Optimal Project Scheduling

A Two-day Training Workshop

Two Gold Seal Credits

Intro:

Scheduling is central to construction projects and forms a critical space in the planning phase. Schedules have undisputed implications on various aspects of a construction projects, as well as on the relationship with stakeholders. We argue and prove that there is no such thing as one-size-fits-all when it comes to schedules. Schedules must be tailored and optimized to project-specific priorities. This workshop is designed to take the participants through the essentials of an initial scheduling process, which will be followed by alternative schedule optimization and refinement techniques, depending on the nature of project priorities.

Purpose:

The purpose of this workshop is to develop and reinforce the participants' capability in (a) building initial construction project schedules, (b) identifying schedule-related priorities, and developing optimized schedules that meet project-specific priorities. The workshop is designed to engage the participants in group activities that largely simulate real-world experiences.

Objectives:

By taking this workshop, the participants will be able to

- Understand work breakdown structure (WBS) and learn two common approaches to building it
- Learn how project schedules are derived from WBS's and other types of required inputs
- Become familiar with common estimating approaches and supporting techniques
- Follow the underlying logic and manual procedure of creating a critical path schedule
- Understand the significance of critical paths in relation to meeting cost and schedule targets
- Obtain an basic introduction into the use of software for scheduling purposes
- Appreciate the benefits of resource levelling and smoothing of schedules
- Determine the type of schedule optimization approach that suits project priorities
- Optimize time-constrained schedules
- Optimize resource-constrained schedules

Outline:

Day 1

Work Breakdown Structure

What is it and what it's not?
How is it created?
Where to stop detailing a WBS?

From WBS to Schedule

What info is needed to build a schedule?
Where to get the info?

Common Estimating Approaches

Top-down and supporting techniques
Bottom-up and supporting techniques
How to choose an approach for my estimating needs?

Critical Path Scheduling

- *Network diagrams and types*
- *What's a path?*
- *Scheduling template for tasks/activities*
- *Drawing a network diagram*
- *The math behind network diagrams*
- *Identifying the critical path*
- *The significance of the critical path*

Scheduling Software Brief Demo

- *Default screen layout*
- *Initiating a schedule starting with WBS*
- *Setting up essentials*
- *Defining task dependencies*
- *Formatting basics*

Day 2

Schedule Improvement Approaches

- *Project prioritization matrix*
- *What constitutes "improvement"?*
- *The merits of levelling resources*
- *Is cost of the essence?*
- *Is time of the essence?*

Resource-constrained Scheduling

- *Levelling may be helpful but insufficient*
- *Identifying resource conflicts and over-allocations*
- *The iterative procedure of resolving resource conflicts with the least negative effect*

Time-constrained Scheduling

- *Schedule compression approaches and their implications*
- *Time-cost trade offs*
- *Developing various schedule options*
- *Identifying the planner-preferred schedule option*
- *Finalizing schedule selection with the customer*

The Facilitator:

Brian Amouzegar is the founder and president of Plantek Productivity Consulting Inc. A "capacity building" catalyst, Plantek provides world-class consulting and training to improve operational efficiencies, enhance quality of products and services, and implement the most effective management practices. Brian holds a bachelor degree in industrial accounting, a master degree in industrial engineering and is pursuing his doctoral studies in engineering management. He is a senior member of the American Society for Quality, an ASQ certified Quality Engineer (CQE), Six-sigma Black Belt (SSBB) as well as a Project Management Professional (PMP). As a scholar-practitioner, Brian has a lifelong passion for education and teaches graduate and undergraduate courses in his area of expertise. He is an adjunct faculty with BCIT, New York Institute of Technology and University Canada West. Brian's international project experience spans over North America, Asia, Europe, and the Middle East.

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