

SEER- Manufacturing Training

The purpose of the SEER-Manufacturing (MFG) training is to familiarize each participant with the basic concepts of process based estimation and the application of these concepts using the SEER-MFG suite of processes. The course is comprised of both lessons and case studies designed to engage each student and make them proficient in the use and estimating techniques made possible by using the SEER-MFG Model. The SEER-MFG training is comprised of both Core and Advanced sessions. The class duration is dependant on the model selected and the manufacturing venue of the customer. Three course types are offered Aerospace, Electronics or Industrial & Commercial. Please remember Galorath Incorporated will work with our customers to customize the SEER-MFG workshop's so they deliver the most precise training possible aimed at you business specialties and needs.

Students will learn to apply SEER-MFG to develop an estimate that covers labor material and tooling in the customer's production environment.

Core Training Sessions

The Core sessions give the students an introduction to SEER-MFG concepts, learn how to navigate and understand the model parameters. In-depth understanding of all of the manufacturing processes covered in the workshop type selected or customized to suit the organizational needs. During the Core Sessions the class will perform trade studies, process based cost estimating, access data from other databases. Either using Case study examples exercises or real world "Live" estimating using customer supplied part and assembly data in the form of sketches, drawings, bills of material etc. In order to accomplish this Galorath will work with the customer to identify the training needs and information required for all the students to work with.

Advanced Training Sessions

In the advanced sessions the students will be developing and using SEER-MFG's built in server mode API to exchange data with other data bases and programs facilitating the models automation capabilities. They will learn to understand SEER-MFG probability outputs and perform risk project and rollup risk calculations using a Monte Carlo approach which is part of the SEER-MFG model. Also using the SEER-MFG architecture to develop and use knowledge base templates and create custom calculations templates (input parameters, mathematical equations and outputs) to increase productivity and customize the SEER-MFG model for the customer's individual needs. The students will gain an understanding of the SEER-MFG input parameters & output values; determine most appropriate plans in terms of Effort, Cost and Risk for any estimate they produce.

SEER-MFG Workshops Offerings

AEROSPACE

Schedule: Four (4) Days of Core and One (1) Day of Advanced.

Purpose: Open Workshop on SEER-MFG with Composites with a focus on aerospace manufacturing. The five day workshop teaches the students how to use SEER-MFG software for conducting design for manufacturability analysis, parametric cost estimating, accessing data from other databases, using knowledge bases and creating custom calculations (input parameters, mathematical equations and outputs). Modules covered will focus on the CAI Plug-in processes as they apply to aerospace manufacturing techniques and will also cover basic MFG processes including electrical assembly, PC board (fabrication, assembly, test and component costing), molding (injection, compression and blow molding), machining and cost roll-up. In addition to instruction on the use of the software, several case studies are covered during the class to give the students real hands-on experience. Concepts are applied to real world case studies to reinforce learning. Attendees will have ample opportunity to handle all the SEER- MFG modules.

Who should attend: This workshop is designed for Project Managers, Product Managers, Engineers (Design & Manufacturing), Engineering Management, Finance, Marketing, Manufacturing, Service and Corporate Management. Participants will apply MFG concepts to real world applications.

ELECTRONIC

Schedule: Three (3) Days of Core and One (1) Day of Advanced.

Purpose: Open Workshop on SEER-MFG with a focus on Electronic manufacturing. The four day workshop teaches the students how to use SEER- MFG software for conducting design for manufacturability analysis, parametric cost estimating, accessing data from other databases, using knowledge bases and creating custom calculations (input parameters, mathematical equations and outputs). The SEER-MFG Basic modules covered will focus on the Electrical Assembly, test and component costing, PCB fabrication and component installation, Cable and Harness development, molding (injection, compression and blow molding) fabrication, machining, and finishing's. In addition to instruction on the use of the software, several case studies are covered during the class to give the students real hands-on experience. Concepts are applied to real world case studies to reinforce learning.

Who should attend: This workshop is designed for Project Managers, Product Managers, Engineers (Design & Manufacturing), Engineering Management, Finance, Marketing, Manufacturing, Service and Corporate Management. Participants will apply MFG concepts to real world applications.

INDUSTRIAL & COMMERCIAL

Schedule: Three (3) Days of Core and One (1) Day of Advanced.

Purpose: Open Workshop on SEER-MFG with a focus on Industrial and Commercial manufacturing. The four day workshop teaches the students how to use SEER- MFG software for conducting design for manufacturability analysis, parametric cost estimating, accessing data from other databases, using knowledge bases and creating custom calculations (input parameters, mathematical equations and outputs). The SEER-MFG Basic modules covered will focus on the Part fabrication and assembly component costing, molding (injection, compression and blow molding), machining, finishing's. With composites, electrical and PCB assembly modules added on a as required basis for specific company needs. In addition to instruction on the use of the software, several case studies are covered during the class to give the students real hands-on experience. Concepts are applied to real world case studies to reinforce learning.

Who should attend: This workshop is designed for Project Managers, Product Managers, Engineers (Design & Manufacturing), Engineering Management, Finance, Marketing, Manufacturing, Service and Corporate Management. Participants will apply MFG concepts to real world applications.

SEER-MFG Workshop Schedules



AEROSPACE- CORE SESSIONS

Day 1:

- Intro to SEER & Basic Concepts
- MFG Set-Up
- Running SEER-MFG—Example
- SEER-MFG Common Parameters
- Fabrication
- Assembly
- Molding/Casting/Forging Processes
- Finishing

Day 3:

- Hand Lay-up
- Tow Placement (Insitu-E-Beam Cure)
- Filament Winding
- 3D-Weave
- Braiding
- P4A
- Autoclave Cure
- Trim

Day 2:

- Machining
- Sheet Metal Operations
- SEER-MFG Aero-Processes Overview
- Fit-up
- Fasten
- Drill
- Tubing
- Purchased Parts
- Additional Items

Day 4:

- E-Beam Assembly & Fabrication
- VARTM
- RTM
- Paste Bonding
- SPF/DB
- 3D-Reinforcement
- Electrical Assembly
- PCB Assembly

3

SEER-MFG Workshop Schedules



AEROSPACE-ADVANCED SESSION

Day 1:

- Intro to SEER & Basic Concepts
- Developing Custom Knowledge Bases
- Customizing SEER-MFG
- Server Mode Scripts
- Risk & Probability
- Reports, Charts & Outputs
- SEER RateMaker
- Summary

4

SEER-MFG Workshop Schedules



ELECTRONIC

CORE SESSIONS

Day 1:

- Intro to SEER & Basic Concepts
- MFG Set-Up
- Running SEER-MFG—Example
- SEER-MFG Common Parameters
- Fabrication
- Assembly

Day 2:

- Electrical Assembly
- PCB Assembly
- Molding/Casting/Forging Processes
- Purchased Parts
- Additional Items

Day 3:

- Machining
- Finishing
- Composites

ADVANCED SESSION

Day 1:

- Intro to SEER & Basic Concepts
- Developing Custom Knowledge Bases
- Customizing SEER-MFG
- Server Mode Scripts
- Risk & Probability
- Reports, Charts & Outputs
- SEER RateMaker
- Summary

5

SEER-MFG Workshop Schedules



INDUSTRIAL & COMMERCIAL

CORE SESSIONS

Day 1:

- Intro to SEER & Basic Concepts
- MFG Set-Up
- Running SEER-MFG—Example
- SEER-MFG Common Parameters
- Fabrication
- Assembly

Day 2:

- Molding/Casting/Forging Processes
- Machining
- Finishing
- Purchased Parts
- Additional Items

Day 3:

- Composites
- Tubing
- Electrical Assembly
- PCB Assembly

ADVANCED SESSIONS

Day 1:

- Intro to SEER & Basic Concepts
- Developing Custom Knowledge Bases
- Customizing SEER-MFG
- Server Mode Scripts
- Risk & Probability
- Reports, Charts & Outputs
- SEER RateMaker
- Summary

6