Computer Integrated Manufacturing with OpenMES 1

COURSE OUTLINE

Course Name	**Computer Integrated Manufacturing with OpenMES 1**
Catalogue Number	88/77-3017-0000
Category	CIM
Duration	15 Hours
Recommended Prerequisites	Advanced Robotic Programming, CNC Technology courses

Activity 1: Introduction to CIM

- Automation
- Computer Integrated Manufacturing
- Why CIM?
- CIM Training
- Main Components of CIM
- Basic CIM System

Activity 2: Introducing OpenMES Software

- OpenMES© Software
- OpenMES Project Manager
- OpenMES Manager Window
- Software Viewing Features
- Task: Accessing Working Cells from the Project Manager
- Task: Rotating and Zooming in the Graphic Display
- Task: Redirecting the Camera
- CIM Production
- Task: Observing a CIM Production Cycle

Activity 3: Parts and Production Flow

- Parts and Production
- Important Production Components
- CIM Production Workflow

Task: Running a Basic Production Cycle

Industrial Safety

Activity 4: Storage Setup

Storage and Stock Management

Alternative Storage Options

Task: Identifying the Location of a Part in Storage

Storage Definition

Task: Setting the Storage Stock

Task: Setting the Storage Stock and Part Location

Task: Observing the ASRS Contents After Production

Task: Setting Default Storage

Activity 5: Production Planning

Defining the Production Plan

MRP

Viewing Customer Order Details

Task: Editing a Customer Order

Viewing Manufacturing Order Details

Task: Updating a Manufacturing Order

Task: Tracking Production Following MRP Modification

Task: Editing the Customers List

Task: Ordering Parts for the New Customer

Activity 6: Processes and Machine Definition

Processes in CIM

OpenMES Machine Definition

Viewing Machine Definition Details

Process Definition and System Behavior

Adding a New Process in CIM

Task: Adding a New Process to an Existing Machine

Designing a Part

Activity 7: Part Definition

- Considerations in CIM Cell Design
- CIM Definitions
- The Product in the Basic CIM Cell
- Part Definition
- Task: Viewing Supplied Part Information
- Task: Viewing Product Part Information
- Task: Interpreting the Part Definition Window

Activity 8: Defining a Product Part

- Limitations on Part Production
- Limitations of Existing System Structure
- Milling Machine Limitations
- Task: Adding a New Supplied Part to the Basic CIM Cell
- Task: Adding and Defining a Product Part

Activity 9: Producing a New Part

- Simulation as a Tool in Predicting On-line System Behavior
- Preparing to Run Production of a New Part
- Task: Updating Storage
- Task: Placing an Order for the New Product Part
- Task: Tracking Production of WOOD PROD

Activity 10: Timing and Optimization

- Reducing Manufacturing Cycle Time
- Time Synchronization
- System Optimization
- Time Axes
- OpenMES Scheduling Tool - Scheduler Gantt
- Task: Preparing to Observe Production Timing
- The CIM Scheduler Window
- Task: Observing Production Timing with the Scheduler Gantt

Activity 11: Viewing Production Details in the Device View

- OpenMES Manager Viewing Areas
- Viewing Production Details Per Device
- Task: Viewing Device Activity at Station 1
- Task: Viewing Device Activity at the CNC Station

Activity 12: Viewing Production Details in the Storage View

- Identifying Part Location During Production
- The Storage View
- Task: Viewing Production Details in the Storage View

Activity 13: Defining Part Production in the Lathe

- Part Production in the Lathe
- Task: Defining a New Process for the Lathe
- Task: Adding a New Part

Activity 14: Integrated Production

- Integrated Production
- Task: Setting the MRP Manufacturing Order
- Task: Updating Storage

Activity 15: Tracking Integrated Production

- Determining the Sequence of Production
- Task: Tracking the Sequence of Production
- Bottlenecks and System Optimization
- Task: Tracking the Updated Production Sequence