MODULE 1: MANUFACTURING COURSE OVERVIEW

Module Overview

In many ways, manufacturing resembles baking. You use a set of steps (operations) to convert a list of ingredients (components) into a finished product. In manufacturing, the set of operations is known as a *routing*, and the list of ingredients is known as a *production bill of materials* (BOM). The resulting product can be shipped to customers, consumed internally as a subassembly, or stored in inventory.

An important difference between manufacturing and personal baking is one of scale. Manufacturers can use hundreds of workers and machines. They can make hundreds or even thousands of products at the same time, and they can routinely purchase, manage, and consume many thousands of components.

Such large-scale activities require good planning. For example, production planners must determine the products to make and when to make them in order to satisfy end demand. This is known as the *Master Production Schedule* (MPS). Material planners must determine the subassembly and raw material components that are required to fulfill the MPS. This is known as *material requirements planning* (MRP). If there are no firm sales orders, planners must estimate future demand. This is known as *forecasting*.

To help manufacturers control the manufacturing environment, Microsoft Dynamics® NAV 2013 Manufacturing provides the following functionality:

- Setup and maintenance of production bill of materials (BOM), routing, and capacities
- Creation and processing of production orders
- The ability to forecast for finished goods and components
- Planning, including the following:
  - Sales order planning
  - Master production scheduling (MPS)
  - Material requirements planning (MRP)
- Integrated subcontracting functionality
- Advanced capacity and shop-loading features

This course provides a conceptual and operational description of the manufacturing functionality of Microsoft Dynamics NAV 2013. It describes general manufacturing processes and teaches students how to use the program to perform standard manufacturing transactions.

You can use this course both in the context of an instructor-led training course and as reference material for self-training for students. It is also part of the curriculum for the Microsoft Dynamics NAV 2013 Manufacturing certification. Students can use this course as preparation for the Microsoft Dynamics NAV 2013 Manufacturing exam.

Training Prerequisites

To successfully participate in the manufacturing course or to study the material through self-training, participants should have a thorough understanding of the following:

- General manufacturing knowledge
- Inventory control
- Core financial information

Before You Start

Set your default profile to Production Planner. For more information, see the "Default Profile" lesson in "Sample Company Structure" in this training material.

All topics, demonstrations, and labs in this training material should be finished in sequence for modules one to seven, eight (you reset the database in module eight), and nine to fifteen (you reset the database again in module nine).

Objectives

The objectives are:

- Provide a course overview.
- Provide a course outline and a brief description of all course modules.

Course Outline

Each module in this course describes a different functionality. Because of the dependencies between the modules, we recommend that you teach the modules in sequence.

Each module starts with an overview of the features. A combination of explanations, demonstrations, and labs then shows how each feature works. A Test Your Knowledge section at the end of each module helps students test what they have learned.

This course consists of the following modules:

Module 1: Manufacturing Course Overview

- Provides a course overview.
- Provides a course outline and a brief description of all course modules.

Module 2: Sample Company Structure

- Provides an overview of the demonstration company, CRONUS International.
- Explains how to set the working date.
- Shows how to change the default profile to Production Planner.
- Describes license information.

Module 3: Production Bill of Materials (BOM)

- Describes the production BOM structure and its basic features.
- Explains and demonstrates production BOM advanced features.
- Shows production BOM reports.

Module 4: Basic Capacities and Routings

- Explains how to set up capacity.
- Shows how to create routings.
- Describes the advanced features for routings.
- Reviews the standard capacity and routing reports.

Module 5: Production Orders

- Describes the different production order statuses.
- Explains how to create and schedule a production order.
- Describes the different types of changes that you can make to a production order and shows how to make each change.
- Shows how to use the **Replan Production Order** batch job.
- Explains additional production order topics, such as reservations, statistics, phantom BOMs, and manufacturing batch units of measure.
- Reviews the production order listings and reports.

Module 6: Production Order Processing

- Reviews the flow of events as production orders move from release until they are finished.
- Describes the options and procedures that are related to material consumption and production output.
- Shows how to pick components and put away finished goods in the warehouse.
- Explains the uses of the consumption journal, output journal, and production journal.

Module 7: System Setup

- Describes all fields on the **Manufacturing Setup** page.
- Explains all fields on the item card that affect manufacturing.
- Reviews all fields on the stockkeeping unit card that affect manufacturing.

Module 8: Sales Order Interface and Order Planning

- Describes and demonstrates all aspects of sales order planning.
- Explains and demonstrates all aspects of order planning.

Module 9: Forecasting and Planning

- Describes the production forecast functionality.
- Explains the integration between production forecasting and planning.
- Shows how actual demand is netted against forecast demand.
- Describes forecasting by location, order tracking as it relates to forecasting, and forecasting setup.
- Reviews the forecast reports.

Module 10: Planning

- Describes the general concepts of the planning system.
- Introduces the planning worksheet and related functions.
- Explains how to use regenerative planning.
- Shows how to use net change planning.
- Describes how parameters affect the planning process.
- Explains how to use order tracking and action messages.

Module 11: Additional Planning Topics

- Defines item variants.
- Explains how to use locations in planning.
- Shows how to perform transfers between locations.
- Describes how to use blanket sales orders in planning.
- Explains how to use multilevel production orders.
- Reviews how to filter the planning worksheet.
- Shows how to change the replenishment system for a planning line.
- Describes how to refresh planning lines.
- Identifies the available planning reports.

Module 12: Subcontracting

- Describes how to set up a subcontractor and define subcontractor costs.
- Shows how to assign a subcontractor work center to a routing operation.
- Explains how to use the subcontracting worksheet to issue purchase orders to subcontractors.
- Describes how to post subcontracting purchase orders.
- Shows how to review subcontracting ledger entries.
- Reviews the Subcontractor – Dispatch List report.

Module 13: Advanced Capacity

- Explains how to set up work centers and machine centers.
- Shows how to set up shop calendars and capacity calendars.
- Describes registered absences and how to use them.
- Explains how to use capacity journals.

Module 14: Shop Loading

- Describes the basic tools that are used to manage shop loading.
- Explains how to manage shop loading by assuming infinite capacity.
- Shows how to manage shop loading by using finite capacity.
- Reviews the reports that are related to shop loading.

Module 15: Additional Manufacturing Topics

- Describes standard tasks and how to use them.
- Explains stop codes and how to use them.
- Reviews the various options for recording scrap and the relationships between the options.
- Defines non-productive time and shows how to use it in a production order.
- Shows how to reduce lead time.
- Describes how to make consumption journal entries and output journal entries for multilevel production orders.
- Defines production families and shows how to use them in a production order.

Module Review

This module provides an overview of the *Microsoft Dynamics NAV 2013 Manufacturing* course. It also provides an outline and brief description of all course modules.

Successfully completing this course helps the reader prepare for the Microsoft Dynamics NAV 2013 Manufacturing certification exam.