

**EASTWOOD HARRIS** PTY LTD.

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

Page 1

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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.

Page 2

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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

Day 2 Modules

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

Page 3

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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.

Page 4

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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 methodology,
- Up to an intermediate level.

Page 5

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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 Processes, Components and Techniques.

Page 6

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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**.

Page 7

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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.

Page 8

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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.

Page 9

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## Definition of a Plan

- PRINCE2 defines a plan as a document identifying all the Products to be delivered by a project and their associated timescale, cost, quality and targets for the production of each,
- A PRINCE2 Project Plan must at all times be able to deliver the expected benefits identified in the Business Case,
- PRINCE2 also states that 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.

Page 10

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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.

Page 11

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## Plan Supporting Documents

- To create a project plan you should have access to the following documents:
- The scope of the Plan,
- The method to be used to execute the project,
- Methods to measuring progress and report,
- Quality control techniques and
- Assumptions and risks.

```

graph TD
    Prerequisites --> Products
    QualityRequirements[Quality Requirements] --> Products
    Products --> Assumptions
    Assumptions --> Activities
    Activities --> Resources
    Resources --> Risks
    Risks --> ControlPoints[Control Points]
    Risks --> Revised[Revised Activities and Resources]
    Revised --> TimeCost[Time & Cost]
  
```

Page 12

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## PRINCE2 Plan Levels

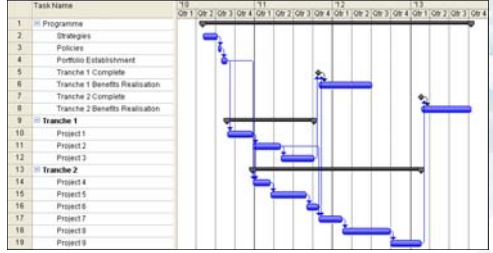
- **Programme Plan**, a Project Plan may be a stand-alone plan or part of a portfolio of multiple projects within a programme,
- **Project Plan**, this is mandatory and updated throughout the duration of a project,
- **Stage Plan**, there are a minimum of two Stage Plans: an **Initiation Stage Plan** 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,
- **PL1 – Designing** will plan how each of these plans will be managed, there are many options.

Page 13

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## Programme Planning in Microsoft Project

- This is an example of how high level Programme Planning may be completed in Microsoft Project:



Page 14

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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**.

Page 15

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## Project Board Controls

The Project Board controls the project through:

- **DP1 – Authorising Initiation** where an Initiation Stage Plan would be reviewed and approved,
- **DP2 – Authorising a Project** where the Project Plan and First Stage would be reviewed and approved,
- **DP3 – Authorising a Stage Plan** where:
  - A Stage would be reviewed and approved, or
  - After receiving an Exception Plan and holding an Exception Assessment meeting, the Exception Plan would be reviewed and approved.
- **DP4 – Giving Ad Hoc Direction** after reviewing Highlight Reports from the Project Manager produced in
- **CS6 – Reporting Highlights** which would include an update of the Stage Plan, or
- Review Exception Reports created by the Project Manager in **CS8 – Escalating Project Issues**, which would show Tolerances being exceeded,
- **DP5 – Confirming Project Closure** where the Actual Duration and Costs would be compared to the Planned Duration and Costs.

Page 16

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## Project Manager Controls

The Project Manager controls the project through:

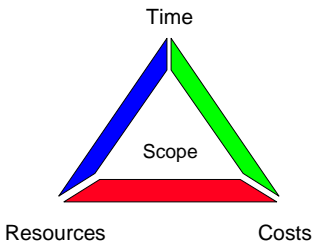
- The normal day-to-day management tasks which should be recorded on the **Daily Log**. The Project Manager controls Product delivery through:
  - The definition of Products in **PL2 – Defining and Analysing Products**,
  - Authorising work to commence in **CS1 – Authorising Work Packages**,
  - **CS2 – Assessing Progress** where the Project Manager would review Checkpoint Reports created by Team Managers, and
  - **CS9 – Receiving Completed Products**.

Page 17

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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.



Page 18



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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 **SU – 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.

Page 25

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## Level 1 – Planning Without Resources

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

Page 26

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## Creating Projects

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

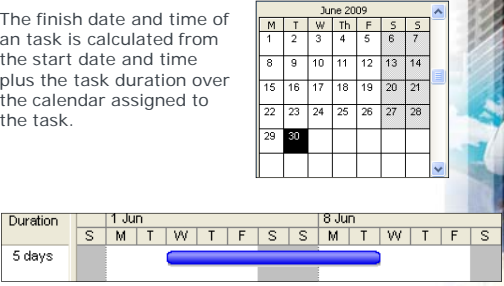
- Project Name
- The Project Start Date (and perhaps the Finish Date)
- It would be helpful to know other important information such as:
  - Client name, and
  - Other project data such as location, project number and stakeholders.

Page 27

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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.



Duration: 5 days

Page 28

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## Microsoft Project Options for Product Based Planning

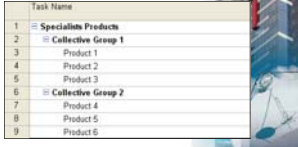

- Microsoft Project is not entirely suitable to complete Product Based Planning but we will make some suggestions for this process,
- Other option are to invest in PRINCE2 software such as:
  - P2World, available from Eastwood Harris Pty Ltd, or
  - P24MSP,
- Or use commercial desk top packages such as the Excel Organization Chart function.

Page 29

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## Product Breakdown Structure Options

- 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

Page 30

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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.

Page 31

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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 which is required by PRINCE2 for External Products.

```

    graph TD
      PA{{Project Approval}} --> P2[Product 2]
      PA --> P1[Product 1]
      P1 --> P3[Product 3]
      P3 --> P5[Product 5]
      P3 --> P4[Product 4]
      P2 --> P5
      P5 --> P6[Product 6]
  
```

Page 32

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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.

Page 33

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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:

Page 34

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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.

Page 35

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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	[Gantt bar from day 1 to 7]														
2 Successor with 3 day Lag	[Gantt bar from day 4 to 10]														
3	[Gantt bar from day 1 to 7]														
4 Predecessor	[Gantt bar from day 1 to 7]														
5 Successor with 3 day Lead	[Gantt bar from day 4 to 10]														

Page 36

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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 a 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
						SMTWTFS	SMTWTFS	SMTWTFS
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			

Page 37

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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.

Page 38

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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.

Page 39

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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).

Page 40

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## Task Early Start Constraint

- A 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 Jun 09	8 Jun 09	15 Jun 09	22 Jun 09
						SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
1 Start Milestone	0d	7 Jun	7 Jun	0d	0d				
2 Activity A	5d	12 Jun	17 Jun	0d	0d				
3 Activity B	5d	19 Jun	24 Jun	0d	0d				
4 Activity C	5d	22 Jun	27 Jun	0d	0d				
5 Activity D	2d	8 Jun	9 Jun	11d	3d				
6 Activity E	2d	15 Jun	16 Jun	8d	8d				
7 Finish Milestone	0d	25 Jun	25 Jun	0d	0d				

Page 41

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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 Jun 09	8 Jun 09	15 Jun 09	22 Jun 09
						SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
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	2d	8 Jun	9 Jun	7d	7d				
6 Activity 5	2d	22 Jun	23 Jun	-1d	0d				
7 Activity 6	2d	22 Jun	23 Jun	-1d	0d				
8 Activity 7	2d	22 Jun	23 Jun	-1d	0d				
9 Activity 8	2d	22 Jun	23 Jun	-1d	0d				

Page 42

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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 it 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
1 Start Milestone	0d	7 Jun	7 Jun	0d
2 Activity 1	5d	8 Jun	12 Jun	0d
3 Activity 2	5d	15 Jun	19 Jun	0d
4 Activity 3	5d	22 Jun	26 Jun	0d
5 Activity 4	2d	8 Jun	9 Jun	11d
6 Activity 5	2d	22 Jun	23 Jun	3d
7 Finish Milestone	0d	25 Jun	25 Jun	0d

Page 43

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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.

Page 44

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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%	12 Feb	19 Feb	1 day	0 days
4 Task 3	5 days	0%	20 Feb	28 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

Page 45

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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.

Page 46

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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
- Statusing 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.

Page 47

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## Now lets get our hand dirty!

Page 48

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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

Page 49

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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.
- **Extensible Markup Language (XML)**. This is intended to replace the mpx format and is intended to be used to exchange data with other programs.

Page 50

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## Creating Projects and Setting up the Software

- The instructor will demonstrate the software functions.

Page 51

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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

Page 52

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## Navigating Around the Screen

- The instructor will demonstrate the software functions.

Page 53

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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

Page 54

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## Calendar Calculation

- The finish date (and time) of a 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
5 days	M T W T F S S	M T W T F

Page 55

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## Defining Calendars

- The instructor will demonstrate the software functions.

Page 56

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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.

Page 57

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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

Page 58

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## Adding Tasks

- The instructor will demonstrate the software functions.

Page 59

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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.

Page 60

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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.

Page 61

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## Organising tasks Using Outlining

- The instructor will demonstrate the software functions.

Page 62

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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.

Page 63

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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.

Page 64

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## Formatting the Display

- The instructor will demonstrate the software functions.

Page 65

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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.

Page 66

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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."

Page 67

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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)

Page 68

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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

Page 69

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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 this:

The **SF** dependency would be:

Page 70

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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:

Page 71

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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

Page 73

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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 and therefore these would have to be represented with, for example, boxes with round corners or a stretched octagon.
- 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.

Page 74

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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 PRINCE2 for External and Integration Products will need to be abandoned.

Page 75

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## Task Network View

- The instructor will demonstrate the software functions.

Page 76

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## Module 11 – Constraints

Topics:

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

Page 77

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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:

Page 78

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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.....

Page 79

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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.

Page 80

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## Constraints

- The instructor will demonstrate the software functions.

Page 81

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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

Page 82

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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.

Page 83

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## Filters

- The instructor will demonstrate the software functions.

Page 84

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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

Page 85

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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.

Page 86

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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

Page 87

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## Printing and Reports

- The instructor will demonstrate the software functions.

Page 88

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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

Page 89

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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.

Page 90

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## Tracking Progress

- The instructor will demonstrate the software functions.

Page 91

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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

Page 92

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## Grouping Tasks, Outline Codes and WBS

- The instructor will demonstrate the software functions.

Page 93

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## Module 17 – Options

Topics:

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

Page 94

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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	Spelling	Save
Schedule	Calculation	Edit	Calendar
(View)	General		

Page 95

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## Options

- The instructor will demonstrate the software functions.

Page 96

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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

Page 97

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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.

Page 98

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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.

Page 99

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## Resources and Expenses

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Page 100

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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

Page 101

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## Assigning Resources and Costs to Tasks

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Page 102

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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

Page 103

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## Resource Histograms, Tables, S-Curves & Leveling

- The instructor will demonstrate the software functions.

Page 104

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## Module 21 – Statusing 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.

Page 105

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## Statusing 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
- Statusing 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.

Page 106

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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.

Page 107

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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.


Page 108

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## Statusing a Resourced Schedule

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Page 109




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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

Page 110




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## Tools and Techniques for Scheduling

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Page 111



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## Review Expectations

- Complete Feedback Sheet
- Have we met your expectations?

Page 112

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## Thank you for attending

Page 113

