Course: Simulation Modeling for Project Management

ID: 1384-SIM01 **Contact Hrs. / PDUs:** 7 **Course Length:** 1 Day

Course Description: This one-day course focuses on the most advanced techniques available for estimating time and cost or evaluating project risks. Imagine you could do the same project or tasks a thousand different times. Would any two times be identical? No. However, would you become significantly more accurate at estimating what it takes to complete the project? Absolutely! Simulation modeling and it's most frequent form Monte Carlo Simulations provide just such a capability. In this class you learn hands on two of the most common tools for making practical use of this powerful tool.

Course Objectives:

- Learn the what a simulation model is, when & why you should use one
- Learn the basic statistical curves used in simulation models and when to use each
- Learn the basics of simulation models
- Learn to effectively use what-if scenarios on the fly
- Learn the basics of the @Risk tool
- Learn the basics of the Crystal Ball tool

Target Audience: Experienced project managers looking to take their estimating and management skills to the next level

Prerequisites: An understanding of a WBS, the Critical Path Method and the basics of project management.

Provided Material:

- Course Manual
- Evaluation copy of software used in the course

Course Outline:

- **Lesson 1:** Introductions
  - The most common forms of estimating & risk management
  - What is missing?
  - What are the most common excuses for not using simulations?
  - What are the most common risks in simulation modeling?
- **Lesson 2:** The basics of simulation modeling
  - What is a simulation model?
  - What kind simulation modeling exist for project managers?
  - What applications support simulation modeling (@Risk and Crystal Ball)
  - What are the steps in developing a model?
- **Lesson 3:** It's all about the curves
  - What is a curve and what do they have to do with simulations?
  - How can the type of curve impact a model?
  - Which types of curves are available?
  - How do you decide which type of curve to use?
- **Lesson 4:** Applying simulation models to time and cost estimating
  - The basic scheduling equation
  - Applying a simulation model to scheduling
  - The basic cost equation
  - Applying simulation modeling to cost estimating
  - Applying simulation models to forecasting
- **Lesson 5:** Simulation Model for risk management
  - How does a simulation model help with risk management?
  - What variables are necessary to create a risk model?
  - What is the real world application of simulation models for risk management?
- **Lesson 6:** Real world implementation
  - Making effective use of what-if scenarios
  - How to impress senior management
  - Getting the most out of simulation modeling quickly!

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Looking Glass Development, LLC
P.O. Box 630516 Littleton, Colorado 80163-0516 303 663.5402
www.lookingglassdev.com information@lookingglassdev.com