Execution & Control of Operations

This course focuses on three main areas: prioritizing and sequencing work; executing work plans, implementing controls, and reporting activity results; and evaluating and providing feedback on performance. The course explains techniques for scheduling and controlling production and process operations. It also addresses the execution of quality initiatives and continuous improvement plans as well as controlling and handling inventories. Finally, the course presents techniques for evaluating performance and collecting data for effective feedback.

I. Prioritizing and Sequencing Work to be Performed
   A. Interfaces
      1. Planning
      2. Manufacturing supervision
   B. Production environment
      1. Work cell
      2. Group technology
      3. Focused factory
      4. Synchronous or flow shop production
      5. Functional
      6. Site base
   C. Scheduling Production and Process Operations
      1. Scheduling techniques
      2. Line balancing
      3. Bottleneck identification and management
      4. Queue management
      5. Lead-time control
      6. Preventive maintenance

II. Executing Plans, Implementing Physical Controls, and reporting Results of Activities Performed
   A. Authorizing and Reporting Activities for Push Systems
      1. Release activities
      2. Dispatching techniques
      3. Expediting/de-expediting
      4. Availability checking
      5. Documentation
      6. Staging/kitting
      7. Work assignment
8. Work-in-process
9. Material (scrap, rework, yield)
10. Capacity resources (labor, equipment)
11. Data collection techniques

B. Authorizing and Reporting Activities for Pull Systems

1. Kanban signals
2. Documentation
3. Work assignment
4. Data collection
5. Count points
6. Work-in-process
7. Bill of material levels
8. Container quantities
9. Visibility
10. Immediate feedback

C. Transaction Reporting

1. Inventory transactions and methods
2. Backflushing

D. Communicating Customer-Supplier Information

1. Sharing of information
2. Methods of data communication (edi, fax, internet, bar-coding, etc.)

E. Controlling Resources

1. Storage and location issues
2. Transportation and material handling
3. Impact of production rate and lead time on inventory

F. Executing Quality Initiatives, Eliminating Waste, and Implementing Continuous Improvement Plans

1. Process improvement
2. Housekeeping and workplace organization
3. Paperwork and transaction reduction
4. Set-up reduction
5. Quality and continuous improvement tools
6. Lead time and throughput time reduction
7. Lot size reduction
8. Move/transit time reduction
9. Developing, evaluating, rewarding people

III. Evaluating Performance and Providing Feedback

A. Evaluating Quality Management Processes
   1. Concept of variation
   2. Statistical Process Control (SPC)
   3. Process capability analysis
   4. Quality Function Deployment (QFD)

B. Monitoring Supplier Performance
   1. Specifications and standards
   2. Quality audits
   3. Incoming inspection
   4. Sampling plans
   5. Delivery performance

C. Evaluating Performance of Production Operations
   1. Data sources and requirements
   2. Accuracy of inventory records
   3. Performance reporting
   4. Quality measures

D. Evaluating Contractual and Regulatory Compliance and Cost Performance of Operations
   1. Certification and regulatory compliance
   2. Cost management processes
   3. Audits and control