Module 4: Advanced Planning & Scheduling (APS)

Course Introduction
This module provides an understanding of techniques that are widely used for generating finite capacity plan and schedule for factory operations. An overview of the field and issues will be followed by detailed discussions of the major techniques, mainly the heuristics and simulation-based techniques. Case studies based on industry applications will be presented to demonstrate the benefits of using these techniques. A unique feature about this module is the hands-on sessions which the participants will have the opportunity to build planning and scheduling models using both the heuristics and simulation-based software. Understanding of these techniques will allow planning and scheduling professionals and their managers to grasp the technical details of advanced Planning and Scheduling system and apply it to improve their factory performance.

Who Should Attend
This module is designed for Production Supervisors, Industrial Engineering Engineers, Production Engineers, Planners, Schedulers, Production Managers, Production Control Managers, and other professionals involved in Production and inventory management, Shop-floor operations management, Supply chain management, Procurement, and Materials management from the PE, Electronics, Aerospace and Automotive sectors.

Why This Course
- Designed specifically based on local industry demand
- Highly practical and intensive
- Latest knowledge and up-to-date technology
- Case studies highlighting industrial application
- Expert trainers in the field with industrial experience

What You Will Learn
- **Manufacturing Systems and Modules**
  - Types of Manufacturing Systems
  - Principles of Manufacturing Systems
  - Types and Uses of Manufacturing Models
  - Case study: Manufacturing plant of your current/previous company

- **Manufacturing Planning and Scheduling**
  - Manufacturing Planning & Scheduling Fundamentals
  - Shop Scheduling with High Product Mix
  - Heuristics-based Planning and Scheduling
  - Finite Capacity Scheduling – applications, trend and practical issues
  - Case study: Hands-on with Heuristics-based Planning and Scheduling software
• Simulation-based Planning and Scheduling
  - Basic Simulation Modelling
  - Review of Basic Probability and Statistics
  - Building Valid and Credible Simulation Models
  - Simulation-based Scheduling
  - Case Studies: Hands-on with Simulation Modelling using Flexsim and Simulation-based Scheduling System

• Emerging techniques and trends in Planning & Scheduling

About the Course Leaders

Mr Chua Tay Jin is currently a Principal Research Engineer in SIMTech. He has more than 22 years of working experiences in the area of manufacturing operations management related technologies. Since joining SIMTech, he has led several industrial and research projects in the areas of advanced planning and scheduling and enterprise resource planning. He is a certified practitioner in Production & Inventory Management (CPIM) and certified in Resource Management (CIRM) by APICS, The Association for Operations Management, USA. He is currently spearheading an industry-wide effort on helping companies in the PE industry by developing dynamic production planning and scheduling software for high-mix low-volume manufacturing environment. To date, he had three USA patents and one Singapore patent granted in the area of production planning and scheduling. He is also the Course Leader for the Graduate Diploma in Manufacturing Operations Management (MOM) course and the Module Leader for the Advanced Planning and Scheduling (APS) module. He has also obtained ACTA training and certification.

Dr Chong Chin Soon is currently a Principal Research Engineer in SIMTech. He graduated from The City University, UK with a BSc (Electrical and Electronic) in 1990, from Nanyang Technological University with a MEng (Mechanical) and a PhD (Electrical and Electronic). He has over 20 years of research and industrial experience in simulation, scheduling and optimisation as applied in the domain areas of container port, factory and warehouse, semiconductor manufacturing, MRO inventory optimisation. He specialises in simulation-based scheduling and cost optimisation using meta-heuristics including genetic algorithm, bee colony, tabu search and simulated annealing. He has obtained ACTA training and certification.

When and Where

• Commencement date: 8 January 2014
  Every Wednesday from 6.30pm to 9.30pm

• Venue: Singapore Institute of Manufacturing Technology
  71 Nanyang Drive, Singapore 638075

Course Fee

• The course fee for the complete Graduate Diploma Programme is $15,000 before WDA funding & GST
• The course fee for one module is $3,000 before WDA funding & GST
• Singaporeans and Permanent Residents are entitled up to 90%* funding of the course fee from WDA

Developed by: SIMTech
Funding agency: WDA

For general enquiries, please email: kto-enquiry@SIMTech.a-star.edu.sg
*Ters and Conditions apply, please refer to: http://kto.SIMTech.a-star.edu.sg