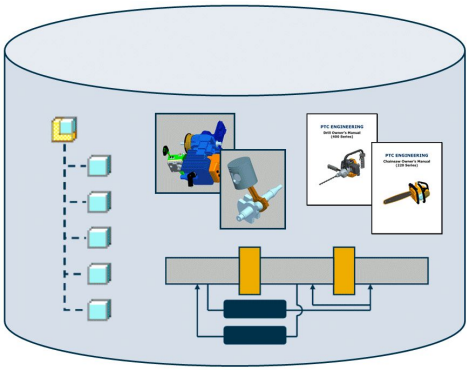
PTC® University

Introduction to PTC Windchill MPMLink 11.0

Overview

Course Code	TRN-4754-T
Course Length	16 Hours



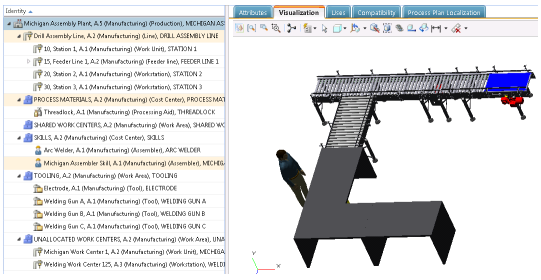
In this course, you will learn how to complete basic Windchill MPMLink functions. You will learn about MPMLink in the context of Manufacturing Process Management (MPM). You will also learn how to access and navigate the MPMLink environment, manage information, use MPMLink's visualization tools, and manage manufacturing changes attributed to product development. Other topics include how to use MPMLink to transform eBOMs to one or more mBOMs, and how to create process plans that consume the mBOM.

At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. At the end of the course, you will complete a course assessment in PTC University Proficiency intended to evaluate your understanding of the course as a whole.

This course has been developed using Windchill 11.0 M010.

Course Objectives

- Navigate the MPMLink environment
- Examine MPMLink utilities
- Transform an eBOM into an mBOM
- Create a process plan and associate it to the mBOM
- Create operations and allocate parts to them from the mBOM
- Allocate resources to the operations
- Use manufacturing standards in the operations
- Create illustrations and annotations for the operations
- View the production work instructions
- Create a time and cost roll-up
- Release process plans
- Change management overview



Prerequisites

- Introduction to Windchill PDMLink 11.0 for Heavy Users

Audience

- This course is intended for manufacturing engineers and manufacturing personnel that develop the mBOM or process plans including NC programmers, tooling designers, quality engineers, and production personnel. People in related roles will also benefit from taking this course.

Agenda

Day 1

Module	1	Introduction to MPM and Windchill MPMLink
Module	2	Introduction to the Windchill MPMLink Environment
Module	3	MPMLink BOM Translation Tools and Concepts
Module	4	Transforming eBOM to mBOM
Module	5	Introduction to Manufacturing Resources and Manufacturing Standards

Day 2

Module	6	Creating the Process Plan
Module	7	Allocating Objects to a Process Plan
Module	8	Refining the Process Plan
Module	9	Finalizing the Process Plan
Module	10	MPMLink Change Management

Course Content

Module 1. Introduction to MPM and Windchill MPMLink

i. Manufacturing Process Management Overview
ii. Manufacturing Process Management Flow
iii. Manufacturing Process Management Roles
iv. MPM Challenges and MPMLink
v. Concurrent Product and Process Development

Module 2. Introduction to the Windchill MPMLink Environment

i. Windchill MPMLink Environment
ii. Windchill MPMLink Architecture
iii. Windchill MPMLink Object Types
iv. MPMLink Object Capabilities - Change and Configuration Management
v. MPMLink Object Capabilities - Life Cycle and Configuration Management
vi. MPMLink Object Capabilities - Container and Access Control
vii. Windchill MPMLink Product Structure Modeling
viii. Windchill MPMLink Data Structure
ix. The Windchill MPMLink Utilities
x. Manufacturing Associative Part Structure Browser (MAPSB)
xi. Accessing the MAPSB Browser
xii. The Manufacturing Resource Browser
xiii. The Process Plan Browser
xiv. MPMLink Explorers
xv. The Manufacturing Standards Explorer
xvi. The Manufacturing Gantt Explorer
xvii. MPMLink Preferences

Module 3. MPMLink BOM Translation Tools and Concepts

i. MPMLink eBOM to mBOM
ii. Understanding the mBOM
iii. BOM Transformations and Challenges
iv. Understanding Views
v. Manufacturing Associative Part Structure Browser
vi. Manufacturing Associative Part Structure Browser Filters and Preferences
vii. Manufacturing Associative Part Structure Task Tabs
viii. Manufacturing Associative Part Structure Browser Vertical Toolbar
ix. Equivalent Link
x. Equivalent Link Example
xi. Equivalent Link Context Example
xii. Equivalent Link Features - View Network

xiii. Equivalent Link Features - Iterating Parts with Links
xiv. Equivalent Link Features - Updating Links
xv. Equivalent Link Features - Revising a Downstream Part
xvi. Equivalent Link Features - History
xvii. Equivalent Link Additional Features
xviii. MAPSB Equivalent Tabs
xix. Reference Link
xx. Equivalent Occurrence Link
xxi. Status Indicator Values
xxii. View MPMLink Objects in the Visualization Panel
xxiii. View MPMLink Objects in Creo View Explorer

Module 4. Transforming eBOM to mBOM

i. Associative eBOM-mBOM Best Practice
ii. Associative eBOM-mBOM Practice Overview
iii. Analyzing eBOM
iv. Examining the Product Structure in Windchill
v. Comparing Parts and Associated CAD Documents
vi. Viewing in Manufacturing Associative Part Structure Browser
vii. Visualization Tab in MAPSB
viii. Viewing eBOM Using Creo View
ix. Analyzing eBOM Using Creo View
x. Identifying an Entire eBOM Assembly
xi. Restructuring into mBOM
xii. Highlight and Review Parts in MAPSB
xiii. Creating an Equivalent Manufacturing Assembly
xiv. Creating a New Downstream Branch
xv. Creating a New Downstream Part
xvi. Viewing a Downstream Equivalent Assembly
xvii. Adding Manufacturing Parts in mBOM
xviii. Inserting New Parts in mBOM
xix. Copying and Pasting from eBOM to mBOM
xx. The Paste Option
xxi. Pasting as New Branch
xxii. Pasting as New Part
xxiii. Viewing Partial mBOM in Visualization Tab
xxiv. Viewing Consumption Status
xxv. Viewing mBOM in Creo View
xxvi. Setting Path Filters
xxvii. Splitting BOM Quantities
xxviii. Adding Equivalence Links

xxix. Cut and Paste Feature
xxx. Replace Feature
xxxi. Duplicate Feature
xxxii. Synchronizing Structure Associativity
xxxiii. Alternate BOMs and BOM Types
xxxiv. Creating Alternate BOMs
xxxv. Viewing Alternate BOMs
xxxvi. Enterprise Data Management in mBOMs
xxxvii. Identifying Discrepancies in BOMs
xxxviii. Updating and Maintaining mBOM
xxxix. Reviewing Equivalence Status Indicators
xl. Reviewing Equivalence Links
xli. Analyzing Discrepancies
xlii. Updating Equivalence Links
xliii. Incorporating Updates from eBOM
xliv. Ensuring BOM Conformity
xlv. Highlighting Discrepant Parts in eBOM
xlvi. Copying and Pasting Discrepant Parts to mBOM
xlvii. Releasing to Production
xlviii. Checking in the mBOM
xlix. Approving mBOM using a Promotion Request
l. Releasing mBOM
li. Releasing mBOM to ERP Systems
lii. Associative eBOM-mBOM Productivity Tips

Module 5. Introduction to Manufacturing Resources and Manufacturing Standards

i. MPMLink Manufacturing Resources and Standards
ii. Manufacturing Resource Types
iii. Manufacturing Resource Type - Plant
iv. Manufacturing Resource Type - Resource Group
v. Manufacturing Resource Type - Work Center
vi. Manufacturing Resource Type - Tooling
vii. Manufacturing Resource Type - Process Material
viii. Manufacturing Resource Type - Skill
ix. Understanding Compatibility Links
x. Manufacturing Resource Equivalent Parts
xi. Manufacturing Resource Browser
xii. Building Resource Hierarchies
xiii. Creating a New Resource
xiv. Inserting Resources into Resource Hierarchies
xv. Locating and Using Manufacturing Resources

xvi. Visualizing Manufacturing Resources
xvii. Manufacturing Resources and Creo View
xviii. Manufacturing Standard Types
xix. Manufacturing Standard Types - Manufacturing Standard Group
xx. Manufacturing Standard Types - Manufacturing Capability
xxi. Compatibility Links for Manufacturing Capabilities
xxii. Manufacturing Standards Explorer
xxiii. Locating and Using Manufacturing Standards

Module 6. Creating the Process Plan

i. MPMLink Process Plans
ii. MPMLink Support of Design Variation Management
iii. Assigned Item Choices and Variants
iv. Understanding Operations
v. Understanding Sequences
vi. Understanding Constraints
vii. Standard Procedures
viii. Plant Associations
ix. Multiple Component Process Plans
x. Process Plan Browser
xi. Process Plan Browser Preferences
xii. The Process Plan Browser Command Ribbon
xiii. The Process Plan Browser Panes
xiv. Process Plan Creation
xv. Process Plan Part Association
xvi. Inserting Operations into a Process Plan
xvii. Process Plan Sequence Creation
xviii. Renaming Operations
xix. Duplication of Operations
xx. Inserting Operations from Manufacturing Capabilities

Module 7. Allocating Objects to a Process Plan

i. Understanding Part Allocation
ii. Part Allocation Types
iii. Part Allocation Methods
iv. Part Allocation Status
v. Part Allocation Inconsistency Report
vi. Manufacturing Resource Allocation
vii. Automatic Resource Allocation
viii. Automatic Resource Allocation - Select Compatibles

ix. Automatic Resource Allocation - Not Recommended
x. Automatic Resource Allocation - Forbidden
xi. Compatibility Mechanism
xii. Capability Association
xiii. Setting Constraints
xiv. Illustrations for Operations
xv. Creating Illustrations in Playback Action Mode
xvi. Creating Illustrations Using the Operation Illustration Editor
xvii. Additional Information and Recommendations for Allocating Objects to a Process Plan

Module 8. Refining the Process Plan

i. Completing the Process Plan
ii. Operation Attributes
iii. Understanding Control Characteristics
iv. Work Center Attributes
v. Formulas and Formula Sets
vi. Work Center Formula Association
vii. Operation Formula Association
viii. Understanding the Work Instruction
ix. Work Instruction Fields
x. Work Instructions - Sequence and Sub-Operation
xi. Work Instructions - Referenced Standard Procedure
xii. Work Instructions - Launching Creo View

Module 9. Finalizing the Process Plan

i. Finalizing Process Plans
ii. Editing Individual Operations
iii. Updating Illustrations Using the Operation Illustration Editor
iv. Part Allocation Appearance
v. Associating Documents to Operations
vi. Checking In the Process Plan and Operations

Module 10. MPMLink Change Management

i. Change Management Overview
ii. Change Object Relationships
iii. Change Initiated by Design Engineering
iv. Change Initiated by Manufacturing
v. Assessment of Change Impact with MPMLink
vi. MPMLink Change Indicators
vii. Understanding MPMLink Effectivity

viii. Initiating the Release Process
ix. Completing a Change Notice Implementation Task
x. Creating a Promotion Request