of a total project failure.

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Definition of a Plan

- PRINCE2 defines a plan as a proposal for doing or achieving something which specifies the what, when, how and by whom.
- A Project Plan must at all times be able to deliver the expected benefits identified in the Business Case.
- All plans must have the approval and commitment of all the appropriate management levels.
- A plan is therefore not just a Microsoft Project Gantt Chart (bar chart), although a Gantt Chart is an important output of the planning process.

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Elements of a Plan – the PRINCE2 Definition

- Products to be produced, both Specialist and Management
- Tasks required to produce the Products
- Tasks to validate the Products' quality
- Resources required to produce the Products, including management and quality
- The relationships or dependencies between the Products and Tasks
- External dependencies that will influence Product creation
- Timings for the Products
- Control points to measure progress
- Tolerances in time, cost and any other agreed variable.

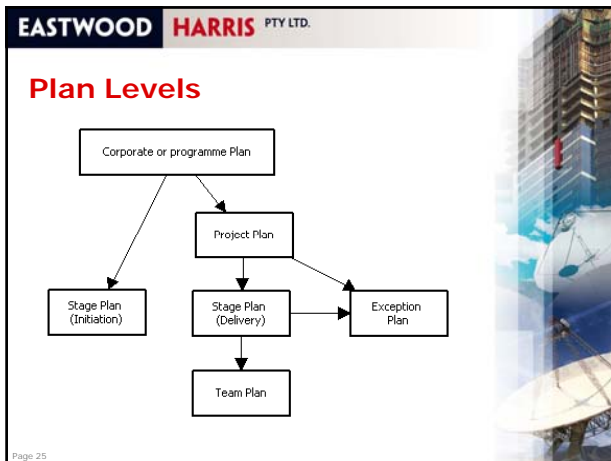
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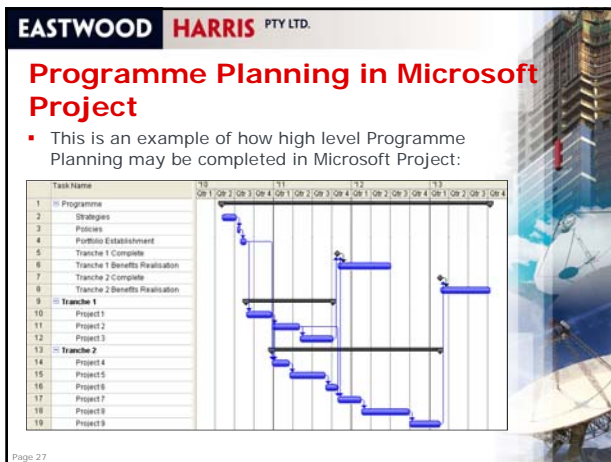
Plan Levels

- PRINCE2 defines three levels of plans below a corporate or programme plan:
 - Project
 - Stage
 - Team
- PRINCE2 also defines 5 types of plans as per the picture on the next slide, (which was created using the Microsoft Project Network Diagram function).

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- ## PRINCE2 Plan Levels
- **Programme Plan**, a Project Plan may be a stand-alone plan or part of a portfolio of multiple projects within a programme,
 - **Project Plan**, this is mandatory and updated throughout the duration of a project,
 - **Stage Plan**, there are a minimum of two Stage Plans: an **Initiation Stage Plan** and **First Stage Plan**. (There would be usually one Stage Plan for each Stage.),
 - **Exception Plan**, which is at the same level and detail as a Stage Plan and replaces a Stage Plan at the request of a Project Board when a Stage is forecast to exceed Tolerances,
 - **Team Plan** is optional and would be used on larger projects where Teams are used for delivering Products which require detailed planning. A typical example is a contractor's plan that would be submitted during the bidding process,
 - **The Design the Plan** PRINCE2 activity will set out how each of these plans will be managed, there are many options.
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- ## Controlling a Project
- Controlling a project ensures:
- The work is being authorised in accordance with the plan,
 - The required products are being produced,
 - The required quality is being met,
 - The products are being produced on time, with the planned resources and to the planned costs and
 - The project products will achieve the **Business Case**.
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- ## Controlling a Project
- Controlling a project provides the next level of management with information allowing them to:
- Monitor the progress of products
 - Compare the progress with the plan
 - Review options
 - Forecast problems as early as possible enabling corrective action to be taken as early as possible
 - Authorise further work.
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- ## Project Board Controls
- The Project Board controls the project through:
- Authorize initiation where an Initiation Stage Plan would be reviewed and approved,
 - Authorize the project where the Project Plan and First Stage would be reviewed and approved,
 - Authorize a Stage or Exception Plan,
 - Give ad hoc direction,
 - Prepare planned closure where the Actual Duration and Costs would be compared to the Planned Duration and Costs.
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Project Manager Controls

The Project Manager controls the project through:

- The definition of Products in **Define and analyse the products**,
- Authorising work to commence in **Authorize a Work Package**,
- **Review Work Package Status** where the Project Manager would review Checkpoint Reports created by Team Managers, and
- **Receive Complete Work Package**.

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Project Planning Metrics

- A change in any one of these components normally results in a change in one or more of the others.

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Planning Cycle

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PRINCE2 Planning Components supported by Microsoft Project

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PRINCE2 Planning Components supported by Microsoft Project continued...

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Module 2 – Creating a Project Plan

Topics:

- Four Levels of using Microsoft Project
- Understanding you project
- LEVEL 1 - Planning without Resources
- LEVEL 2 - Tracking progress without Resources
- LEVEL 3 - Planning with Resources
- LEVEL 4 - Tracking progress with Resources

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Four modes or levels

- There are four levels in which planning and scheduling software may be used.

	Planning	Controlling
Without Resources	LEVEL 1 Planning without Resources	LEVEL 2 Tracking progress without Resources
With Resources	LEVEL 3 Planning with Resources	LEVEL 4 Tracking progress with Resources

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Understanding Your Project

Before creating a project schedule in Microsoft Project, it is important to understand the following types of documents:

- A PRINCE2 project should have a **Project Mandate** to commence the **Starting up a Project** process
- Project scope
- Functional specification
- Requirements baseline
- Contract documentation
- Plans and drawings
- Project execution plan
- Contracting and purchasing plan
- Equipment lists
- Installation plan
- Testing plan.

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Level 1 – Planning Without Resources

- Create the project
- Define the calendars
- Defining the WBS and other codes
- Add tasks
 - Add the logic & constraints
 - Mandatory dependencies
 - Discretionary dependencies
 - External dependencies
- Schedule the project and
- Consider contingent time.

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Creating Projects

To create the project in Microsoft Project, you will require the following information:


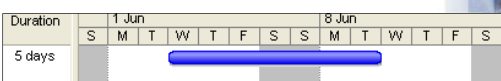
- Project Name
- The Project Start Date (and perhaps the Finish Date)
- It would be helpful to know other important information such as:
 - Client name, and
 - Other project data such as location, project number and stakeholders.

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Defining the Calendars

- The finish date and time of an task is calculated from the start date and time plus the task duration over the calendar assigned to the task.

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Microsoft Project Options for Product Based Planning

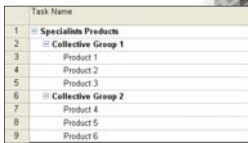
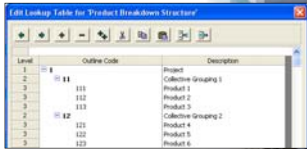
- Microsoft Project was not entirely suitable to complete Product Based Planning with the older version of PRINCE2, but PRINCE2 2009 has relaxed some of the requirements making using Microsoft Project easier,
- We will make some suggestions on how to use Microsoft Project to create a PBS next,
- Other option are:
 - To invest in PRINCE2 planning software such as Change Aide, or
 - Use a word processor or spread sheets and indent the text to create a hierarchical structure, or
 - Use Microsoft's OBS feature in Word or Excel.

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Product Breakdown Structure Options in Microsoft Project

- A close approximation of a Product Breakdown Structure may be duplicated either using **Outlining**, or
- Using **Custom Outline Codes**:
- NOTE:** No tree structure may be produced from Microsoft Project

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Product Description

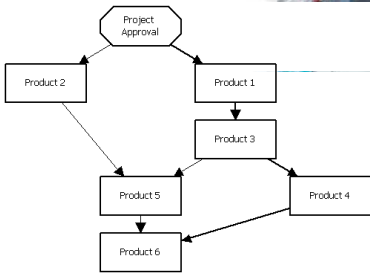
- Product Descriptions** may be recorded in Microsoft Project in:
- Notes**, or as an attached file, or
- Custom Fields**,
- When data is recorded in Microsoft Project, this information is no longer accessible to those who do not have access to the software. This may deter the use of Microsoft Project to record such data.

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Product Flow Diagram

- A **Product Flow Diagram (PFD)** may be created in Microsoft Project using the Network Diagramming function as the Products have been entered as tasks.
- Users may find the Network Diagramming function too time consuming to create a **PFD**,
- There are some restrictions on the formatting of the boxes around the task descriptions,
- The requirement for special formatting has been dropped in PRINCE2 2009.



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Coding up a Project

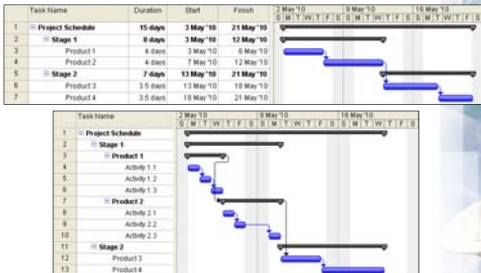
- Project breakdown structures are coding structures that are used to Group, Summarize and/or Filter tasks,
- Other project codes may include Stages, Locations, Disciplines, Contract Breakdown Structure and Organisational Breakdown Structure,
- The principal method to assign a project breakdown structure to a project in Microsoft Project is through the Outlining function,
- Before creating a project, you should decide which is your primary project breakdown structure and use Outlining for this function,
- Design your other project breakdown structures using Custom Outline Codes or Text Fields.

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Adding Tasks

- Microsoft Project is a "top down" scheduling tool and is ideally suited to project planning using summary tasks created using the Outlining function, as Stages and Products in a Project Plan as per the examples below:



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Options for Displaying Stages and Products

- Summary Tasks** in Microsoft Project may be used to represent PRINCE2 Stages and/or Products, as per the example above and this is the simplest way to use Microsoft Project. Other alternatives are:
- Custom Fields** are an alternative function which may also be used to identify Stages and/or the Product Breakdown Structure.
- Milestones** may be used to identify the completion of Stages when the schedule is organised using Outlining which does not include Stages.
- NOTE:** These alternative methods require more knowledge of the software and the display options are not as simple to use.

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Adding the Logic

There are several types of dependencies that may be used when planning a project:

- **Mandatory dependencies**, also known as **Hard Logic**, are relationships between tasks that may not be broken.
- **Discretionary dependencies**, also known as **Sequencing Logic** or **Soft Logic**, are relationships between tasks that may be changed when the plan is changed.
- **External dependencies** are usually events outside the control of the project team that impact the schedule.

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Leads and Lags

- The software will calculate the start and finish dates for each task.
- The end date of the project is calculated from the start date of the project, the logic amongst the tasks, any **Leads** (often referred to as **Negative Lag**) or **Lags** applied to the logic and durations of the tasks.

Task Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1 Predecessor	[Bar from 1 to 7]															
2 Successor with 3 day Lag																
3																
4 Predecessor																
5 Successor with 3 day Lead																

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Schedule Calculations

- When a schedule has a **Closed Network** scheduling the project will identify the:
 - Critical Path(s), the shortest duration a project may be completed in
 - Total Float, the amount of time an task may be delayed without delaying the end of a project
 - Free Float is the time an task may be delayed without delaying another task.

Task Name	Dur	Start	Finish	Total Slack	Free Slack	1 Jun '09	8 Jun '09	15 Jun '09
1 Start Milestone	0d	1 Jun	1 Jun	0d	0d			
2 Activity A	5d	1 Jun	5 Jun	0d	0d			
3 Activity B	5d	8 Jun	12 Jun	0d	0d			
4 Activity C	5d	15 Jun	19 Jun	0d	0d			
5 Activity D	2d	1 Jun	2 Jun	11d	11d			
6 Activity E	2d	8 Jun	9 Jun	8d	8d			
7 Finish Milestone	0d	19 Jun	19 Jun	0d	0d			

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Closed Network

- In a **Closed Network** every activity has except: one or more start milestones and one or more finish milestones:
 - A Start Predecessor, and
 - A Finish Successor.

```

graph LR
    StartMilestone[Start Milestone] --> ActivityA[Activity A]
    StartMilestone --> ActivityD[Activity D]
    ActivityA --> ActivityB[Activity B]
    ActivityB --> ActivityC[Activity C]
    ActivityD --> ActivityE[Activity E]
    ActivityC --> FinishMilestone[Finish Milestone]
    ActivityE --> FinishMilestone
  
```

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Constraints

- To correctly model the impact of events outside the logical sequence, you may use constraints.
- A constraint would be imposed to specific dates such as:
 - The availability of a facility to allow work to commence, or
 - The predetermined time a project must be complete by
- Constraints should be cross-referenced to the supporting documentation such as contract documentation Milestone Dates.

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Constraints Types

There are two types of constraints:

- **Project Constraints** which includes the **Project Start Date** or **Project Finish Date** only in Microsoft Project and
- **Task Constraints**; the two most common are **Start On or After** (Early Start) and **Finish On or Before** (Late Finish).

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Task Early Start Constraint

- An task will no longer start on the Data Date When a **Start No Earlier Than** constraint is assigned
- This is more commonly known as an **Early Start** constraint.

Task Name	Dur	Start	Finish	Total Slack	Free Slack
1 Start Milestone	0d	7 Jun	7 Jun	0d	0d
2 The task has a 'Start No Earlier Than' constraint on 7 Jun.		12 Jun	0d	0d	0d
3 Activity A	5d	12 Jun	17 Jun	0d	0d
4 Activity B	5d	22 Jun	27 Jun	0d	0d
5 Activity C	5d	22 Jun	27 Jun	0d	0d
6 Activity D	2d	8 Jun	9 Jun	11d	3d
7 Activity E	3d	15 Jun	18 Jun	8d	8d
8 Finish Milestone	0d	20 Jun	20 Jun	0d	0d

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Task Late Finish Constraint

- This picture shows a **Finish Date No Later Than** constraint assigned 4 days earlier than the calculated finish date
- Thus Negative Float is created, representing the amount of time that needs to be caught up
- This is more commonly known as a **Late Finish** constraint.

Task Name	Dur	Start	Finish	Total Slack	Free Slack
1 Start Milestone	0d	7 Jun	7 Jun	-4d	0d
2 Activity 1	5d	8 Jun	12 Jun	-4d	0d
3 Activity 2	5d	15 Jun	19 Jun	-4d	0d
4 Activity 3	5d	22 Jun	26 Jun	-4d	0d
5 Activity 4	3d	8 Jun	9 Jun	7d	7d
6 Activity 5	2d	22 Jun	23 Jun	-5d	0d
7 Finish Milestone	0d	26 Jun	26 Jun	-4d	0d

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Task Late Finish Constraint

- This schedule has a **Finish Date No Later Than** constraint assigned after the calculated finish date
- The Total Float is **NOT** calculated to the constraint date when the constraint date is **LATER** the calculated Early Finish
- Positive Total Float is **NOT** created and a critical path of zero days float is maintained.

Task Name	Dur	Start	Finish	Total Slack	Free Slack
1 Start Milestone	0d	7 Jun	7 Jun	0d	0d
2 Activity 1	5d	8 Jun	12 Jun	0d	0d
3 Activity 2	5d	15 Jun	19 Jun	0d	0d
4 Activity 3	5d	22 Jun	26 Jun	0d	0d
5 Activity 4	2d	8 Jun	9 Jun	11d	3d
6 Activity 5	2d	22 Jun	23 Jun	3d	3d
7 Finish Milestone	0d	26 Jun	26 Jun	0d	0d

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Risk Analysis and Tolerances

- At this point in time you should consider conducting a **Risk Analysis** and adding Risk Mitigation tasks
- Consider what **Time Tolerances** should be assigned and these may be added as tasks
- Now print and issue the plan for review and approval.

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Level 2 – Monitoring Progress Without Resources

- Set the Baseline
- Tracking and record progress
- Entering in Actual Start Dates, Percent Complete and Actual Finish dates
- Take corrective action.

Task Name	Duration	% Complete	Start	Finish	Finish Variance	Total Slack
1 Start Milestone	0 days	100%	5 Feb	5 Feb	0 days	0 days
2 Task 1	6 days	100%	5 Feb	12 Feb	1 day	0 days
3 Task 2	5 days	0%	13 Feb	19 Feb	1 day	0 days
4 Task 3	5 days	0%	20 Feb	26 Feb	1 day	0 days
5 Task 4	2 days	100%	5 Feb	6 Feb	0 days	0 days
6 Task 5	4 days	25%	12 Feb	15 Feb	2 days	7 days
7 Finish Milestone	0 days	0%	26 Feb	26 Feb	1 day	0 days

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Level 3 – Scheduling With Resources and Costs

- Are you estimating or planning for control?
- Consider the balance between the number of Tasks and Resources
- Creating and using Resources
- Creating and using Expenses
- Task Type and Effort Driven option
- Resource Optimization.

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Level 4 – Monitoring Progress of a Resourced Schedule

- A decision needs to be made if the actual units and costs are to be collected and entered into the software or the software is to calculate these and then the appropriate options selected
- Stating Projects with Resources records
 - The quantities and/or costs spent to-date per task for each resource, and
 - The quantities and/or costs required per resource to complete each task.
- At this point in time it is possible to undertake a great deal of analysis and often Earned Value Performance Measurement is used.

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Now lets get our hand dirty!

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Module 3 – Creating Projects and Setting up the Software

Topics:

- File Types
- Starting Microsoft Project
- Creating a Blank Project
- Opening an Existing Project
- Creating a New Project from a Template
- Creating a Project Template
- Saving Additional Project Information
- Workshop 1 - Creating Our Project

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Microsoft Project File Types

Microsoft Project propriety file formats :

- **Microsoft Project 98 (*.mpp)**. This is the format created by Microsoft Project 98.
- Microsoft Project 98 will not open or save a **Project (*.mpp)** file created by Microsoft Project 2000, 2002, 2003 and 2007.
- Microsoft Project 2000, 2002 and 2003 will open and save to a **Microsoft Project 98 (*.mpp)** file.
- Microsoft Project 2007 will not save to a **Microsoft Project 98 (*.mpp)** file.
- **MPX (*.mpx)**. This is a text format data file created by Microsoft Project 98 and earlier versions of Microsoft Project. This format may be opened by Microsoft Project 2000 – 2003 and 2007 but cannot be created by Microsoft Project 2000, 2002, 2003 and 2007. mpx is a format that may be imported and exported by many other project scheduling software packages.
- **Template (*.mpt)**. This format is used for creating project templates.
- **Project Database (*.mpd)**. This is a Microsoft Project database format that may be used for exporting data and is intended to replace the mpx format in Microsoft Project 2000 – 2003, but is not available in Microsoft Project 2007.
- **Microsoft Access Database (*.mdb)**. This is the Microsoft Access format in Microsoft Project 2000 – 2003 that is not available in Microsoft Project 2007.

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Creating Projects and Setting up the Software

- The instructor will demonstrate the software functions.

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Module 4 – Navigating Around the Screen

Topics:

- Identify the Parts of the Project Screen
- Customizing the Screen
- Setting up the Options
- Splitting the Screen Views and Details Forms
- Right-clicking with the Mouse
- Workshop 2 – Setting Your Project Options

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Navigating Around the Screen

- The instructor will demonstrate the software functions.

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Module 5 – Defining Calendars

Topics:

- Assigning a Calendar to a Project
- Editing Calendars in Microsoft Office Project
- Creating a New Calendar
- Calculation of Durations in Days
- Understanding Default Start and Default End Time
- Effect on 2007 Calendars When Saving to 2000 – 2003
- Renaming and deleting calendars
- Copying Calendars between Projects
- Resource Calendars
- Copying a Base Calendar to Global.mpt for Use in Future Projects
- Selecting Dates
- Printing the Calendar
- Workshop 3 – Maintaining the Calendars

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Calendar Calculation

- The finish date (and time) of an task is calculated from the start date (and time) plus the duration over the calendar associated with the task.
- Therefore, a five-day duration task that starts at the start of the workday on a Wednesday, and is associated with a five-day workweek calendar (with Saturday and Sunday as non-work days) will finish at the end of the workday on the following Tuesday.

Duration	16 Feb '09	23 Feb '09
	M T W T F S S	M T W T F
5 days	[Gantt bar showing 5 days from Wednesday to Tuesday]	

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Defining Calendars

- The instructor will demonstrate the software functions.

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Module 6 – Adding Tasks

Topics:

- Adding New Tasks
- Reordering Tasks by Dragging
- Copying and Pasting Tasks
- Copying Tasks from Other Programs
- Dynamically Linking Cells to Other Programs
- Task Information Form
- Indicators Column
- Elapsed Durations
- Milestones
- Assigning Calendars to Tasks
- Workshop 4 – Adding Tasks.

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Task Definition

- Tasks should be well-defined, measurable pieces of work with a measurable outcome. Task descriptions containing only nouns such as “Bid Document” have confusing meanings
- The limit for task names is 254 characters, but try to keep task descriptions meaningful yet short and concise so they are easier to print
- When tasks are created, they are normally organised under the WBS which is created using Summary tasks
- Normally the WBS would be added first but it is simpler to teach Microsoft Project by showing how tasks are added first and then demonstrate the Creation of Summary Tasks using Outlining
- They may also be organized under other coding structures such as Task Codes or Custom Fields

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Adding Tasks

- The instructor will demonstrate the software functions.

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Module 7 – Organising tasks Using Outlining

Topics:

- Creating an Outline
- Promoting and Demoting Tasks
- Summary Task Duration Calculation
- Summarizing Tasks
- Workshop 5 – Entering Stages.

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Organising tasks Using Outlining

- Outlining is used to summarize and group tasks under a hierarchy of **Parent** or **Summary Tasks**
- They are used to present different views of your project during planning, scheduling and statusing
- These headings are normally based on your project breakdown structure
- In a PRINCE2 project these Summary Tasks may be used to represent the project Stages and/or the Product Breakdown Structure.

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Organising tasks Using Outlining

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Module 8 – Formatting the Display

Topics:

- Formatting the Columns
- Formatting the Bars
- Row Height
- Format Fonts
- Format Colors
- Format Timescale
- Format Gridlines
- Format Links, Dependencies, Relationships, or Logic Lines
- Workshop 6 - Formatting the Bar Chart.

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Formatting the Display

- This chapter covers the following topics, which are used to format the on-screen display and which are also reflected in print preview and printouts.

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Formatting the Display

- The instructor will demonstrate the software functions.

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Module 9 – Adding Task Dependencies

Topics:

- Understanding Dependencies
- Understanding Lags and Leads
- Restrictions on Summary Task Dependencies
- Displaying the Dependencies on the Gantt Chart
- Scheduling the Project
- Task Drivers
- Workshop 7 – Adding Relationships.

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What is Network Logic

- The next phase of a schedule is to add logic to the tasks
- There are two types of logic:
 - Relationships (Dependencies or Logic or Links between tasks), and
 - Imposed Constraints to task start or finish dates. These are covered in the Constraints chapter
- Microsoft Project's Help file and other text uses the terms "Dependencies, Relationships and Links" for Dependencies but does not use the term "Logic."

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Understanding Dependencies

- Two other terms you must understand are:
 - Predecessor**, a task that controls the start or finish of another immediate subsequent task.
 - Successor**, a task whose start or finish depends on the start or finish of another immediately preceding task.
- There are four types of dependencies available in Microsoft Project:
 - Finish-to-Start (FS) (also known as conventional)
 - Start-to-Start (SS)
 - Start-to-Finish (SF)
 - Finish-to-Finish (FF)

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What is Closed Network

- To create a Closed Network each task will require a Start predecessor and a Finish successor.

Open Network

No delay to Finish Milestone

Closed Network

Delay to Finish Milestone

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Relationship Types

The FS (or conventional) dependency looks like this:

While the SS dependency is like this:

The FF dependency looks like:

The SF dependency would be:

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Leads and Lags

- A successor task will start or finish later when a positive Lag is assigned. Therefore, a task requiring a 3-day delay between the finish of one task and start of another will require a positive lag of 3 days.
- Conversely, a lag may be negative (also called a Lead) when a new task can be started before the predecessor task is finished.
- Leads and Lags may be applied to any relationship type including Summary Task relationships.

An example of a FS with positive lag

An example of a FS with negative lag:

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Adding Task Dependencies

- The instructor will demonstrate the software functions.

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Module 10 – Network Diagram View

Topics:

- PRINCE2 Product Flow Diagram
- Understanding the Network Diagram View
- Adding and Deleting Tasks in the Network Diagramming View
- Adding, Editing and Deleting Dependencies
- Formatting the Task Boxes
- Formatting Individual Boxes
- Formatting the Display and Relationship Lines
- Early Date, Late Date and Float/Slack Calculations
- Workshop 8 – Schedule Calculations

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PRINCE2 Product Flow Diagram

The **Network Diagramming View** may be used to create and display the **PRINCE2 Product Flow Diagram** but the combination of the software functionality and the PRINCE2 requirements makes it difficult to use for this purpose:

- The formatting and presentation of the boxes around the Task Names are linked to scheduling functions; for example, Critical Activities may be assigned a specific box format,
- Elliptical Boxes are not available for External Products, but this requirement has been dropped in PRINCE2 2009,
- A filter should be created to ensure that only tasks designated as Products are displayed,
- The default boxes are designed to display scheduling data such as dates and float and are not ideal for the display of simple data such as descriptions.

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PRINCE2 Product Flow Diagram

To produce a Product Flow Diagram like the one below:

- The skill and experience of the operator in Microsoft Project needs to be high, and
- Different shapes specified by older version of PRINCE2 for External and Integration Products will need to be abandoned.

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Task Network View

- The instructor will demonstrate the software functions.

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Module 11 – Constraints

Topics:

- Assigning Constraints
- Deadline Date
- Schedule From Project Finish Date
- Task Notes
- Workshop 9 - Constraints

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Task Constraint Types

Constraints are used to impose logic on tasks that may not be realistically scheduled with logic links. This module will deal with the following constraints in detail:

- **Start No Earlier Than** more commonly called an **Early Start constraint** and affects the tasks Early Start date,
- **Finish No Later Than** more commonly called an **Late Finish constraint** and affects the tasks Late Start date,

These are the minimum number of constraints that are required to effectively schedule a project. There are many other types that may be used:

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Task Constraint Types

Other Constraint Types:

- **As Soon As Possible.** This is the default for a new task. A task is scheduled to occur as soon as possible and does not have a Constraint Date.
- **As Late As Possible.** A Task will be scheduled to occur as late as possible and does not have any particular Constraint Date. The Early and Late dates have the same date. A task with this constraint has no Total Float and delays the start of all the successor activities.
- **Start No Earlier Than.** This constraint sets a date before which the task will not start.
- **Start No Later Than.** This constraint sets a date after which the task will not start.
- **Must Start On.** This constraint sets a date on which the task will start. Therefore the task has no float. The early start and the late start dates are set to be the same as the Constraint Date.
- Continued.....

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Task Constraint Types Continued

Other Constraint Types:

- **Must Finish On.** This constraint sets a date on which the task will finish and therefore has no float. The early finish and the late finish dates are set to be the same as the Constraint Date.
- **Finish No Earlier Than.** This sets a date before which the task will not finish.
- **Finish No Later Than.** This sets a date after which the task will not finish.
- **Deadline Date.** This is similar to applying a Finish No Later Than constraint. This offers the opportunity of putting a second constraint on a task.

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Constraints

- The instructor will demonstrate the software functions.

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Module 12 – Filters

Topics:

- Understanding Filters
- Applying an Existing Filter
- Creating and Modifying Filters
- Defining Filter Criteria
- AutoFilters
- PRINCE2 Product Activity Customized Field & Filter
- Workshop 10 - Filters

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Filters

- Microsoft Project has an ability to display tasks that meet specific criteria using filters
- Microsoft Project defaults to displaying all tasks. It has a number of predefined filters available that you may use or edit and you may also create one or more of your own
- A filter may be applied to display or to highlight tasks that meet a criteria
- There are Task filters that apply to Task views and Resource filters that apply to Resource views
- There are two types of filters:
 - The first is where you select a Filter which exists or has been created using the Filters form
 - The second is to create an AutoFilter which is very similar to the Excel AutoFilter (Drop-down filter) function.

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Filters

- The instructor will demonstrate the software functions.

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Module 13 – Views, Tables and Details

Topics:

- Understanding Views
- Applying a View
- Creating a New View
- Tables
- Details Form
- PRINCE2 Product Flow Diagram View
- Workshop 11 – Organising Your Data

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Views

- A **View** is a function where the formatting such as the **Table**, **Details** and **Bar** formatting are saved and reapplied later.
- A filter is saved as part of a **View**.
- In a PRINCE2 project a **View** could be created for each type of report and for displaying Team Plan or Stage Plan activities. It is highly recommended that a View be produced for each frequently-created report.

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Module 14 – Printing and Reports

Topics:

- Printing
- Print Preview
- Page Set-up
- Print Form and Manual Page Breaks
- Reports
- Workshop 12 - Printing

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Printing and Reports

- The instructor will demonstrate the software functions.

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Module 15 – Tracking Progress

Topics:

- Setting the Baseline
- Practical Methods of Recording Progress
- Understanding Tracking Progress Concepts
- Updating the Schedule
- Simple Procedure for Stating a Schedule
- Workshop 13 – Tracking Progress

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Tracking Progress Steps

The main steps for monitoring progress are:

- Saving a Baseline schedule
- Recording or marking-up progress as of a specific date, often titled the Data Date, Status Date, Update Date, Current Date and As-Of-Date
- Updating or Stating the schedule with Actual Start and Actual Finish dates where applicable, and adjusting the task's Remaining Durations and Percent Completes
- Scheduling, moving the Status Date to the new date and recalculating all the tasks
- Comparing and Reporting actual progress against planned progress and revising the plan and schedule, if required.

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Tracking Progress

- The instructor will demonstrate the software functions.

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Module 16 – Grouping Tasks, Outline Codes and WBS

Topics:

- Understanding a Project Breakdown Structure
- Customize Fields
- Grouping
- Custom Outline Codes
- Outline Codes
- User Defined WBS Function
- Creating a Product Breakdown Structure Using Outline Codes
- Workshop 14 - Reorganization of the Schedule

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Grouping Tasks, Outline Codes and WBS

- The instructor will demonstrate the software functions.

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Module 17 – Options

Topics:

- View
- General
- Edit
- Calendar
- Schedule
- Calculation
- Spelling
- Security
- Save
- Interface

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Options

- The **Options** forms allow you to decide how Microsoft Project calculates and displays information,
- Most of the options are self-explanatory,
- Under **T**ools, **O**ptions..., there are ten tabs in Microsoft Project 2007,
- There were changes with each version.

Interface	Security		
Schedule	Calculation	Spelling	Save
View	General	Edit	Calendar

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Options

- The instructor will demonstrate the software functions.

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Module 18 – Creating Resources

Topics:

- Creating Resources in the Resource Sheet
- Grouping Resources in the Resource Sheet
- Resources Information Form
- Workshop 15 Defining Resources

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Understanding Resources

- A resource may be defined as something or someone that is assigned to a task and is required to complete the task. This includes people or groups of people, materials, equipment and money
- It is recommended that the minimum number of resources be assigned to tasks when it is planned to status a schedule. Avoid cluttering the schedule with resources that are in plentiful supply or are of little importance. Every resource added to the schedule will need to be statused. Therefore the scheduler's workload increases as resources are added to tasks
- Microsoft Project 2007 has introduced a **Cost** resource in addition to the existing **Work** and **Material** resources. This allows the entry of Costs as a resource without requiring a quantity
- Microsoft Project also has an Expense function.

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Using Resources

- **Individual Resources** – Individual people often responsible for completing the task or tasks associated with tasks to which they have been assigned
- **Group Resources** – Represent groups of people, such as trades or disciplines on a construction site
- **Crews** – Representing a mix of trades and mobile equipment
- **Input Resources** – These resources are required to complete the work and represent the project costs
- **Output Resources** – These could be the project deliverables or outcomes and could have a direct relationship to the project income.

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Resources and Expenses

- The instructor will demonstrate the software functions.

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Module 19 – Assigning Resources and Costs to Tasks

Topics:

- Task Type and Effort-Driven
- Fixed Costs
- Assigning Resources using the Resource Assignment Form
- Assigning Resources Using the Task Details Form
- Assigning Task Information Form
- Assignment of Resources to Summary Tasks
- Sharing Resources with Other Projects
- Rollup of Costs and Hours to Summary Tasks
- Contour the Resource Assignment
- Workshop 16 – Assigning resources to Tasks

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Assigning Resources and Costs to Tasks

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Module 20 – Resource Histograms, Tables, S-Curves & Leveling

Topics:

- Resource Graph Form
- Resource Graph View
- Resource Tables View
- Detailed Styles Form
- Creating an S-Curve from Microsoft Project
- Printing Resource Profiles and Tables
- Creating Table, S-Curves and Histograms in a Spreadsheet
- Resolving Resource Overloading
- Resource Leveling Function
- Workshop 17 – Histograms and Tables

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Resource Histograms, Tables, S-Curves & Leveling

- The instructor will demonstrate the software functions.

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Module 21 – Stating Projects with Resources

Topics:

- Understanding Baseline Dates, Duration, Costs and Hours
- Understanding the Data Date
- Formatting the Current Date and Status Date Lines
- Information Required to Update a Resourced Schedule
- Updating Dates and Percentage Complete
- Entering a % Complete Against Summary Tasks
- Updating Resources
- Splitting Tasks
- Summary Task Interim Baseline Calculation
- Summary Tasks and Earned Value
- Workshop 18 - Updating a Resourced Schedule.

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Stating a Resourced Schedule

- It is often considered best practice to update a project between 10 and 20 times in its lifecycle. Some companies update schedules to correspond with accounting periods, which are normally every month. This frequency is often too long for projects that are less than a year in duration, as too much change may happen in one month. Therefore, more frequent updating may identify problems earlier
- Stating a project with resources employs a number of preferences and options, which are very interactive and will require a significant amount of practice by a user to understand and master them
- It must be decided if the software will calculate the Actual costs and units from the percentage complete or if this data is to be collected and entered into the software.

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Preparing to Status a Resourced Schedule

After this course and before working on a live project, inexperienced users should gain confidence with the software by:

- Creating a new project and setting the **Options** to reflect the method you wish to enter information and how you want Microsoft Project to calculate the project data,
- Creating two or three tasks and then assigning two or three resources to each task,
- Update the Tasks and Resources as if you were updating a schedule and observe the results,
- Alter the preferences and defaults if you are not receiving the result you require. Re-update and note the preferences and defaults for future reference.

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Statusing a Resourced Schedule

Statusing a project with resources takes place in two distinct steps:

1. The dates, durations and relationships are statused using the methods outlined in the **Tracking Progress** chapter, and
2. The Resource, Expenses Units (hours and quantities) and Costs, both the Actual to Date and To Complete, are then updated. These values may be automatically updated by Microsoft Project from the % Complete or imported from accounting and timesheet systems or updated by the Microsoft Project Timesheet system.

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Statusing a Resourced Schedule

- The instructor will demonstrate the software functions.

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Module 22 – Tools and Techniques for Scheduling

Topics:

- Understanding Menu Options
- Cut, Copy and Paste Row
- Cut, Copy and Paste Cell
- Copy Picture
- Fill
- Clear
- Find and Replace
- Go To
- Insert Recurring Task
- Splitting a Task
- Copy or Cut-and-Paste to and from Spreadsheets
- Paste Link – Cell Values in Columns
- Unique Task, Resource and Assignment ID
- Organizer

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Tools and Techniques for Scheduling

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Review Expectations

- Complete Feedback Sheet
- Have we met your expectations?

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Thank you for attending

