



Wayne County Community College District

COURSE SYLLABUS

LOG 104 Materials Management

CREDIT HOURS: 3.00

CONTACT HOURS: 45.00

COURSE DESCRIPTION:

This course will introduce students to materials management by learning the planning production process, master scheduling, material requirement and forecasting material demands and inventory levels. This course is designed to build on the student's knowledge of supply chains and how effective material management improves supply chain performance.

PREREQUISITES: LOG 101

EXPECTED COMPETENCIES:

Upon completion of this course, the student will be familiar with:

- Explain the complex environment of operations management.
- Define supply chain management and concepts.
- Describe the basic manufacturing strategies.
- An understanding of supply chain metrics and how they are used.
- An understanding of manufacturing planning and control system.
- A basic knowledge of sales and operations planning.
- Explain the importance of resource requirements planning.
- Compare and contrast between the different manufacturing plans.
- The steps involved in developing a master production schedule.
- An understanding of capacity planning.
- The importance of production planning, master scheduling, and sales.
- Explain projected available balance and time fences.
- Name and describe the bills of material structure and components.
- Describe the processes in material requirements planning.
- Differentiate between the order types.
- Explain how to manage the material requirements plan
- Name and describe the processes of capacity planning.
- Explain how to measure capacity and the levels of capacity.
- Describe how orders are scheduled.
- Explain the steps involved in making a capacity plan.
- Describe the processes of production activity control.
- Explain the data requirements for production activity control.
- An understanding of load leveling and scheduling bottlenecks.
- Describe the theory of constraints and Drum-Buffer-Rope.
- An understanding of purchasing cycle.
- Describe the calculations needed for price determination.
- Explain the impact of material requirements planning on purchasing.
- Understand the expansion of purchasing into supply chain.
- Name and describe the characteristics of demand forecasting.
- Explain principles of forecasting.
- An understanding of the forecasting techniques.



Wayne County Community College District

COURSE SYLLABUS

LOG 104 Materials Management

- Describe how forecast are tracked.
- Explain inventory and the flow of material.
- An understanding of the supply and demand patterns.
- Name and describe the inventory costs.
- Describe cash flow analysis.
- An understanding of the calculations required for economic-order quantity (EOQ).
- Describe the variations of the EOQ model.
- An understanding of the period-order quantity (POQ)
- Describe the practical considerations when using the EOQ.
- An understanding of order point systems.
- How to determine safety stock.
- How to determine service levels.
- Differentiate between forecast and lead-time intervals.
- Name and describe the warehouse activities.
- Explain warehouse physical control and security.
- An understanding of inventory record accuracy.
- Describe the technological applications used in warehousing.
- Describe the channels of the distribution.
- An understanding of the activities in the physical distribution system.
- Explain the different modes of transportation and the costs of carriage.
- Name and describe the transportation and cost elements.
- An understanding of multi-warehouse systems.
- Explain the steps of a product life cycle.
- An understanding of the product development principles.
- Describe the steps in process design and the factors that influence process design.
- Explain continuous process improvement.
- Explain the Just-in-time philosophy.
- An understanding of JIT environment.
- Describe manufacturing planning and control in a JIT environment.
- Explain lean production.
- Define quality and total quality management.
- Explain quality cost concepts.
- An understanding of process capability and control.
- Explain sample inspection.

ASSESSMENT METHODS:

Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:

90%-100% = A
80%-89.9%= B
70%-79.9%= C
60%-69.9%= D
<60% = E