



# Practical Project Scheduling

## Easy CPM 2-Day Virtual Workshop

### Session 1: Design and Structure your Schedule

Introductions, overview, and house keeping

#### The need for planning and scheduling

- a) Purpose = communication not control
- b) Understand audience

#### Simple -v- complex projects

#### Planning -v- scheduling

#### The project scheduler

#### Planning the planning

#### Planning the schedule management

- a) Scheduling Heuristics & Templates
- b) Optimum update cycle

#### PDM Network building blocks Basic framework of a schedule

- a) Activities & Milestones
  - i. Milestones
  - ii. Attributes of an activity
  - iii. Durations
- b) Logic Links
- c) Rules of logic
- d) Building the project 'Road Map'

#### Understanding the Project

- a) Project scope & Objectives

#### Project Planning

- a) Strategy and methods

### Session 2: Major Project Schedules & Analysis

#### Schedule Design

- a) Optimum update cycle
- b) Rolling Wave planning and Schedule Density
- c) Gateways and phasing / project life cycle
- d) Schedule Levels
- e) Managing multiple schedules



### **Project Breakdown Structures**

- a) OBS, CBS, RBS, etc

### **Work Breakdown Structures**

- b) Terminology
- c) Work packages
- d) Planning packages
- e) WBS Dictionary

### **Time Analysis**

- a) Integers -v- elapsed time
- b) Forward Pass
- c) Back Pass

### **Free Float, Total Float & the Critical Path**

- a) Defining the Critical Path
- b) Float calculations and definitions
- c) Using float wisely

## **Session 3: Scheduling History, Uncertainty & Risk Management**

### **Calculating Durations**

- a) Options: Analogous -v- Parametric
- b) Problems with production rates
- c) Problems with effort driven durations

### **Network logic and duration issues**

- a) Link types
  - i. FS/SS/FF/SF
  - ii. Mandatory/discretionary/external
- b) Leads and Lags
- c) Links can cause problems

### **History of scheduling**

- a) Barcharts, Milestone Charts and Flowline
- b) ADM / PDM / PERT

### **Confidence levels**

### **Risk & Uncertainty**

### **PERT**

- a) PERT Analysis
- b) PERT Merge Bias

### **Monte Carlo Analysis**

- a) Monte Carlo Analysis
- b) Normal, Beta and Triangular distributions

- c) Loops and Conditional Branches

#### **Risk management**

#### **Probability and contingency**

- a) Normal variability
- b) Risk Events (contingencies)
- c) Management reserves (Unknown unknowns)

#### **Calendars**

#### **Constraints**

### **Session 4: Resource and Costs Analysis, Tools**

#### **Resources**

- a) People and equipment
- b) Materials and consumables
- c) Money and work space

#### **Resource Analysis**

- a) Availability / calendars / limitations
- b) Allocation Per day (time based) or Total (distributed or flexible)

#### **Resource levelling options**

- a) Aggregation
- b) Smoothing
- c) Levelling

#### **Resource problems**

- a) Resource schedule
  - i. No float – balanced by resource allocation
  - ii. Critical resources & resource float
- b) Productivity
  - i. Multi-tasking

#### **Cost Management & Cash flow analysis**

- a) Developing the baseline budget
- b) Types of cash flow
- c) The Funding gap

#### **Software tools**

- a) EPM focus
- b) Project focus
- c) Presentation focused GUI's

#### **Line of Balance & Chainage Charts**

#### **Multi-Activity Charts**

## **Session 5: Techniques & Emerging Methods**

### **Emerging ideas**

- a) BIM
- b) EVM
- c) Agile
- d) Complexity Theory

### **The schedule as a motivator**

- a) Motivation
- b) Critical Chain / Viper
- c) Gaining commitment
- d) The psychology behind the process

### **Schedule review and validation**

### **Contract programs (old and new views)**

### **Schedule baselines**

### **Maintaining schedule relevance**

### **Statusing the schedule - Gathering and recording actuals**

- a) Who to ask
- b) Data to collect
  - i. Start and Finish dates
  - ii. Time to finish and % work complete
  - iii. Resources used and Costs incurred
- c) Statusing and editing for accuracy

### **Updating the schedule**

- a) Review status
- b) Management action to
  - i. Lock in gains
  - ii. Mitigate losses

### **Dealing with 'Bad News'**

### **Schedule compression**

- a) What-If Scenarios
- b) Fast tracking
- c) Crashing (Mythical Man Month)

## **Session 6: Managing Scheduling & Allied Processes**

### **Record keeping and progress information**

- a) Data management



- b) Version control
- c) Change management
- d) Photo diaries & records

#### **Reporting options and communication**

- a) Focusing the information
- b) Coding structures
- c) Standardising report formats

#### **Types of Report**

- a) Management Reports – Milestone and Dashboards
- b) Team reports – Bar charts
- c) Variance and trend reports

#### **Managing for Success**

#### **Scheduling Guides and Standards**

#### **The role of a PMO**

- a) Types of PMO
- b) Roles and responsibilities

#### **Schedule quality assessments**

- a) Schedule assessment tools
- b) Practical considerations
- c) Logical inconsistencies (links cause problems)
- d) Feedback & Benchmarking

#### **Dispute management**

- a) The Delay and disruption Protocol
- b) Delay analysis options

#### **Earned Value Management**

- a) Earned Value concepts
- b) WBS / OBS / Control Accounts / Work Packages

#### **Earned Schedule**

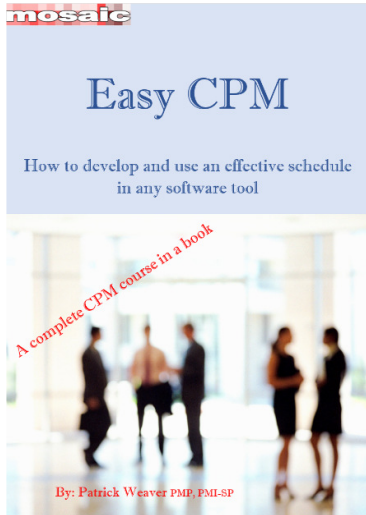
#### **Summary & Course wrap Up.**

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#### **Course inclusions**

Each trainee will receive a free copy of:

**Easy CPM - How to develop and use an effective schedule in any software tool**



**Easy CPM** is a self-paced course-in-a-book, supported by Mosaic Project Services Pty Ltd. The purpose of this 'course-in-a-book' is to provide practical guidance to people involved in developing, or using schedules based on the Critical Path Method (CPM). The book is designed to act as a reference and practice guide to enhance the effectiveness of their scheduling practice after they have learned to use the CPM scheduling software of their choice.

The book is divided into six sections, each section includes guidance on an aspect of CPM scheduling, references, and a set of 20 questions; with the answers in Section 7. Section 8 incorporates the appendix.

Open the Book2Look preview to see the full table of contents, sample pages, and sample questions & answers. The free preview is available at: <https://www.book2look.com/book/kjAKgHncnf>

For more information see: <https://mosaicprojects.com.au/shop-easy-cpm.php>

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**To discuss your CPM scheduling training requirements, contact:**

Mosaic Project Services Pty Ltd.

Tel: +61 (0)3 9696 8684

Email: [training@mosaicprojects.com.au](mailto:training@mosaicprojects.com.au)

Web: <https://mosaicprojects.com.au/contact.php>

**For more on our CPM Training see:**

<https://mosaicprojects.com.au/Training-WS-CPM.php>