Course Syllabus
Microsoft Dynamics AX 2009 Production Series I
(Elements of this syllabus are subject to change.)

Key Data:

Course number: 80022
Instructor-Led Training (lecture and labs)
Student Materials: Microsoft Official Curriculum (MOC)
Certification Exam: MB6-822: AX 2009 Production

Introduction: This course explains the basic concepts and functionality in the Microsoft Dynamics AX 2009® Production planning module from the consultant's perspective. It covers the most important functionality in the module, including its setup and processes. All material used in this course is based on Microsoft Dynamics AX Version 2009. The course does not cover more advanced Production functionality. Instead, it should be seen as preparation for attending the Production Series II course, or, if relevant the course on Bill of Materials and Intercompany.

Prerequisites

Before attending this course, students must have:
- Completed the basic Microsoft Dynamics AX 2009 courses
- Know how to navigate through the system
- Have some experience working with BOMs, or attended a course covering basic BOM concepts

Chapter 1: Introduction to Production Series I

This lesson provides a high level summary of the main elements in production that will be found in the course. It contains basic conceptual information and a broad overview of some of the main core concepts such as:

- A description of the interactivity of the Production module with other modules and an example of a hypothetical in-house production work flow in a single company that illustrates this interaction. (An understanding of this interactivity is essential to understanding how to use the Production module.)
- A definition of core concepts in production such as BOMs, work centers, work center groups, operations and routes.
- An overview of the production life cycle and how the status of production orders reflects this cycle.
- An overview of Multisite functionality as it pertains to production.

Lessons
• Core concepts in production
• Setup and interconnectivity
• Overview of production process
• Production at multiple sites
• Example production scenarios
• Overview of additional production enhancements

Chapter 2: Bill of Materials (in Production)

This lessons contains a comprehensive overview of the role of the BOM as one of the Production module's core building blocks, including, screen shots, procedures and labs to illustrate the process. Since BOMs are used in production to specify ingredients or subordinate components that are required physically to make each assembled part number or item in production, they are essential to the functioning of the production life cycle and processes. Much of the setup and use of BOMs occur in the Inventory management module in Microsoft Dynamics AX 2009.The lesson includes an overview of the main elements of single level and indented BOMs with explanations on how to set up BOMs from different forms in Microsoft Dynamics AX 2009. It also provides a detailed look at BOM and item configurations, BOM calculation, BOM scrap and measurement configurations. The lesson concludes with an overview of the standard BOM reports and how they are used.

Lessons
• Understanding BOMS
• BOM versions
• Overview of creating BOMS
• Creating BOMs in the BOM form
• Creating BOMs in the Item details form
• BOM and item configurations
• BOM calculation
• BOM scrap
• BOM measurements
• BOM reports

Chapter 3: Calendars and Work Centers

This lesson provides an overview of another main building block of the Production module, the calendar and work center setup. Calendars and work centers are set up in the Basics module prior to using the Production module. They are set up in a specific sequence:

1. Create working time templates.
2. Create working times calendars.
3. Create work center groups.
4. Create work centers.

It includes a review of the forms used to create each step, as well as a brief review of how operations scheduling percentages, efficiencies, exclusivity and finite capacity planning (if used) pertain to work centers and work center groups.

Lessons
• Working time templates
• Calendars
• Work center groups
• Work centers
• Operation scheduling percentage, efficiency and exclusivity
• Capacity planning and finite capacity

Chapter 4: Operations and Routes

This lesson provides a step by step overview of the process of setting up operations, and routes in the Production module, (if these are relevant to your business). This includes a description of operation setup that establishes an appropriate order and context for the total production process of an item. The lesson also describes the use and set up of cost categories, an overview of the creation of route group parameters that pertain to all routes in that group, and a description of how to create routes which contain the sequence of events (or operations) that are used to produce an item. Finally, the lesson contains a brief discussion of the way scrap is calculated in the production environment, based on a set scrap percentage.

Lessons
• Operations
• Cost categories
• Cost groups
• Route groups
• Routes
• Scrap
• Route networks

Chapter 5: Parameters, Production Orders and Life Cycle

The Parameters, Production Orders, and Life Cycle lesson provides you with an overview of how to set up the perquisite production parameters and journal names that guide how production orders are created, estimated, scheduled and consumed by the application. It also reviews how feedback and cost accounting is handled in your production and reviews the stages the production order moves through as it follows the production life cycle. Finally, the lesson covers advanced settings that you can use to control how production orders are posted and handled, in particular situations.

Lessons
• Production parameters
• Production orders
• Production process overview
• Production status
• Estimation
• Optional advanced settings

Chapter 6: Production Scheduling and Subcontracting

This chapter provides:
- A detailed view of the scheduling step in the production life that includes both operations and job scheduling options.
- A brief overview of planned production orders and the role of the Master planning module in the scheduling function in production.
- Introductory information about subcontracting.

Lessons
• Scheduling options
• Operation scheduling
• Job scheduling and using the Gantt chart
• Master planning and planned production orders
• Locking production orders
• Dispatching
• Subcontracting

Chapter 7: Production Control and End

This course reviews the Release**,** Start, Report as finished and End stages in the production life cycle, in the order in which they are conducted. The forms used in each stage and a brief description of production consumption using production journals were reviewed in some detail. The Release, Start, Report as finished stages are considered part of production control. The End stage is conducted after the order is reported as finished. Before closing the order, a final price calculation is conducted which covers the consumption of items, services, item gains, and operations.

Lessons
• Estimation and scheduling run first
• Release production orders
• Start production orders
• Recording production consumption in journals
• Report production orders as finished
• End production orders

Chapter 8: Inquiries and Reports

The Inquiries and Reports lesson provides you with an overview of the different kinds of reports and inquiries available in the Production module in Microsoft Dynamics AX 2009. You can use inquiries to check for possible material stock outs, review the state of current production jobs, obtain an overview of all production and postings, and to analyze and view all route transactions. You can also view or print production reports that, among other things, include the usage of base data, a snapshot of current jobs in process, and the costs and production variances that impact your productions. In addition, you can roduce reports on routes, work centers, and production papers such as the picking list, route card, job card, and

route jobs. Finally, you can use update log reports to monitor information on all the orders in each of the selected production stages.

Lessons
• Production inquiries • Standard reports • Base data reports • Transactions reports • Journal and costing reports • Balance reports • Analysis reports • Route reports • Work center reports • Production papers reports • Update log reports

Microsoft Dynamics™ AX 2009 Production Series II

<u>Key Data</u>

Course number: 80023
Instructor-Led Training (lecture and labs)
Student Materials: Microsoft Official Curriculum (MOC)
Certification Exam: MB6-822: AX 2009 Production

Introduction: This course covers the more advanced functionality in the Production module in Microsoft Dynamics AX 2009. It provides more detail and builds upon the material presented in the Production Series I in Microsoft Dynamics AX 2009 course. To establish a common context, the course starts with a high level review of the key elements covered in Production I, such as core concepts used in production processes, scheduling, the general workflow in companies with one or more operational sites, and so on. From here, the course presents a more detailed view of certain key functionality, such as the use of inventory and storage dimensions, how subcontractors are used to outsource purchasing, production or operations, information on advanced production scheduling functionalities, the management and control of scrap and waste in the manufacturing process, an overview of manufacturing strategies, (including the use of the Enterprise Portal and Product Builder tools that allow customers to select an configure their own products), and finally, a synopsis of the way in which the Production module is implemented in Microsoft Dynamics AX 2009.

Prerequisites

Before attending this course, students must have:
- Completed the basic Microsoft Dynamics AX 2009 courses
- Know how to navigate through the system
- Experience working with BOMs, or attended a course covering basic BOM concepts
- Completed the Production Series I ILT course.

Chapter 1: Production Series I Review

This lesson reviews the main concepts of the Production Series I course, including BOM, routes, operations, life cycle and multisite functionality.

Lessons
• Multisite Review
• Core Concepts in Production
• Bill of Materials (BOM)
• Calendars and Work Centers
• Operations and Routes
• Life Cycle, Parameters, and Production Orders
• Scheduling
• Master Planning and Planned Production Orders
• Describe how multisite functionality interacts with the Production module
• Explain the definition and set up of core conceptual elements in production, including BOMs,
• calendars, work centers, operations and routes
• Provide an overview of the production life cycle, parameters and production orders
• Define and describe the use of operation and job scheduling
• Explain how master planning and the Production module interact

Chapter 2: Inventory Dimensions in Productions

This lesson describes the general setup and use of inventory dimensions in production. In particular it covers the storage dimensions used in production to define warehouses, pallets, batches, serial numbers and site.

Lessons
• Item Dimensions
• Storage Dimensions
• Dimension Groups and Dimensions
• Allocating Batch and Serial Numbers
• Production Order Reservations
• Marking
• Trace Batch and Serial Number

- Inventory Dimensions and Multisite
- Define item and storage inventory dimensions
- Describe the use of serial or batch numbers to track and control manufactured items
- Use inventory reservations in production
- Understand inventory marking
- Describe inventory trace functions
- Use inventory dimensions when working with multiple operational sites

Chapter 3: Subcontractor Work

This lesson describes how to set up and work with BOM lines, purchase orders, production orders, and operations when subcontractors are used in the production process.

Lessons
• BOM Line Types
• Purchase Orders
• Production Orders
• Operations

Chapter 4: Advanced Production Scheduling

This lesson provides more detail about the advanced optional production scheduling settings, including properties, efficiencies, task groups and route groups.

Lessons
• Production Groups
• Production Pools
• Properties
• Task Groups
• Route Groups
• Priority Scheduling
• Splitting a Production Order

Chapter 5: Scrap and Waste

This lesson describes the management of constant and variable scrap settings that can be placed on the BOM, work centers and routes.

Lessons
• BOM Scrap
• Work Center Scrap
• Route Scrap
• Costing of Scrap/Waste

Chapter 6: General Ledger and the Production Series

This lesson provides an overview of the different settings that can be used to determine how item costs are posted to the general ledger.

Lessons
• Production Life Cycle Review
• Ledger Settings
• Production Journals
• Posting Profile in Production Groups
• Production Cost Overview
• End Production Orders

Chapter 7: Manufacturing Strategies

This lesson provides a high level conceptual overview of a number of manufacturing strategies, including a brief description of how Enterprise Portal and Product Builder can be employed.

Lessons
• Configure to Order
• Make to Order
• Assemble to Order
• Make to Stock
• Repetitive Manufacturing
• Job Shop
• Make to Contract
• Engineer to Order

Chapter 8: Implementing Production Series

This lesson is an overview of how the Production module is implemented. It places the implementation in context and among other things reviews the sequential setup of BOMs, work centers, routes, operations and multisite.

Lessons
• Setup and Interconnectivity
• Implementing Production Checklist
• Setting up Production Parameters
• Modifying Data Types
• Setting up Item and BOM Tables
• Setting up Work Centers
• Setting up Operations and Routes
• Multisite

- Describe the interconnectivity of the production module with other modules
- Describe the main elements of the production implementation checklist
- Set up production parameters
- Modify data types used by the production series
- Set up item groups, items and BOMs
- Create working time templates, calendars, work center groups and work centers
- Set up operations and routes
- Describe the process of activating multisite functionality

At Course Completion
- After completing this course, students should understand:
- How to set up Work Centers and Routes and Operations.
- The Production Order concept and cycle and states.
- How to perform scheduling of Production Orders.
- How to End Production Orders.
- Which options you have for changing your setup using the different parameters.
- Which reporting and Inquiries options you have.
- The use of Inventory Dimensions in the production environment.
- How to introduce the use of subcontractors to the Microsoft Dynamics AX Production module.
- Some of the advanced uses of Production Scheduling in Microsoft Dynamics AX.
- How to account for scrap and waste in production orders.
- How the general ledger transactions that are posted as production orders are processed.
- Various types of manufacturing environments and strategies for implementing Microsoft Dynamics AX in those environments.