C3P 9.1

Teamcenter for CAD Authors

Course Code	C3P20470
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Teamcenter Engineering para Autores de CAD </ strong> enseña a los estudiantes cómo crear, organizar e intercambiar datos de productos dentro del entorno de Ford SE R1. Los estudiantes aprenderán la interfaz de usuario, la creación y uso de objetos, conceptos básicos de la estructura del producto, conceptos precisos e imprecisos, reglas y variantes de revisión y funcionalidad del espectador. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<P> Diseñadores CAD </ p>

PREREQUISITES

Required courses:
 • (None)

COURSE TOPICS

• Locating Production Data
• Understanding Teamcenter Objects
• Using Change Management
• Introduction to CDV (Configured Digital Vehicle)
• Creating and Updating Product Structure
• Viewing Product Data

PROVIDED COURSE MATERIAL

None

Course Description

Femap 11.3

Femap 101

Course Code	FEMAP101
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Femap 101** course provides the engineer who is new to Femap with a substantial introduction to the software, its structure, capabilities, and how to take advantage of its efficiency and strengths. For the engineer who already is using Femap, this course will fill in the grey areas, provide important time-saving knowledge, and guide you on their way to becoming a Femap expert.

WHO SHOULD ATTEND

Engineers and analysts who want to perform finite element analysis on single parts and/or multi-part assemblies

PREREQUISITES

Knowledge of the theory and principles of finite element analysis and structural engineering

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Femap functions and workflows
• The Femap user interface and on-line help
• Importing, creating and editing geometry for meshing
• Materials and properties
• Meshing creation and editing
• Loads and contraints
• Model display and organization
• Visualizing and documenting results
• Assembly modeling
• Specialized in-depth training

Course Description

Femap 11.4

Femap 101

Course Code	FEMAP101
User Level	Beginner
Language	Portuguese
Price	R$ 1.416,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Femap 101** course provides the engineer who is new to Femap with a substantial introduction to the software, its structure, capabilities, and how to take advantage of its efficiency and strengths. For the engineer who already is using Femap, this course will fill in the grey areas, provide important time-saving knowledge, and guide you on their way to becoming a Femap expert.

WHO SHOULD ATTEND

Engineers and analysts who want to perform finite element analysis on single parts and/or multi-part assemblies

PREREQUISITES

Knowledge of the theory and principles of finite element analysis and structural engineering

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Femap functions and workflows
• The Femap user interface and on-line help
• Importing, creating and editing geometry for meshing
• Materials and properties
• Meshing creation and editing
• Loads and contraints
• Model display and organization
• Visualizing and documenting results
• Assembly modeling
• Specialized in-depth training

Course Description

Femap 11.4

Femap 101

Course Code	FEMAP101
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Femap 101** course provides the engineer who is new to Femap with a substantial introduction to the software, its structure, capabilities, and how to take advantage of its efficiency and strengths. For the engineer who already is using Femap, this course will fill in the grey areas, provide important time-saving knowledge, and guide you on their way to becoming a Femap expert.

WHO SHOULD ATTEND	COURSE TOPICS

Engineers and analysts who want to perform finite element analysis on single parts and/or multi-part assemblies

- Overview of Femap functions and workflows
- The Femap user interface and on-line help
- Importing, creating and editing geometry for meshing
- Materials and properties
- Meshing creation and editing
- Loads and contraints
- Model display and organization
- Visualizing and documenting results
- Assembly modeling
- Specialized in-depth training

PREREQUISITES

Knowledge of the theory and principles of finite element analysis and structural engineering

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

Femap 12.0

Femap 101

Course Code	FEMAP101
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Femap 101** course provides the engineer who is new to Femap with a substantial introduction to the software, its structure, capabilities, and how to take advantage of its efficiency and strengths. For the engineer who already is using Femap, this course will fill in the grey areas, provide important time-saving knowledge, and guide you on their way to becoming a Femap expert.

WHO SHOULD ATTEND

Engineers and analysts who want to perform finite element analysis on single parts and/or multi-part assemblies

PREREQUISITES

Knowledge of the theory and principles of finite element analysis and structural engineering

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Femap functions and workflows
• The Femap user interface and on-line help
• Importing, creating and editing geometry for meshing
• Materials and properties
• Meshing creation and editing
• Loads and contraints
• Model display and organization
• Visualizing and documenting results
• Assembly modeling
• Specialized in-depth training

Course Description

Femap 11.4

FEMAP Thermal and Flow Analysis (G2H)

Course Code	FEMAP110-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href=""http://training.plm.automation.siemens.com/courses/guarantee.cfm"">Here for more information about G2H
courses.</p>

<p>The FEMAP110 Thermal and Flow Analysis course provides students with comprehensive instruction in
how to model heat transfer and fluid flow problems using Femap TMG Thermal and Flow. Participants will learn the skills
necessary to carry out sophisticated thermal and CFD analysis quickly and easily, including geometry construction and
manipulation, meshing, fluid flow and heat transfer modeling, boundary condition application, solution setup, post-processing and
model validation. The course deals with both theoretical and practical aspects of how the software handles fluid flow and heat

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Design engineers and analysts who want to learn how
to model heat transfer and fluid flow in Femap models.

PREREQUISITES

Any knowledge of Femap will help, especially meshing
and creating/manipulating element groups.

COURSE TOPICS

• Create fluid volumes
• Mesh and set material properties
• Understand heat transfer, thermal couplings, and radiation
concepts
• Understand computational fluid dynamics concepts
• Set thermal and flow initial and boundary conditions
• Solve and post process thermal and flow solutions

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Femap 11.4.2 required.

Course Description

Capital 2010.2

Capital Engineer 1

Course Code	MG207894-US
User Level	All
Language	English
Price	$4,900.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create components, Create and maintain Component Codes, Create customer and supplier information, Create and maintain library components, Create Harness Designs using Designer, Create graphical representation of harness designs, Component handling, Design processing and calculations, Create Harness Designs using Engineer, Form-based harness entry, Harness processing and calculations, Create several design reports: BOM, Wire Cutting, Wire from/to, Create design changes, Compare DesignsHands-on labs

WHO SHOULD ATTEND	COURSE TOPICS

Who should attend: Not Available

Course Topics:

Key topics

- Component Creation
- Creation of a harness in Designer and Engineer
- Calculations and analysis of harness log files
- Creation of design changes
- Comparison of designs

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2010.2

Capital Engineer 1

Course Code	MG207894-US
User Level	All
Language	English
Price	$3,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create components, Create and maintain Component Codes, Create customer and supplier information, Create and maintain library components, Create Harness Designs using Designer, Create graphical representation of harness designs, Component handling, Design processing and calculations, Create Harness Designs using Engineer, Form-based harness entry, Harness processing and calculations, Create several design reports: BOM, Wire Cutting, Wire from/to, Create design changes, Compare DesignsHands-on labs

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics
- Component Creation
- Creation of a harness in Designer and Engineer
- Calculations and analysis of harness log files
- Creation of design changes
- Comparison of designs

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2009.1

Capital Engineer 2

Course Code	MG207896-US
User Level	All
Language	English
Price	$4,900.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create design symbols, Use Nested Dimensions, Set up and run job control queues

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	**Key topics**

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

Key topics
• Use of Nested Dimensions
• Creation of Designer Symbols
• Creation of job control queues
• Handling complex multicores

Course Description

Capital 2009.1

Capital Engineer 2

Course Code	MG207896-US
User Level	All
Language	English
Price	$3,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create design symbols, Use Nested Dimensions, Set up and run job control queues

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	**Key topics**
PREREQUISITES	• Use of Nested Dimensions
	• Creation of Designer Symbols
Not Available	• Creation of job control queues
PROVIDED COURSE MATERIAL	• Handling complex multicores
Not Available	

Course Description

Capital 2010.2

Capital Material Costing

Course Code	MG207898-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to
Create currency codes and exchange rates, Associate costs to components, Run material costing calculations and create reports

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

- Creation of Currency codes
- Calculation of material costing on a per harness basis
- Creation of material costing reports

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2010.2

Capital Material Costing

Course Code	MG207898-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to
Create currency codes and exchange rates, Associate costs to components, Run material costing calculations and create reports

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

- Creation of Currency codes
- Calculation of material costing on a per harness basis
- Creation of material costing reports

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2010.2

Capital Labor Costing

Course Code	MG207900-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create Labor Costing Standards, Associate labor costs to labor operations, Create detailed formulae for labor costing, Perform labor calculations, Create Labor cost reports

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics
- Creation of labor standards
- Calculation of labor costing on a per harness basis
- Creation of labor costing Reports

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2010.2

Capital Labor Costing

Course Code	MG207900-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to
Create Labor Costing Standards, Associate labor costs to labor operations, Create detailed formulae for labor costing, Perform labor calculations, Create Labor cost reports

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Key topics
- Creation of labor standards
- Calculation of labor costing on a per harness basis
- Creation of labor costing Reports

Course Description

Capital 2014.1

Capital Harness Classic

Course Code	MG207910-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Capital Harness Classic is a fully featured harness design, formboard and engineering tool with many powerful features built on a traditional 2D CAD geometry interface. The predecessor to Capital HarnessXC, Capital Harness Classic is used by most major harness manufacturers worldwide.

Capital Harness Classic is designed to speed the harness layout and engineering process by automating many of the tasks that are typically performed by the harness engineer, including part selection, decomposition of 150% harnesses into buildable harnesses, and creation of manufacturing reports.

WHO SHOULD ATTEND

Capital Harness Classic is a fully featured harness design, formboard and engineering tool with many powerful features built on a traditional 2D CAD geometry interface. The predecessor to Capital HarnessXC, Capital Harness Classic is used by most major harness manufacturers worldwide.

Capital Harness Classic is designed to speed the harness layout and engineering process by automating many of the tasks that are typically performed by the harness engineer, including part selection, decomposition of 150% harnesses into buildable harnesses, and creation of manufacturing reports.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

FEATURES AND BENEFITS
 • Fully featured drawing environment with intelligent symbols and functions that automate many tasks
 • Automated part selection/configuration of connectors, terminals, tapes, etc – driven by user-configurable algorithms that validate the design
 • Provides composite 150% design and derivate/variant decomposition facilities that reduce workload and cuts time.
 • Automated Report generation cuts time, improves quality
 • Embedded design rule checking and error reporting ensure that designs are correct-by-construction, eliminating costly errors before production
 • Audit trail and design comparison facilities simplify change management and change tracking
 • Powerful 3D CAD integration and change management facilities support concurrent design iterations

Course Description

Capital 2014.1

Capital Harness Classic

Course Code	MG207910-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

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Capital Harness Classic is designed to speed the harness layout and engineering process by automating many of the tasks that are typically performed by the harness engineer, including part selection, decomposition of 150% harnesses into buildable harnesses, and creation of manufacturing reports.

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Capital Harness Classic is designed to speed the harness layout and engineering process by automating many of the tasks that are typically performed by the harness engineer, including part selection, decomposition of 150% harnesses into buildable harnesses, and creation of manufacturing reports.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

FEATURES AND BENEFITS
 • Fully featured drawing environment with intelligent symbols and functions that automate many tasks
 • Automated part selection/configuration of connectors, terminals, tapes, etc – driven by user-configurable algorithms that validate the design
 • Provides composite 150% design and derivate/variant decomposition facilities that reduce workload and cuts time.
 • Automated Report generation cuts time, improves quality
 • Embedded design rule checking and error reporting ensure that designs are correct-by-construction, eliminating costly errors before production
 • Audit trail and design comparison facilities simplify change management and change tracking
 • Powerful 3D CAD integration and change management facilities support concurrent design iterations

Course Description

Capital 2013.1

Capital Systems Administration

Course Code	MG212185-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Install a Progress database for Capital Harness ClassicCreate the Capital Harness Classic server and client setupsCreate UsersCopy Progress databasesImport and Export data

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	You will learn how to

PREREQUISITES

Not Available

Install a Progress database for Capital Harness Classic Create the Capital Harness Classic server and client setups Create Users Copy Progress databases Import and Export data

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2013.1

Capital Systems Administration

Course Code	MG212185-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to
Install a Progress database for Capital Harness ClassicCreate the Capital Harness Classic server and client setupsCreate UsersCopy Progress databasesImport and Export data

WHO SHOULD ATTEND	**COURSE TOPICS**
Not Available	You will learn how to
PREREQUISITES	Install a Progress database for Capital Harness Classic Create the Capital Harness Classic server and client setups Create Users Copy Progress databases Import and Export data
Not Available	
PROVIDED COURSE MATERIAL	
Not Available	

Course Description

Capital 2016.1

Capital Integrator Generative

Course Code	MG224836-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Format the Topology Layout, Partition harnesses, Manually manipulate designs, Create and apply rules and design constraints, Assign options and variants, and synthesize wire according to the topological definition, rules, and options assigned.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES	• Creation and manipulation of a harness topology

Not Available

- Creation and manipulation of a harness topology
- Placement of devices in slots
- Slot manipulation
- Wire synthesisManagement of rules and wire synthesis
- Connector manipulationAutomated wiring designs

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Integrator Generative

Course Code	MG224836-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Format the Topology Layout, Partition harnesses, Manually manipulate designs, Create and apply rules and design constraints, Assign options and variants, and synthesize wire according to the topological definition, rules, and options assigned.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics
 • Creation and manipulation of a harness topology
 • Placement of devices in slots

PREREQUISITES

Not Available

 • Slot manipulation
 • Wire synthesisManagement of rules and wire synthesis
 • Connector manipulationAutomated wiring designs

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Component and Symbol Mgmt

Course Code	MG224838-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to
Create components, Copy component,sDelete components, Create Component Codes.

WHO SHOULD ATTEND	**COURSE TOPICS**

You will learn how to
Create components, Copy component,s Delete components, Create Component Codes.

Key topics
 • Component Creation

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Component and Symbol Mgmt

Course Code	MG224838-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create components, Copy component,sDelete components, Create Component Codes.

WHO SHOULD ATTEND	**COURSE TOPICS**

You will learn how to
Create components, Copy component,s Delete
components, Create Component Codes.

Key topics
 • Component Creation

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Logic Interactive

Course Code	MG224840-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Wire Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Who should attend

Not Available

Key topics

PREREQUISITES

- Project Creation
- Creating preferences

Not Available

- Creating complex symbols
- Creating wiring schematics

PROVIDED COURSE MATERIAL

- Assigning properties and options to objects in diagrams
- Component maintenance

Not Available

- Creating reports

Course Description

Capital 2016.1

Capital Logic Interactive

Course Code	MG224840-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Wire Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

Not Available

- Project Creation
- Creating preferences
- Creating complex symbols
- Creating wiring schematics
- Assigning properties and options to objects in diagrams
- Component maintenance
- Creating reports

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Logic Generative

Course Code	MG224852-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Functional Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Create library components, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

- Project Creation
- Creation of preferences

Not Available

- reating complex symbols
- Creating functional schematics

PROVIDED COURSE MATERIAL

- Assigning properties and options to objects in diagrams
- Component maintenance

Not Available

- Creating reports

Course Description

Capital 2016.1

Capital Logic Generative

Course Code	MG224852-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Functional Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Create library components, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Who should attend

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Key topics
• Project Creation
• Creation of preferences
• reating complex symbols
• Creating functional schematics
• Assigning properties and options to objects in diagrams
• Component maintenance
• Creating reports

Course Description

Capital 2011.1

Capital Analysis Modeling

Course Code	MG225693-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create analysis behavior models, Create dependency-based models, defining structure, interface, and behaviors, Create State-based models, defining structure, interfaces, and behaviors, Encrypt defined models with key codes, Create model templates, Create embedded models, Apply analysis models to designs and run simulations

WHO SHOULD ATTEND	**COURSE TOPICS**

Not Available

Key Topics

Structure development

Model behavior definition

State- versus dependency-based models

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2011.1

Capital Analysis Modeling

Course Code	MG225693-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to
Create analysis behavior models, Create dependency-based models, defining structure, interface, and behaviors, Create State-based models, defining structure, interfaces, and behaviors, Encrypt defined models with key codes, Create model templates, Create embedded models, Apply analysis models to designs and run simulations

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key Topics
Structure development
Model behavior definition
State- versus dependency-based models

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2011.1

Capital Analysis Core

Course Code	MG225694-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Understand the Capital Analysis Product range, Prepare an electrical design for analysis, Run basic simulations on a design, Set up and run FMEASet up and run SCA, Set up and run Stress Analysis, Set up and use the Script AnalyzerRun transient analysis.

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	**Key Topics**

PREREQUISITES
Not Available

PROVIDED COURSE MATERIAL
Not Available

Key Topics
• Capital Analysis Product Family
• Capital Analysis Flow
• Preparing for Simulation
• Using the Simulation Tool
• FMEA Generation and Exploration
• SCA Generation and Exploration
• Stress Analysis Report Generation and Exploration
• Creating and Running Scripts
• Running Analysis Tools in Transient Mode

Course Description

Capital 2011.1

Capital Analysis Core

Course Code	MG225694-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Understand the Capital Analysis Product range, Prepare an electrical design for analysis, Run basic simulations on a design, Set up and run FMEASet up and run SCA, Set up and run Stress Analysis, Set up and use the Script AnalyzerRun transient analysis.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key Topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

- Capital Analysis Product Family
- Capital Analysis Flow
- Preparing for Simulation
- Using the Simulation Tool
- FMEA Generation and Exploration
- SCA Generation and Exploration
- Stress Analysis Report Generation and Exploration
- Creating and Running Scripts
- Running Analysis Tools in Transient Mode

Course Description

Capital 2016.1

Capital Harness XC

Course Code	MG231918-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Summary

The Capital â HarnessXCä course introduces users to the basic and more complex functionality within the Capital HarnessXC product. This tool provides a seamless transition of data from Capital Logic or Capital Integrator into Capital HarnessXC, and demonstrates how to pull mechanical data from third-party MCAD tools into Capital HarnessXC. The course also demonstrates how to create and maintain individual design objects (e.g., wires, multicores, clips, connectors, etc.) within the harness diagrams.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

 • Creation of a harness, showing how all elements can be added to it
 • Learning about the library's principal role in building a viable harness
 • Creation of a composite harness and derivatives from it
 • Running DRCs to check for common and uncommon design mistakes
 • Processing a harness design to perform part selection and automatic splice placement
 • Running reports and printing your designs
 • Management of change for any harness re-work via Engineering Change Orders (ECOs)Prerequisites

Course Description

Capital 2016.1

Capital Harness XC

Course Code	MG231918-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Summary
The Capital â HarnessXCä course introduces users to the basic and more complex functionality within the Capital HarnessXC product. This tool provides a seamless transition of data from Capital Logic or Capital Integrator into Capital HarnessXC, and demonstrates how to pull mechanical data from third-party MCAD tools into Capital HarnessXC. The course also demonstrates how to create and maintain individual design objects (e.g., wires, multicores, clips, connectors, etc.) within the harness diagrams.

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	• Creation of a harness, showing how all elements can be added to it

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

 • Creation of a harness, showing how all elements can be added to it
 • Learning about the library's principal role in building a viable harness
 • Creation of a composite harness and derivatives from it
 • Running DRCs to check for common and uncommon design mistakes
 • Processing a harness design to perform part selection and automatic splice placement
 • Running reports and printing your designs
 • Management of change for any harness re-work via Engineering Change Orders (ECOs)Prerequisites

Course Description

Capital 2016.1

Capital Logic Aero

Course Code	MG238628-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to
Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Functional Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Create library components, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics
- Project Creation

PREREQUISITES

Not Available

- Creation of preferences
- Creating functional schematics
- Assigning properties and options to objects in diagrams

PROVIDED COURSE MATERIAL

- Component maintenance
- Creating reports

Not Available

Course Description

Capital 2016.1

Capital Logic Aero

Course Code	MG238628-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to
Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Functional Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Create library components, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

- Project Creation
- Creation of preferences
- Creating functional schematics
- Assigning properties and options to objects in diagrams
- Component maintenance
- Creating reports

Course Description

Capital 2016.1

Capital FormBoard XC

Course Code	MG239252-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create a fully-scaled FormBoard drawing, Manipulate drawings to insert bends and rotate bundles, Create and implement plan and end view symbols on the form board drawing, Implement form board styles within the XC Style manager

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

Not Available

- Basic Capital Harness XC FormBoard concepts
- Form Board design creation
- Form Board symbol creation
- Form Board styling implementation

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital FormBoard XC

Course Code	MG239252-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create a fully-scaled FormBoard drawing, Manipulate drawings to insert bends and rotate bundles, Create and implement plan and end view symbols on the form board drawing, Implement form board styles within the XC Style manager

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics
- Basic Capital Harness XC FormBoard concepts

PREREQUISITES

- Form Board design creation

Not Available

- Form Board symbol creation
- Form Board styling implementation

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 1.0
MicReD Training

Course Code	MG240170-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 day
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Thermally test, measure and characterize semiconductor devices (including LEDs), TIMs and even complete electronic systems.

WHO SHOULD ATTEND	COURSE TOPICS
Thermally test, measure and characterize semiconductor devices (including LEDs), TIMs and even complete electronic systems.	Thermally test, measure and characterize semiconductor devices (including LEDs), TIMs and even complete electronic systems.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 1.0

MicReD Training

Course Code	MG240170-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 day
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Thermally test, measure and characterize semiconductor devices (including LEDs), TIMs and even complete electronic systems.

WHO SHOULD ATTEND	COURSE TOPICS
Thermally test, measure and characterize semiconductor devices (including LEDs), TIMs and even complete electronic systems.	Thermally test, measure and characterize semiconductor devices (including LEDs), TIMs and even complete electronic systems.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

VeSys 2.0 Design

Course Code	MG240188-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenance Creation and maintenance of a schematic diagram Component sharing Simulation of schematics

WHO SHOULD ATTEND	COURSE TOPICS

All

Key topics
Component data input and maintenanceCreation and maintenance of a schematic diagramComponent sharingSimulation of schematics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

VeSys 2.0 Design

Course Code	MG240188-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenance Creation and maintenance of a schematic diagram Component sharing Simulation of schematics

WHO SHOULD ATTEND	COURSE TOPICS

All

Key topics
Component data input and maintenanceCreation and maintenance of a schematic diagramComponent sharingSimulation of schematics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

VeSys 2.0 Harness

Course Code	MG240189-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

WHO SHOULD ATTEND	COURSE TOPICS

All

Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

VeSys 2.0 Harness

Course Code	MG240189-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

WHO SHOULD ATTEND	COURSE TOPICS
All	Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

PREREQUISITES
Not Available

PROVIDED COURSE MATERIAL
Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for Creo

Course Code	MG240842-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for Creo. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for Creo and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to
Fundamental operation and functionality of the FloEFD for Creo software Overall flow and thermal analysis creation methodology Meshing techniquesDesign variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to
 • Fundamental operation and functionality of the FloEFD for Creo software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for Creo

Course Code	MG240842-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for Creo. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for Creo and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to
Fundamental operation and functionality of the FloEFD for Creo software Overall flow and thermal analysis creation methodology Meshing techniquesDesign variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to
 • Fundamental operation and functionality of the FloEFD for Creo software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.0
FloTHERM

Course Code	MG240843-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

This course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.Agenda

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

This course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.Agenda

Course Description

Mechanical Analysis 12.0

FloTHERM

Course Code	MG240843-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

This course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.Agenda

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	This course is divided into two parts: The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.Agenda

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.0

FloVENT Introduction

Course Code	MG240844-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

WHO SHOULD ATTEND	COURSE TOPICS

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models. The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

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The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.0
FloVENT Introduction

Course Code	MG240844-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

WHO SHOULD ATTEND	COURSE TOPICS

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models. The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 9.0

FloTHERM PACK

Course Code	MG241609-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights

The main goals of the course are to make the student familiar with the operation and functionality of FloTHERM PACK, to provide a good understanding of different IC packaging families, characterization techniques, and the use of these representations in their FloTHERM thermal analysis models.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

 • Introduction to FloTHERM PACK
 • Modeling Traditional Package Families
 • Modeling Advanced Package Families
 • JEDEC Test Environments and Modeling Package Environment
 • Compact Modeling of IC packages and Introduction to T3ster

Course Description

Mechanical Analysis 9.0

FloTHERM PACK

Course Code	MG241609-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights
The main goals of the course are to make the student familiar with the operation and functionality of FloTHERM PACK, to provide a good understanding of different IC packaging families, characterization techniques, and the use of these representations in their FloTHERM thermal analysis models.

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	• Introduction to FloTHERM PACK

PREREQUISITES	
Not Available	• Modeling Traditional Package Families

• Modeling Advanced Package Families
• JEDEC Test Environments and Modeling Package Environment

PROVIDED COURSE MATERIAL	
Not Available	• Compact Modeling of IC packages and Introduction to T3ster

Course Description

Mechanical Analysis 16.2

FloEFD

Course Code	MG241961-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD. The combination of these different formats is designed to show the student the range of functionality available in FloEFD and how they can utilize them through appropriate tutorials covering a wide range of different application

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to:

Brief introduction to solid modeling using Solidworks Fundamental operation and functionality of the FloEFD software Overall flow and thermal analysis creation methodology Meshing techniques Design variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to:

 • Brief introduction to solid modeling using
 • SolidworksFundamental operation and functionality of the
 • FloEFD softwareOverall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD

Course Code	MG241961-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD. The combination of these different formats is designed to show the student the range of functionality available in FloEFD and how they can utilize them through appropriate tutorials covering a wide range of different application

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to:

Brief introduction to solid modeling using Solidworks Fundamental operation and functionality of the FloEFD software Overall flow and thermal analysis creation methodology Meshing techniques Design variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to:

 • Brief introduction to solid modeling using
 • SolidworksFundamental operation and functionality of the
 • FloEFD softwareOverall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Mechanical Analysis 16.2

FloEFD for CATIA V5

Course Code	MG242346-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights
The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for CATIA V5. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for CATIA V5 and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to:
Fundamental operation and functionality of the FloEFD for CATIA V5 software
Overall flow and thermal analysis creation methodology
Meshing techniques
Design variants and parametric functionality
Pre- and post-processing tools Introduction to advanced topics

You will learn how to:
 • Fundamental operation and functionality of the FloEFD for CATIA V5 software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for CATIA V5

Course Code	MG242346-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for CATIA V5. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for CATIA V5 and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to:
Fundamental operation and functionality of the FloEFD for CATIA V5 software
Overall flow and thermal analysis creation methodology
Meshing techniques
Design variants and parametric functionality
Pre- and post-processing tools Introduction to advanced topics

You will learn how to:
 • Fundamental operation and functionality of the FloEFD for CATIA V5 software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

Capital Topology

Course Code	MG248670-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create a Topology Design, Associate wire diagrams to the topology design, Implement wire routing rules, Run design rule checks against the diagram to ensure design requirements have not been violated, Synch up topological information with harness drawings, Hands-on labs

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

Not Available

- Creation of a topology
- Routing of wires

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

Capital Topology

Course Code	MG248670-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create a Topology Design, Associate wire diagrams to the topology design, Implement wire routing rules, Run design rule checks against the diagram to ensure design requirements have not been violated, Synch up topological information with harness drawings, Hands-on labs

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

- Creation of a topology
- Routing of wires

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Component and Symbol Mgmt

Course Code	MG248886-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create components, Copy component,sDelete components, Create Component Codes.

WHO SHOULD ATTEND	COURSE TOPICS
You will learn how to Create components, Copy component,s Delete components, Create Component Codes.	**Key topics** • Component Creation

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Component and Symbol Mgmt

Course Code	MG248886-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to
Create components, Copy component,sDelete components, Create Component Codes.

WHO SHOULD ATTEND	COURSE TOPICS
You will learn how to Create components, Copy component,s Delete components, Create Component Codes.	**Key topics** • Component Creation

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Logic Generative

Course Code	MG248887-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Functional Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Create library components, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

- Project Creation
- Creation of preferences
- reating complex symbols
- Creating functional schematics
- Assigning properties and options to objects in diagrams
- Component maintenance
- Creating reports

Course Description

Capital Logic Generative

Course Code	MG248887-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

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WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

- Project Creation
- Creation of preferences

Not Available

- reating complex symbols
- Creating functional schematics

PROVIDED COURSE MATERIAL

- Assigning properties and options to objects in diagrams
- Component maintenance

Not Available

- Creating reports

Course Description

Capital 2016.1

Capital Logic Interactive

Course Code	MG248888-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Wire Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics
- Project Creation

PREREQUISITES

Not Available

- Creating preferences
- Creating complex symbols
- Creating wiring schematics

PROVIDED COURSE MATERIAL

Not Available

- Assigning properties and options to objects in diagrams
- Component maintenance
- Creating reports

Course Description

Capital 2016.1

Capital Logic Interactive

Course Code	MG248888-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create projects, Create and maintain design and diagram structure, Create Shared objects, Set object naming preferences, Set option definitions, Create revisions and build lists, Create Wire Diagrams, Handle shared objects in and across diagrams, Place conductors, Assign options and library parts, Compare designs, Report on designs created

WHO SHOULD ATTEND	COURSE TOPICS

Who should attend: Not Available

Key topics
- Project Creation
- Creating preferences
- Creating complex symbols
- Creating wiring schematics
- Assigning properties and options to objects in diagrams
- Component maintenance
- Creating reports

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

VeSys 2.0 Design

Course Code	MG248889-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenance Creation and maintenance of a schematic diagram Component sharing Simulation of schematics

WHO SHOULD ATTEND	COURSE TOPICS

All

Key topics
Component data input and maintenanceCreation and maintenance of a schematic diagramComponent sharingSimulation of schematics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

VeSys 2.0 Design

Course Code	MG248889-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenance Creation and maintenance of a schematic diagram Component sharing Simulation of schematics

WHO SHOULD ATTEND	COURSE TOPICS

All

Key topics
Component data input and maintenanceCreation and maintenance of a schematic diagramComponent sharingSimulation of schematics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2014.1

VeSys 2.0 Harness

Course Code	MG248890-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

WHO SHOULD ATTEND	COURSE TOPICS

All

Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

http://www.siemens.com/plm/get-training

Course Description

Capital 2014.1

VeSys 2.0 Harness

Course Code	MG248890-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

WHO SHOULD ATTEND	COURSE TOPICS

All

Key topics
Component data input and maintenanceHarness creationHarness processing/checkingHarness ReportsSynchronizing dataDesign change management

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.0

FloTHERM

Course Code	MG249687-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

This course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.Agenda

WHO SHOULD ATTEND	COURSE TOPICS
Not Available	This course is divided into two parts: The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.Agenda

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.0
FloTHERM

Course Code	MG249687-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

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WHO SHOULD ATTEND
Not Available

PREREQUISITES
Not Available

PROVIDED COURSE MATERIAL
Not Available

COURSE TOPICS

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The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.Agenda

Course Description

Capital 2013.1

Capital Harness MPM

Course Code	MG251527-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 day
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to

Create and edit a pattern, Interpret operation templates, Generate an SBOM, Interpret the results of the SBOM, Generate SBOM reports, Manipulate patterns to change the resultant SBOM

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to
Create and edit a pattern, Interpret operation templates, Generate an SBOM, Interpret the results of the SBOM, Generate SBOM reports, Manipulate patterns to change the resultant SBOM

• Creating a pattern
• Generating and SBOM on a simple harness
• Generating an SBOM on a more advanced harness
• Managing operation template parameters to reflect manufacturing conditions

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2013.1

Capital Harness MPM

Course Code	MG251527-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 day
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Create and edit a pattern, Interpret operation templates, Generate an SBOM, Interpret the results of the SBOM, Generate SBOM reports, Manipulate patterns to change the resultant SBOM

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to
Create and edit a pattern, Interpret operation templates, Generate an SBOM, Interpret the results of the SBOM, Generate SBOM reports, Manipulate patterns to change the resultant SBOM

• Creating a pattern
• Generating and SBOM on a simple harness
• Generating an SBOM on a more advanced harness
• Managing operation template parameters to reflect manufacturing conditions

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 8.0

FloMASTER New User

Course Code	MG251843-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

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PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 8.0

FloMASTER New User

Course Code	MG251843-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

WHO SHOULD ATTEND

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

COURSE TOPICS

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 1.0

FloMASTER Consulting

Course Code	MG251859-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

FloMASTER Consulting

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

FloMASTER Consulting

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD

Course Code	MG253705-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD. The combination of these different formats is designed to show the student the range of functionality available in FloEFD and how they can utilize them through appropriate tutorials covering a wide range of different application

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to:

Brief introduction to solid modeling using Solidworks Fundamental operation and functionality of the FloEFD software Overall flow and thermal analysis creation methodology Meshing techniques Design variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to:

 • Brief introduction to solid modeling using
 • SolidworksFundamental operation and functionality of the
 • FloEFD softwareOverall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD

Course Code	MG253705-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD. The combination of these different formats is designed to show the student the range of functionality available in FloEFD and how they can utilize them through appropriate tutorials covering a wide range of different application

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to:

Brief introduction to solid modeling using Solidworks Fundamental operation and functionality of the FloEFD software Overall flow and thermal analysis creation methodology Meshing techniques Design variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to:

 • Brief introduction to solid modeling using
 • SolidworksFundamental operation and functionality of the
 • FloEFD softwareOverall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 3.1

FloTHERM XT

Course Code	MG257256-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights
The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

You Will Learn How To
 • Create FloTHERM XT project and geometry.
 • Apply data to calculate conduction, convection and thermal radiation
 • Use FloTHERM XT smart parts and libraries to create easy geometry.
 • Generate thermal model of components: compact and detailed model of components
 • Use FloTHERM PACKGenerate thermal model of PCBs.
 • FloEDA Bridge.Integrate CAD dataIntegrate cooling Smartparts
 • Generate a mesh and solveUse Pre and Post-processing tools.

Course Description

Mechanical Analysis 3.1
FloTHERM XT

Course Code	MG257256-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights
The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

WHO SHOULD ATTEND	COURSE TOPICS

The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

You Will Learn How To
 • Create FloTHERM XT project and geometry.
 • Apply data to calculate conduction, convection and thermal radiation
 • Use FloTHERM XT smart parts and libraries to create easy geometry.
 • Generate thermal model of components: compact and detailed model of components
 • Use FloTHERM PACKGenerate thermal model of PCBs.
 • FloEDA Bridge.Integrate CAD dataIntegrate cooling Smartparts
 • Generate a mesh and solveUse Pre and Post-processing tools.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 3.1

FloTHERM XT

Course Code	MG258921-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights

The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

WHO SHOULD ATTEND	COURSE TOPICS

The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

You Will Learn How To
 • Create FloTHERM XT project and geometry.
 • Apply data to calculate conduction, convection and thermal radiation
 • Use FloTHERM XT smart parts and libraries to create easy geometry.
 • Generate thermal model of components: compact and detailed model of components
 • Use FloTHERM PACKGenerate thermal model of PCBs.
 • FloEDA Bridge.Integrate CAD dataIntegrate cooling Smartparts
 • Generate a mesh and solveUse Pre and Post-processing tools.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 3.1

FloTHERM XT

Course Code	MG258921-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights

The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

WHO SHOULD ATTEND	COURSE TOPICS

The course provides a detailed description of FloTHERM XT capabilities. The hands-on lab exercises then further reinforce the discussion topics under the guidance of our industry expert instructors. The combination of these different formats is designed to highlight the range of functionality available in FloTHERM XT.

You Will Learn How To

 • Create FloTHERM XT project and geometry.
 • Apply data to calculate conduction, convection and thermal radiation
 • Use FloTHERM XT smart parts and libraries to create easy geometry.
 • Generate thermal model of components: compact and detailed model of components
 • Use FloTHERM PACKGenerate thermal model of PCBs.
 • FloEDA Bridge.Integrate CAD dataIntegrate cooling Smartparts
 • Generate a mesh and solveUse Pre and Post-processing tools.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2013.1

Capital Publisher Aero

Course Code	MG259998-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Summary

The Capital Publisher Aero course was developed to equip the participant with the ability to generate service documentation based on predefined system diagrams.Hands-on lab exercises will reinforce lecture and discussion topics under the guidance of our industry expert instructors.

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

Throughout this course, extensive hands-on lab exercises provide you with practical experience using Capital Publisher software. Hands-on lab topics include:
 • Creation of a package
 • Creation of symbols to be used in the package
 • Embellishment of a publisher based style set
 • Configuration of a package generator

Course Description

Capital 2013.1

Capital Publisher Aero

Course Code	MG259998-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Summary

The Capital Publisher Aero course was developed to equip the participant with the ability to generate service documentation based on predefined system diagrams.Hands-on lab exercises will reinforce lecture and discussion topics under the guidance of our industry expert instructors.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

Throughout this course, extensive hands-on lab exercises provide you with practical experience using Capital Publisher software. Hands-on lab topics include:
 • Creation of a package
 • Creation of symbols to be used in the package
 • Embellishment of a publisher based style set
 • Configuration of a package generator

Course Description

Capital 2013.1

Capital Publisher Auto

Course Code	MG259999-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Summary

The Capital Publisher course was developed to equip the participant with the ability to generate service documentation.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

- Creation of a package
- Creation of symbols to be used in the package
- Embellishment of a publisher based style set
- Configuration of a package generator

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2013.1

Capital Publisher Auto

Course Code	MG259999-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	8 hours
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Summary

The Capital Publisher course was developed to equip the participant with the ability to generate service documentation.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

• Creation of a package
• Creation of symbols to be used in the package
• Embellishment of a publisher based style set

PREREQUISITES

• Configuration of a package generator

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2013.1

Capital Harness TVM

Course Code	MG260606-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Summary

The Capital Harness TVM course was developed to equip the participant with the ability to create harness tasks, component costs, build times and other measurements that make up an assembly process. This information is then used to automatically create cost results for a single of given set of harnessesHands-on lab exercises will reinforce lecture and discussion topics under the guidance of our industry expert instructors.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

• Creation of a task library
• Development of formula
• Management of patterns to incorporate new tasks and formula

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2013.1

Capital Harness TVM

Course Code	MG260606-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Summary
The Capital Harness TVM course was developed to equip the participant with the ability to create harness tasks, component costs, build times and other measurements that make up an assembly process. This information is then used to automatically create cost results for a single of given set of harnessesHands-on lab exercises will reinforce lecture and discussion topics under the guidance of our industry expert instructors.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Topics:
• Creation of a task library
• Development of formula
• Management of patterns to incorporate new tasks and formula

Course Description

Mechanical Analysis 8.0

FloMASTER New User

Course Code	MG263445-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS
This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.	This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 8.0

FloMASTER New User

Course Code	MG263445-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

WHO SHOULD ATTEND

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

COURSE TOPICS

This course is designed to provide new users of FloMASTER with a background sufficient for tackling a wide range of flow analysis problems in 1D. The main goals of the course are to make the student familiar with the operation and functionality of FloMASTER and to instill good engineering modeling practices.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 2.2
FloTHERM XT Advanced

Course Code	MG264185-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 day
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

WHO SHOULD ATTEND	**COURSE TOPICS**
The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.	The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 2.2

FloTHERM XT Advanced

Course Code	MG264185-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 day
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

WHO SHOULD ATTEND	COURSE TOPICS
The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.	The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Valor 10

Valor NPI for System Admins

Course Code	MG265688-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Overview

Following the Valor NPI for Users course, this course covers the Valor NPI operations for enhancing the Design for Manufacturing (DFM) analysis throughout the PCB design process. The main focus is the use of the Valor Parts Library (VPL) combined with Valor NPI to facilitate comprehensive assembly analysis. Rule file management, system installation and configuration options are included.The "Best Practices" process flow is followed to show the additional functionality of VPL with respect to high level DFM analysis. Explanations and examples of the assembly DFM results using VPL are given. Methods of system automation are explored.The aim of the course is to enable the user to be more proficient in the administration of Valor NPI systems together with a strong understanding of the DFM capabilities offered. Upon completion of the course the user can be considered an "Expert User".Detailed lab exercises will help reinforce what is discussed during the instructor led lecture. You Will Learn

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

You Will Learn
 • Understand the recommended process flows, use of
 • Design Centers and Design Process Wizard
 • Definitions of Valor NPI user roles
 • Configurations for ODB++ and BOM outputs from Expedition PCB
 • Engineering Rules File (ERF) Management
 • Valor Parts Library (VPL) introduction and process flow
 • Importing Bill of Materials using BOM Manager and applying VPL package models
 • Perform Assembly Merge of VPL loaded BOM
 • Run comprehensive assembly analysis and understand the results
 • Create rules by area and apply DFM rules
 • Methods of application automation
 • System configurations and installation options

Course Description

Valor 10

Valor NPI for System Admins

Course Code	MG265688-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Overview

Following the Valor NPI for Users course, this course covers the Valor NPI operations for enhancing the Design for Manufacturing (DFM) analysis throughout the PCB design process. The main focus is the use of the Valor Parts Library (VPL) combined with Valor NPI to facilitate comprehensive assembly analysis. Rule file management, system installation and configuration options are included.The "Best Practices" process flow is followed to show the additional functionality of VPL with respect to high level DFM analysis. Explanations and examples of the assembly DFM results using VPL are given. Methods of system automation are explored.The aim of the course is to enable the user to be more proficient in the administration of Valor NPI systems together with a strong understanding of the DFM capabilities offered. Upon completion of the course the user can be considered an "Expert User".Detailed lab exercises will help reinforce what is discussed during the instructor led lecture. You Will Learn

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

You Will Learn
 • Understand the recommended process flows, use of
 • Design Centers and Design Process Wizard
 • Definitions of Valor NPI user roles
 • Configurations for ODB++ and BOM outputs from Expedition PCB
 • Engineering Rules File (ERF) Management
 • Valor Parts Library (VPL) introduction and process flow
 • Importing Bill of Materials using BOM Manager and applying VPL package models
 • Perform Assembly Merge of VPL loaded BOM
 • Run comprehensive assembly analysis and understand the results
 • Create rules by area and apply DFM rules
 • Methods of application automation
 • System configurations and installation options

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Valor 10

Valor NPI for System Admins

Course Code	MG265689-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Overview

Following the Valor NPI for Users course, this course covers the Valor NPI operations for enhancing the Design for Manufacturing (DFM) analysis throughout the PCB design process. The main focus is the use of the Valor Parts Library (VPL) combined with Valor NPI to facilitate comprehensive assembly analysis. Rule file management, system installation and configuration options are included.The "Best Practices" process flow is followed to show the additional functionality of VPL with respect to high level DFM analysis. Explanations and examples of the assembly DFM results using VPL are given. Methods of system automation are explored.The aim of the course is to enable the user to be more proficient in the administration of Valor NPI systems together with a strong understanding of the DFM capabilities offered. Upon completion of the course the user can be considered an "Expert User".Detailed lab exercises will help reinforce what is discussed during the instructor led lecture. You Will Learn

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

You Will Learn
 • Understand the recommended process flows, use of
 • Design Centers and Design Process Wizard
 • Definitions of Valor NPI user roles
 • Configurations for ODB++ and BOM outputs from Expedition PCB
 • Engineering Rules File (ERF) Management
 • Valor Parts Library (VPL) introduction and process flow
 • Importing Bill of Materials using BOM Manager and applying VPL package models
 • Perform Assembly Merge of VPL loaded BOM
 • Run comprehensive assembly analysis and understand the results
 • Create rules by area and apply DFM rules
 • Methods of application automation
 • System configurations and installation options

Course Description

Valor 10

Valor NPI for System Admins

Course Code	MG265689-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Overview
Following the Valor NPI for Users course, this course covers the Valor NPI operations for enhancing the Design for Manufacturing (DFM) analysis throughout the PCB design process. The main focus is the use of the Valor Parts Library (VPL) combined with Valor NPI to facilitate comprehensive assembly analysis. Rule file management, system installation and configuration options are included.The "Best Practices" process flow is followed to show the additional functionality of VPL with respect to high level DFM analysis. Explanations and examples of the assembly DFM results using VPL are given. Methods of system automation are explored.The aim of the course is to enable the user to be more proficient in the administration of Valor NPI systems together with a strong understanding of the DFM capabilities offered. Upon completion of the course the user can be considered an "Expert User".Detailed lab exercises will help reinforce what is discussed during the instructor led lecture. You Will Learn

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

You Will Learn
 • Understand the recommended process flows, use of
 • Design Centers and Design Process Wizard
 • Definitions of Valor NPI user roles
 • Configurations for ODB++ and BOM outputs from Expedition PCB
 • Engineering Rules File (ERF) Management
 • Valor Parts Library (VPL) introduction and process flow
 • Importing Bill of Materials using BOM Manager and applying VPL package models
 • Perform Assembly Merge of VPL loaded BOM
 • Run comprehensive assembly analysis and understand the results
 • Create rules by area and apply DFM rules
 • Methods of application automation
 • System configurations and installation options

Course Description

Valor 10.0

Valor NPI for Users

Course Code	MG265690-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Overview

This course covers the Valor NPI operations for incorporating Design for Manufacturing (DFM) analysis into your PCB design process. At the conclusion of this course the attendee will understand the navigation of the Valor NPI system, general tool usage, and analysis review. Focus will be placed on a "Best Practices" process flow that will guide the user through the stages of ODB++ export and EDA input, through analysis and resolution, and finishing with output and reporting.Upon completion of this course, the user will have the full necessary knowledge to run DFM verification, as well as adjust rules to impact results. Detailed lab exercises will help reinforce what is discussed during the instructor led lecture.

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

You Will Learn How To

 • Define the DFM verification flow using the Process Flow Wizard
 • Understand commonly used functionality of Valor NPI Engineering Toolkit
 • Use Valor NPI Graphic Station general operations and navigation
 • Apply attribute features and components using Design Preparation
 • Validate hole sizes using Drill Tool Manager
 • Identify shorted or broken nets in the NetList Analyzer
 • Query components and features using the Feature Filter
 • Review DFM violations in the Manufacturing Risk Analysis (MRA) utility
 • Generate a violations report using the ShareList
 • Follow general Checklist Operations for creating an analysis Checklist
 • Map CAD packages using Component Classification

Course Description

Valor 10.0

Valor NPI for Users

Course Code	MG265690-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Overview

This course covers the Valor NPI operations for incorporating Design for Manufacturing (DFM) analysis into your PCB design process. At the conclusion of this course the attendee will understand the navigation of the Valor NPI system, general tool usage, and analysis review. Focus will be placed on a "Best Practices" process flow that will guide the user through the stages of ODB++ export and EDA input, through analysis and resolution, and finishing with output and reporting.Upon completion of this course, the user will have the full necessary knowledge to run DFM verification, as well as adjust rules to impact results. Detailed lab exercises will help reinforce what is discussed during the instructor led lecture.

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

COURSE TOPICS

You Will Learn How To
 • Define the DFM verification flow using the Process Flow Wizard
 • Understand commonly used functionality of Valor NPI Engineering Toolkit
 • Use Valor NPI Graphic Station general operations and navigation
 • Apply attribute features and components using Design Preparation
 • Validate hole sizes using Drill Tool Manager
 • Identify shorted or broken nets in the NetList Analyzer
 • Query components and features using the Feature Filter
 • Review DFM violations in the Manufacturing Risk Analysis (MRA) utility
 • Generate a violations report using the ShareList
 • Follow general Checklist Operations for creating an analysis Checklist
 • Map CAD packages using Component Classification

Course Description

Valor 10.0

Valor NPI for Users

Course Code	MG265701-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Overview

This course covers the Valor NPI operations for incorporating Design for Manufacturing (DFM) analysis into your PCB design process. At the conclusion of this course the attendee will understand the navigation of the Valor NPI system, general tool usage, and analysis review. Focus will be placed on a "Best Practices" process flow that will guide the user through the stages of ODB++ export and EDA input, through analysis and resolution, and finishing with output and reporting.Upon completion of this course, the user will have the full necessary knowledge to run DFM verification, as well as adjust rules to impact results. Detailed lab exercises will help reinforce what is discussed during the instructor led lecture.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

You Will Learn How To

 • Define the DFM verification flow using the Process Flow Wizard

PREREQUISITES

 • Understand commonly used functionality of Valor NPI Engineering Toolkit

Not Available

 • Use Valor NPI Graphic Station general operations and navigation

PROVIDED COURSE MATERIAL

 • Apply attribute features and components using Design Preparation

Not Available

 • Validate hole sizes using Drill Tool Manager

 • Identify shorted or broken nets in the NetList Analyzer

 • Query components and features using the Feature Filter

 • Review DFM violations in the Manufacturing Risk Analysis (MRA) utility

 • Generate a violations report using the ShareList

 • Follow general Checklist Operations for creating an analysis Checklist

 • Map CAD packages using Component Classification

Valor 10.0

Valor NPI for Users

Course Code	MG265701-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Overview

This course covers the Valor NPI operations for incorporating Design for Manufacturing (DFM) analysis into your PCB design process. At the conclusion of this course the attendee will understand the navigation of the Valor NPI system, general tool usage, and analysis review. Focus will be placed on a "Best Practices" process flow that will guide the user through the stages of ODB++ export and EDA input, through analysis and resolution, and finishing with output and reporting.Upon completion of this course, the user will have the full necessary knowledge to run DFM verification, as well as adjust rules to impact results. Detailed lab exercises will help reinforce what is discussed during the instructor led lecture.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

You Will Learn How To

PREREQUISITES	

Not Available

PROVIDED COURSE MATERIAL	

Not Available

 • Define the DFM verification flow using the Process Flow Wizard
 • Understand commonly used functionality of Valor NPI Engineering Toolkit
 • Use Valor NPI Graphic Station general operations and navigation
 • Apply attribute features and components using Design Preparation
 • Validate hole sizes using Drill Tool Manager
 • Identify shorted or broken nets in the NetList Analyzer
 • Query components and features using the Feature Filter
 • Review DFM violations in the Manufacturing Risk Analysis (MRA) utility
 • Generate a violations report using the ShareList
 • Follow general Checklist Operations for creating an analysis Checklist
 • Map CAD packages using Component Classification

Course Description

Mechanical Analysis 16.2

FloEFD for NX

Course Code	MG266203-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Abstract

This course is designed to provide new users of FloEFD for NX with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make the student familiar with the operation and functionality of FloEFD and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn

Fundamental operation and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn

 • Fundamental operation and functionality of the FloEFD software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniquesDesign variants and parametric functionality
 • Pre and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for NX

Course Code	MG266203-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Abstract

This course is designed to provide new users of FloEFD for NX with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make the student familiar with the operation and functionality of FloEFD and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn

Fundamental operation and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn

 • Fundamental operation and functionality of the FloEFD software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniquesDesign variants and parametric functionality
 • Pre and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for NX

Course Code	MG266204-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Abstract

This course is designed to provide new users of FloEFD for NX with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make the student familiar with the operation and functionality of FloEFD and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn

Fundamental operation and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn

 • Fundamental operation and functionality of the FloEFD software

 • Overall flow and thermal analysis creation methodology

 • Meshing techniquesDesign variants and parametric functionality

 • Pre and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for NX

Course Code	MG266204-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Abstract
This course is designed to provide new users of FloEFD for NX with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make the student familiar with the operation and functionality of FloEFD and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn
Fundamental operation and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn
 • Fundamental operation and functionality of the FloEFD software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniquesDesign variants and parametric functionality
 • Pre and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Harness XC

Course Code	MG268839-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Summary

The Capital â HarnessXCä course introduces users to the basic and more complex functionality within the Capital HarnessXC product. This tool provides a seamless transition of data from Capital Logic or Capital Integrator into Capital HarnessXC, and demonstrates how to pull mechanical data from third-party MCAD tools into Capital HarnessXC. The course also demonstrates how to create and maintain individual design objects (e.g., wires, multicores, clips, connectors, etc.) within the harness diagrams.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

 • Creation of a harness, showing how all elements can be added to it
 • Learning about the library's principal role in building a viable harness
 • Creation of a composite harness and derivatives from it
 • Running DRCs to check for common and uncommon design mistakes
 • Processing a harness design to perform part selection and automatic splice placement
 • Running reports and printing your designs
 • Management of change for any harness re-work via Engineering Change Orders (ECOs)Prerequisites

Course Description

Capital 2016.1

Capital Harness XC

Course Code	MG268839-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Summary

The Capital â HarnessXCä course introduces users to the basic and more complex functionality within the Capital HarnessXC product. This tool provides a seamless transition of data from Capital Logic or Capital Integrator into Capital HarnessXC, and demonstrates how to pull mechanical data from third-party MCAD tools into Capital HarnessXC. The course also demonstrates how to create and maintain individual design objects (e.g., wires, multicores, clips, connectors, etc.) within the harness diagrams.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

 • Creation of a harness, showing how all elements can be added to it
 • Learning about the library's principal role in building a viable harness
 • Creation of a composite harness and derivatives from it
 • Running DRCs to check for common and uncommon design mistakes
 • Processing a harness design to perform part selection and automatic splice placement
 • Running reports and printing your designs
 • Management of change for any harness re-work via Engineering Change Orders (ECOs)Prerequisites

Course Description

Mechanical Analysis 16.2

FloEFD for Creo

Course Code	MG269966-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for Creo. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for Creo and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to
Fundamental operation and functionality of the FloEFD for Creo software Overall flow and thermal analysis creation methodology Meshing techniquesDesign variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to
 • Fundamental operation and functionality of the FloEFD for Creo software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for Creo

Course Code	MG269966-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights
The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for Creo. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for Creo and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to
Fundamental operation and functionality of the FloEFD for Creo software Overall flow and thermal analysis creation methodology Meshing techniquesDesign variants and parametric functionality Pre- and post-processing tools Introduction to advanced topics

You will learn how to
 • Fundamental operation and functionality of the FloEFD for Creo software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for CATIA V5

Course Code	MG269967-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for CATIA V5. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for CATIA V5 and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS
You will learn how to:	You will learn how to:

You will learn how to:
Fundamental operation and functionality of the FloEFD for CATIA V5 software
Overall flow and thermal analysis creation methodology
Meshing techniques
Design variants and parametric functionality
Pre- and post-processing tools Introduction to advanced topics

You will learn how to:
 • Fundamental operation and functionality of the FloEFD for CATIA V5 software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD for CATIA V5

Course Code	MG269967-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Highlights

The course covers the documented lectures and hands-on tutorials, with demonstrations used to illustrate important points as well as emphasize the ease-of-use and power of FloEFD for CATIA V5. The combination of these different formats is designed to show the student the range of functionality available in FloEFD for CATIA V5 and how they can utilize them through appropriate tutorials covering a wide range of different applications.

WHO SHOULD ATTEND	COURSE TOPICS

You will learn how to:
Fundamental operation and functionality of the FloEFD for CATIA V5 software
Overall flow and thermal analysis creation methodology
Meshing techniques
Design variants and parametric functionality
Pre- and post-processing tools Introduction to advanced topics

You will learn how to:
 • Fundamental operation and functionality of the FloEFD for CATIA V5 software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre- and post-processing toolsIntroduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD Solid Edge

Course Code	MG270305-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Abstract

This course is designed to provide new users of FloEFD for Solid Edge with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make sure the student is familiar with the operation and functionality of FloEFD for Solid Edge and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn

Fundamental operations and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn

 • Fundamental operations and functionality of the FloEFD software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre and post-processing tools
 • Introduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD Solid Edge

Course Code	MG270305-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Abstract

This course is designed to provide new users of FloEFD for Solid Edge with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make sure the student is familiar with the operation and functionality of FloEFD for Solid Edge and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn

Fundamental operations and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn

 • Fundamental operations and functionality of the FloEFD software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre and post-processing tools
 • Introduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD Solid Edge

Course Code	MG270306-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Course Abstract

This course is designed to provide new users of FloEFD for Solid Edge with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make sure the student is familiar with the operation and functionality of FloEFD for Solid Edge and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn

Fundamental operations and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn

 • Fundamental operations and functionality of the FloEFD software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre and post-processing tools
 • Introduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 16.2

FloEFD Solid Edge

Course Code	MG270306-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Course Abstract

This course is designed to provide new users of FloEFD for Solid Edge with a background sufficient for tackling a wide range of flow and thermal analysis problems. The main goals of the course are to make sure the student is familiar with the operation and functionality of FloEFD for Solid Edge and to instill good engineering modeling practices.

WHO SHOULD ATTEND	COURSE TOPICS

What You'll Learn
Fundamental operations and functionality of the FloEFD softwareOverall flow and thermal analysis creation methodologyMeshing techniquesDesign variants and parametric functionalityPre and post-processing toolsIntroduction to advanced topics

What You'll Learn
 • Fundamental operations and functionality of the FloEFD software
 • Overall flow and thermal analysis creation methodology
 • Meshing techniques
 • Design variants and parametric functionality
 • Pre and post-processing tools
 • Introduction to advanced topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.1

FloTHERM Advanced

Course Code	MG271877-US
User Level	Intermediate to Advanced
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

WHO SHOULD ATTEND	COURSE TOPICS
In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.	In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.1

FloTHERM Advanced

Course Code	MG271877-US
User Level	Intermediate to Advanced
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

WHO SHOULD ATTEND	COURSE TOPICS
In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.	In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.1

FloTHERM Advanced

Course Code	MG271878-US
User Level	Intermediate to Advanced
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

WHO SHOULD ATTEND	COURSE TOPICS
In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.	In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

PREREQUISITES
Not Available

PROVIDED COURSE MATERIAL
Not Available

Course Description

Mechanical Analysis 12.1

FloTHERM Advanced

Course Code	MG271878-US
User Level	Intermediate to Advanced
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

WHO SHOULD ATTEND	COURSE TOPICS
In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.	In the FloTHERM Advanced Training course you will learn advanced troubleshooting techniques for convergence problems and gridding concerns as well as advanced modeling topics.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 7.9

MagNet Introductory

Course Code	MG272884-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

WHO SHOULD ATTEND	COURSE TOPICS
The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.	The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 7.9

MagNet Introductory

Course Code	MG272884-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

WHO SHOULD ATTEND	COURSE TOPICS
The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.	The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 6.2

MotorSolve Introductory

Course Code	MG272886-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

WHO SHOULD ATTEND	COURSE TOPICS
Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features	Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 6.2

MotorSolve Introductory

Course Code	MG272886-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

WHO SHOULD ATTEND	COURSE TOPICS
Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features	Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2016.1

Capital Integrator Generative

Course Code	MG273560-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

You will learn how to
Format the Topology Layout, Partition harnesses, Manually manipulate designs, Create and apply rules and design constraints, Assign options and variants, and synthesize wire according to the topological definition, rules, and options assigned.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

- Creation and manipulation of a harness topology
- Placement of devices in slots
- Slot manipulation
- Wire synthesisManagement of rules and wire synthesis
- Connector manipulationAutomated wiring designs

Course Description

Capital 2016.1

Capital Integrator Generative

Course Code	MG273560-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

You will learn how to

Format the Topology Layout, Partition harnesses, Manually manipulate designs, Create and apply rules and design constraints, Assign options and variants, and synthesize wire according to the topological definition, rules, and options assigned.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

Key topics

PREREQUISITES

- Creation and manipulation of a harness topology
- Placement of devices in slots

Not Available

- Slot manipulation

PROVIDED COURSE MATERIAL

- Wire synthesisManagement of rules and wire synthesis
- Connector manipulationAutomated wiring designs

Not Available

Course Description

Mechanical Analysis 2.2

FloTHERM XT Advanced

Course Code	MG273769-US
User Level	All
Language	English
Price	$980.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

WHO SHOULD ATTEND	COURSE TOPICS
The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.	The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 2.2

FloTHERM XT Advanced

Course Code	MG273769-US
User Level	All
Language	English
Price	$700.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

WHO SHOULD ATTEND	COURSE TOPICS

The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

The FloTHERM XT course will teach you how to design, build and simulate simple to complicated electronics cooling related models.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 1.0

Scripting for FloTHERM

Course Code	MG275179-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

WHO SHOULD ATTEND	**COURSE TOPICS**

All

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 1.0

Scripting for FloTHERM

Course Code	MG275179-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

WHO SHOULD ATTEND	**COURSE TOPICS**

All

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 1.0

Scripting for FloTHERM

Course Code	MG275180-US
User Level	All
Language	English
Price	$1,960.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

WHO SHOULD ATTEND	**COURSE TOPICS**

All

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 1.0

Scripting for FloTHERM

Course Code	MG275180-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

WHO SHOULD ATTEND	**COURSE TOPICS**

All

The Scripting for FloTHERM course will help you to take advantage of the FloXML and FloSCRIPT capabilities in FloTHERM, so that you can save time and increase accuracy when using FloTHERM for repetitive tasks.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.0

FloVENT Introduction

Course Code	MG276011-US
User Level	All
Language	English
Price	$2,940.00 (CAD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

WHO SHOULD ATTEND	COURSE TOPICS

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models. The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 12.0

FloVENT Introduction

Course Code	MG276011-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

WHO SHOULD ATTEND

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models. The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

COURSE TOPICS

The course is divided into two parts:
The first two days of the course is a mixture of lectures, demonstrations, and tutorials designed to introduce you to the basic concepts and different types of conditions. The hands-on tutorials focus on practical examples that you will need for building your own models.The third day of the course is set aside in order to start building models for applications. This session will include advice on modeling strategies and a way to watch out for. It is suggested that if you have any information on the type of models you would like to build on the course, that you bring them along on the third day.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 7.9

MagNet Introductory

Course Code	MG278389-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

WHO SHOULD ATTEND	COURSE TOPICS
The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.	The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 7.9

MagNet Introductory

Course Code	MG278389-US
User Level	All
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 5 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

WHO SHOULD ATTEND	**COURSE TOPICS**
The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.	The MagNet Introductory Training Course will help you use MagNet more efficiently and with greater confidence. Learn to avoid common modeling mistakes and decrease simulation time while increasing simulation accuracy.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 6.3

MotorSolve Introductory

Course Code	MG278390-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 3 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

WHO SHOULD ATTEND	COURSE TOPICS
Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features	Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Mechanical Analysis 6.3

MotorSolve Introductory

Course Code	MG278390-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 3 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

WHO SHOULD ATTEND

Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

COURSE TOPICS

Interface Using the Motor explorer panel, Input panel & View window Creating & comparing multiple designs Geometry Modifying pre-defined rotor & stator templates DXF import for creating custom rotor & stator parts Windings Setting parameters for automatic layout generation Results & Solving Defining inputs Performance Charts & Analysis Charts Fields & Field Charts Exporting Results Materials Viewing material properties Creating & modifying properties Scripting & Automation Optional Features

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2018.1

Capital ModXC Functional Module Design

Course Code	MG278894-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Capital ModXC Functional Module Design

WHO SHOULD ATTEND	COURSE TOPICS
Capital ModXC Functional Module Design	Capital ModXC Functional Module Design

PREREQUISITES
Not Available

PROVIDED COURSE MATERIAL
Not Available

Course Description

Capital 2018.1

Capital ModXC Functional Module Design

Course Code	MG278894-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Capital ModXC Functional Module Design

WHO SHOULD ATTEND	COURSE TOPICS

Capital ModXC Functional Module Design

Capital ModXC Functional Module Design

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2018.1

Capital ModXC Functional Module Design

Course Code	MG278895-US
User Level	All
Language	English
Price	(Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar Canada (Training.Nstar.plm@siemens.com)

Capital ModXC Functional Module Design

WHO SHOULD ATTEND	COURSE TOPICS

Capital ModXC Functional Module Design | Capital ModXC Functional Module Design

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Not Available

Course Description

Capital 2018.1

Capital ModXC Functional Module Design

Course Code	MG278895-US
User Level	All
Language	English
Price	$1,400.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	6 hours for each day for 4 days
For More Information	Siemens PL Training, Nstar USA (Training.Nstar.plm@siemens.com)

Capital ModXC Functional Module Design

WHO SHOULD ATTEND	COURSE TOPICS
Capital ModXC Functional Module Design	Capital ModXC Functional Module Design

PREREQUISITES
Not Available

PROVIDED COURSE MATERIAL
Not Available

Course Description

NX Nastran 11.0

Introduction to Finite Element Analysis with Femap for Pre/Post

Course Code	NXNAS110-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Finite Element Analysis with Femap for pre/post** course is an introductory course for static finite element structural analysis using NX Nastran. The course is designed to teach NX Nastran independent of pre- and post- processors. However, additional material is available for demonstration of use with Femap. It is intended for analysts who want to learn the details of how to perform static structural analysis using NX Nastran.

The course covers the details of the structural analysis processes to define loads and boundary conditions, FEA model checking and solving, and interpreting the results. This course also covers NX Nastran deck format, executive section, Case control, Output control, and common element uses and limitations.

This course **does not** cover any topics on FEMAP simulations. For information on FEMAP, please refer to the prerequisites information below.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for designers, engineers and finite element analysts who would like to understand how to perform linear static analysis using NX Nastran.

PREREQUISITES

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

- Introduction to static finite element analysis
- Static solution sequences
- Case control
- Output control
- Common elements, uses and limitations
- Constraint and load types
- Model verification and checking
- Buckling analysis

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 12.0

Introduction to Finite Element Analysis with Femap for Pre/Post

Course Code	NXNAS110-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Finite Element Analysis with Femap for pre/post** course is an introductory course for static finite element structural analysis using NX Nastran. The course is designed to teach NX Nastran independent of pre- and post- processors. However, additional material is available for demonstration of use with Femap. It is intended for analysts who want to learn the details of how to perform static structural analysis using NX Nastran.

The course covers the details of the structural analysis processes to define loads and boundary conditions, FEA model checking and solving, and interpreting the results. This course also covers NX Nastran deck format, executive section, Case control, Output control, and common element uses and limitations.

This course **does not** cover any topics on FEMAP simulations. For information on FEMAP, please refer to the prerequisites information below.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for designers, engineers and finite element analysts who would like to understand how to perform linear static analysis using NX Nastran.

- Introduction to static finite element analysis
- Static solution sequences
- Case control
- Output control
- Common elements, uses and limitations
- Constraint and load types
- Model verification and checking
- Buckling analysis

PREREQUISITES

- Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 11.0

Introduction to Finite Element Analysis with Simcenter Pre/Post

Course Code	NXNAS111-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Finite Element Analysis with Simcenter Pre/Post** course is an introductory course for static finite element structural analysis using NX Nastran. The course is designed to teach NX Nastran independent of pre- and post- processors. However, additional material is available for demonstration of use with Simcenter 3D. It is intended for analysts who want to learn the details of how to perform static structural analysis using NX Nastran.

The course covers the details of the structural analysis processes to define loads and boundary conditions, FEA model checking and solving, and interpreting the results. This course also covers NX Nastran deck format, executive section, Case control, Output control, and common element uses and limitations.

This course **does not** cover any topics of Simcenter Pre/Post. For information on Simcenter Pre/Post, please refer to the prerequisites information below.

WHO SHOULD ATTEND

This course is intended for designers, engineers and finite element analysts who would like to understand how to perform linear static analysis using NX Nastran.

PREREQUISITES

• Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to static finite element analysis
• Static solution sequences
• Case control
• Output control
• Common elements, uses and limitations
• Constraint and load types
• Model verification and checking
• Buckling analysis

Course Description

NX Nastran 12.0

Introduction to Finite Element Analysis with Simcenter Pre/Post

Course Code	NXNAS111-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Finite Element Analysis with Simcenter Pre/Post** course is an introductory course for static finite element structural analysis using NX Nastran. The course is designed to teach NX Nastran independent of pre- and post- processors. However, additional material is available for demonstration of use with Simcenter 3D. It is intended for analysts who want to learn the details of how to perform static structural analysis using NX Nastran.

The course covers the details of the structural analysis processes to define loads and boundary conditions, FEA model checking and solving, and interpreting the results. This course also covers NX Nastran deck format, executive section, Case control, Output control, and common element uses and limitations.

This course **does not** cover any topics of Simcenter Pre/Post. For information on Simcenter Pre/Post, please refer to the prerequisites information below.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for designers, engineers and finite element analysts who would like to understand how to perform linear static analysis using NX Nastran.

- Introduction to static finite element analysis
- Static solution sequences
- Case control
- Output control
- Common elements, uses and limitations
- Constraint and load types
- Model verification and checking
- Buckling analysis

PREREQUISITES

- Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 11.0

Introduction to Dynamic Analysis with Femap for Pre/Post

Course Code	NXNAS120-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Dynamic Analysis with Femap for pre/post** course introduces the dynamic capabilities available in NX Nastran. It covers the fundamental methods for solving for dynamic response, focusing on modal analysis. There is an emphasis on practical applications and enhancing the students' engineering judgment with respect to dynamic response. The fundamentals of structural dynamics theory are reviewed and the numerical methods used to solve them are presented.

The course covers the linear dynamic response capabilities of NX Nastran, including normal modes analysis, transient and frequency response, residual vectors, and enforced motion. A variety of hands-on workshop exercises supplement the lecture content. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Femap.

WHO SHOULD ATTEND

This course is intended for designers, engineers and finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Normal Modes Analysis
• Model Mass
• Damping
• Transient Analysis
• Frequency Response Analysis
• Residual Vectors
• Enforced Motion

Course Description

NX Nastran 12.0

Introduction to Dynamic Analysis with Femap for Pre/Post

Course Code	NXNAS120-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND

This course is intended for designers, engineers and finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Normal Modes Analysis
• Model Mass
• Damping
• Transient Analysis
• Frequency Response Analysis
• Residual Vectors
• Enforced Motion

Course Description

NX Nastran 11.0

Introduction to Dynamic Analysis with Simcenter Pre/Post

Course Code	NXNAS121-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Dynamic Analysis with Simcenter Pre/Post** course introduces the dynamic capabilities available in NX Nastran. It covers the fundamental methods for solving for dynamic response, focusing on modal analysis. There is an emphasis on practical applications and enhancing the students' engineering judgment with respect to dynamic response. The fundamentals of structural dynamics theory are reviewed and the numerical methods used to solve them are presented.

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WHO SHOULD ATTEND

This course is intended for designers, engineers and finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with NX (G2H) (NXNAS111)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Normal Modes Analysis
• Model Mass
• Damping
• Transient Analysis
• Frequency Response Analysis
• Residual Vectors
• Enforced Motion

Course Description

NX Nastran 12.0

Introduction to Dynamic Analysis with Simcenter Pre/Post

Course Code	NXNAS121-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Dynamic Analysis with Simcenter Pre/Post** course introduces the dynamic capabilities available in NX Nastran. It covers the fundamental methods for solving for dynamic response, focusing on modal analysis. There is an emphasis on practical applications and enhancing the students' engineering judgment with respect to dynamic response. The fundamentals of structural dynamics theory are reviewed and the numerical methods used to solve them are presented.

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WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for designers, engineers and finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

- Normal Modes Analysis
- Model Mass
- Damping
- Transient Analysis
- Frequency Response Analysis
- Residual Vectors
- Enforced Motion

PREREQUISITES

Required courses:
 • Introduction to Finite Element Analysis with Simcenter Pre/Post (NXNAS111-GH)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 11.0

Advanced Dynamic Analysis with Femap for Pre/Post

Course Code	NXNAS220-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Advanced Dynamic Analysis with Femap for pre/post** course continues where the NX Nastran Introduction to Dynamic Analysis course left off in teaching NX Nastran's dynamic analysis capabilities. It covers fundamental methods of dynamic response, including both modal and direct analysis. There is an emphasis on practical applications and enhancing the students' engineering judgment with respect to dynamic response. The fundamentals of structural dynamics theory and the numerical methods used to solve them are presented.

This course covers the linear dynamic response capabilities in NX Nastran, including model reduction, random response analysis, shock and response spectra, MFLUID, and nonlinear applied loads. A variety of hands-on workshop exercises supplement the lecture content. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Femap.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

• Model Reduction
• Shock and Response Spectrum
• Random Response
• Extra Points, Transfer Functions, and NOLINs
• Use of MFLUID

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 12.0

Advanced Dynamic Analysis with Femap for Pre/Post

Course Code	NXNAS220-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Advanced Dynamic Analysis with Femap for pre/post** course continues where the NX Nastran Introduction to Dynamic Analysis course left off in teaching NX Nastran's dynamic analysis capabilities. It covers fundamental methods of dynamic response, including both modal and direct analysis. There is an emphasis on practical applications and enhancing the students' engineering judgment with respect to dynamic response. The fundamentals of structural dynamics theory and the numerical methods used to solve them are presented.

This course covers the linear dynamic response capabilities in NX Nastran, including model reduction, random response analysis, shock and response spectra, MFLUID, and nonlinear applied loads. A variety of hands-on workshop exercises supplement the lecture content. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Femap.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

• Model Reduction
• Shock and Response Spectrum
• Random Response
• Extra Points, Transfer Functions, and NOLINs
• Use of MFLUID

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Advanced Dynamic Analysis with Simcenter Pre/Post

Course Code	NXNAS221-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Advanced Dynamic Analysis with Simcenter Pre/Post** course continues where the NX Nastran Introduction to Dynamic Analysis course left off in teaching NX Nastran's dynamic analysis capabilities. It covers fundamental methods of dynamic response, including both modal and direct analysis. There is an emphasis on practical applications and enhancing the students' engineering judgment with respect to dynamic response. The fundamentals of structural dynamics theory and the numerical methods used to solve them are presented.

This course covers the linear dynamic response capabilities in NX Nastran, including model reduction, random response analysis, shock and response spectra, MFLUID, and nonlinear applied loads. A variety of hands-on workshop exercises supplement the lecture content. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Simcenter Pre/Post.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

- Model Reduction
- Shock and Response Spectrum
- Random Response
- Extra Points, Transfer Functions, and NOLINs
- Use of MFLUID

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with NX (G2H) (NXNAS121)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 12.0

Advanced Dynamic Analysis with Simcenter Pre/Post

Course Code	NXNAS221-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Advanced Dynamic Analysis with Simcenter Pre/Post** course continues where the NX Nastran Introduction to Dynamic Analysis course left off in teaching NX Nastran's dynamic analysis capabilities. It covers fundamental methods of dynamic response, including both modal and direct analysis. There is an emphasis on practical applications and enhancing the students' engineering judgment with respect to dynamic response. The fundamentals of structural dynamics theory and the numerical methods used to solve them are presented.

This course covers the linear dynamic response capabilities in NX Nastran, including model reduction, random response analysis, shock and response spectra, MFLUID, and nonlinear applied loads. A variety of hands-on workshop exercises supplement the lecture content. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Simcenter Pre/Post.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who will be using NX Nastran to perform dynamic analyses to predict structural behavior under steady state and transient conditions.

• Model Reduction
• Shock and Response Spectrum
• Random Response
• Extra Points, Transfer Functions, and NOLINs
• Use of MFLUID

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with NX (G2H) (NXNAS121)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Introduction to DMAP in NX Nastran

Course Code	NXNAS312-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to DMAP in NX Nastran** course offers training in the NX Nastran Direct Matrix Abstraction Program (DMAP) language. Students will learn to write their own DMAP extensions to enhance the capabilities of NX Nastran. DMAP can be used to enhance the functionality of NX Nastran including computation of different responses, the transfer of non-standard data to and from NX Nastran or to incorporate other user-developed algorithms. The student will learn to use the DMAP language through the presentation of lecture materials and the completion of example problems.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

This course is intended for advanced finite element analysts who need to be able to customize NX Nastran to their exact requirements including acceptance of new inputs, performance of new calculations and generation of new outputs.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)
 • NX Nastran Introduction to Finite Element Analysis with NX (G2H) (NXNAS111)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.
 • Basic linear algebra including matrix operations, eigenvalue solutions, etc

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to DMAP
• DMAP Data Types (Parameters and Datablocks)
• DMAP Syntax (Modules)
• subDMAPs
• Understanding NX Nastran solution sequences
• Altering solution sequences
• Input and Output
• Database
• ISHELL module for user provided routines

Course Description

NX Nastran 12.0

Introduction to DMAP in NX Nastran

Course Code	NXNAS312-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to DMAP in NX Nastran** course offers training in the NX Nastran Direct Matrix Abstraction Program (DMAP) language. Students will learn to write their own DMAP extensions to enhance the capabilities of NX Nastran. DMAP can be used to enhance the functionality of NX Nastran including computation of different responses, the transfer of non-standard data to and from NX Nastran or to incorporate other user-developed algorithms. The student will learn to use the DMAP language through the presentation of lecture materials and the completion of example problems.

WHO SHOULD ATTEND

This course is intended for advanced finite element analysts who need to be able to customize NX Nastran to their exact requirements including acceptance of new inputs, performance of new calculations and generation of new outputs.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)
 • NX Nastran Introduction to Finite Element Analysis with NX (G2H) (NXNAS111)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.
 • Basic linear algebra including matrix operations, eigenvalue solutions, etc

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to DMAP
• DMAP Data Types (Parameters and Datablocks)
• DMAP Syntax (Modules)
• subDMAPs
• Understanding NX Nastran solution sequences
• Altering solution sequences
• Input and Output
• Database
• ISHELL module for user provided routines

Course Description

NX Nastran 11.0

Superelement Analysis with Femap for Pre/Post

Course Code	NXNAS320-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Superelement Analysis with Femap for pre/post** course offers training in the use of the superelement analysis capabilities of NX Nastran. Superelements can play a key role in allowing the analyst to solve larger and more complex finite element models with limited computer resources. NX Nastran offers three types of superelements, and these can all be used with most NX Nastran analysis sequences. The different types of superelements each have their advantages and disadvantages, depending on the particular needs of a program. The student will learn to use all three types of superelements through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Femap.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who need to analyze large system level models composed of multiple components or who work within a team of analysts each responsible for a set of components.

- Model reduction (static and component mode synthesis)
- Main bulk data superelements
- Partitioned superelements
- External superelements
- Choosing the best type of superelements
- Optimal partitioning of a system model into superelements

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 12.0

Superelement Analysis with Femap for Pre/Post

Course Code	NXNAS320-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Superelement Analysis with Femap for pre/post** course offers training in the use of the superelement analysis capabilities of NX Nastran. Superelements can play a key role in allowing the analyst to solve larger and more complex finite element models with limited computer resources. NX Nastran offers three types of superelements, and these can all be used with most NX Nastran analysis sequences. The different types of superelements each have their advantages and disadvantages, depending on the particular needs of a program. The student will learn to use all three types of superelements through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Femap.

WHO SHOULD ATTEND

This course is intended for finite element analysts who need to analyze large system level models composed of multiple components or who work within a team of analysts each responsible for a set of components.

COURSE TOPICS

• Model reduction (static and component mode synthesis)
• Main bulk data superelements
• Partitioned superelements
• External superelements
• Choosing the best type of superelements
• Optimal partitioning of a system model into superelements

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Superelement Analysis with Simcenter Pre/Post

Course Code	NXNAS321-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Superelement Analysis with Simcenter Pre/Post** course offers training in the use of the superelement analysis capabilities of NX Nastran. Superelements can play a key role in allowing the analyst to solve larger and more complex finite element models with limited computer resources. NX Nastran offers three types of superelements, and these can all be used with most NX Nastran analysis sequences. The different types of superelements each have their advantages and disadvantages, depending on the particular needs of a program. The student will learn to use all three types of superelements through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Simcenter 3D.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who need to analyze large system level models composed of multiple components or who work within a team of analysts each responsible for a set of components.

- Model reduction (static and component mode synthesis)
- Main bulk data superelements
- Partitioned superelements
- External superelements
- Choosing the best type of superelements
- Optimal partitioning of a system model into superelements

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with NX (G2H) (NXNAS111)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 12.0

Superelement Analysis with Simcenter Pre/Post

Course Code	NXNAS321-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Superelement Analysis with Simcenter Pre/Post** course offers training in the use of the superelement analysis capabilities of NX Nastran. Superelements can play a key role in allowing the analyst to solve larger and more complex finite element models with limited computer resources. NX Nastran offers three types of superelements, and these can all be used with most NX Nastran analysis sequences. The different types of superelements each have their advantages and disadvantages, depending on the particular needs of a program. The student will learn to use all three types of superelements through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Simcenter 3D.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who need to analyze large system level models composed of multiple components or who work within a team of analysts each responsible for a set of components.

• Model reduction (static and component mode synthesis)
• Main bulk data superelements
• Partitioned superelements
• External superelements
• Choosing the best type of superelements
• Optimal partitioning of a system model into superelements

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with NX (G2H) (NXNAS111)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Design Sensitivity and Optimization with Femap for Pre/Post

Course Code	NXNAS330-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Design Sensitivity and Optimization with Femap for pre/post** course offers the theoretical and practical aspects of using the NX Nastran sensitivity and optimization capabilities. Sensitivity and design optimization can be used to automate the improvement of a proposed design. The NX Nastran design sensitivity and optimization solution is extremely flexible and allows the user to vary the model parameters to minimize an objective function, such as overall weight, given constraints on both the static and dynamic response. The class will cover the definition of design variables, constraints and objectives in NX Nastran, as well as the interpretation of results. The student will learn to use NX Nastran sensitivity and optimization through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with FEMAP.

WHO SHOULD ATTEND

This course is intended for finite element analysts who need to optimize the performance of their components or systems, or understand what parameters in the system most strongly affect performance.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Understanding structural optimization
• Defining design variables in NX Nastran
• Defining design constraints in NX Nastran
• Defining objective functions in NX Nastran
• Optimization for combinations of static and dynamic loads
• Interpreting design sensitivity and optimization results

Course Description

NX Nastran 12.0

Design Sensitivity and Optimization with Femap for Pre/Post

Course Code	NXNAS330-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Design Sensitivity and Optimization with Femap for pre/post** course offers the theoretical and practical aspects of using the NX Nastran sensitivity and optimization capabilities. Sensitivity and design optimization can be used to automate the improvement of a proposed design. The NX Nastran design sensitivity and optimization solution is extremely flexible and allows the user to vary the model parameters to minimize an objective function, such as overall weight, given constraints on both the static and dynamic response. The class will cover the definition of design variables, constraints and objectives in NX Nastran, as well as the interpretation of results. The student will learn to use NX Nastran sensitivity and optimization through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with FEMAP.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who need to optimize the performance of their components or systems, or understand what parameters in the system most strongly affect performance.

• Understanding structural optimization
• Defining design variables in NX Nastran
• Defining design constraints in NX Nastran
• Defining objective functions in NX Nastran
• Optimization for combinations of static and dynamic loads
• Topology optimization
• Interpreting design sensitivity and optimization results

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Design Sensitivity and Optimization with Simcenter Pre/Post

Course Code	NXNAS331-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Design Sensitivity and Optimization with Simcenter Pre/Post** course offers the theoretical and practical aspects of using the NX Nastran sensitivity and optimization capabilities. Sensitivity and design optimization can be used to automate the improvement of a proposed design. The NX Nastran design sensitivity and optimization solution is extremely flexible and allows the user to vary the model parameters to minimize an objective function, such as overall weight, given constraints on both the static and dynamic response. The class will cover the definition of design variables, constraints and objectives in NX Nastran, as well as the interpretation of results. The student will learn to use NX Nastran sensitivity and optimization through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Simcenter Pre/Post.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who need to optimize the performance of their components or systems, or understand what parameters in the system most strongly affect performance.

- Understanding structural optimization
- Defining design variables in NX Nastran
- Defining design constraints in NX Nastran
- Defining objective functions in NX Nastran
- Optimization for combinations of static and dynamic loads
- Interpreting design sensitivity and optimization results

PREREQUISITES

Required courses:
- NX Nastran Introduction to Dynamic Analysis with NX (G2H) (NXNAS121)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 12.0

Design Sensitivity and Optimization with Simcenter Pre/Post

Course Code	NXNAS331-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Design Sensitivity and Optimization with Simcenter Pre/Post** course offers the theoretical and practical aspects of using the NX Nastran sensitivity and optimization capabilities. Sensitivity and design optimization can be used to automate the improvement of a proposed design. The NX Nastran design sensitivity and optimization solution is extremely flexible and allows the user to vary the model parameters to minimize an objective function, such as overall weight, given constraints on both the static and dynamic response. The class will cover the definition of design variables, constraints and objectives in NX Nastran, as well as the interpretation of results. The student will learn to use NX Nastran sensitivity and optimization through the presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Simcenter Pre/Post.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who need to optimize the performance of their components or systems, or understand what parameters in the system most strongly affect performance.

- Understanding structural optimization
- Defining design variables in NX Nastran
- Defining design constraints in NX Nastran
- Defining objective functions in NX Nastran
- Optimization for combinations of static and dynamic loads
- Topology optimization
- Interpreting design sensitivity and optimization results

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with NX (G2H) (NXNAS121)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 11.0

DDAM Analysis with Femap for Pre/Post

Course Code	NXNAS410-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **DDAM Analysis with Femap for pre/post** course offers training in the performance of the Dynamic Design Analysis Method using NX Nastran. DDAM is a U.S. Navy-developed analytical procedure for evaluating the design of equipment subject to shock loading. The student will learn to use the NX Nastran DDAM solution (SOL 187) through a presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Femap.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for finite element analysts who need to perform shock analysis per the Navy's DDAM procedure.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to DDAM theory
• Shock spectra calculations per NRL memorandum 1396
• Mode selection criteria
• Closely spaced modes
• Methods for stress summation including the NRLSUM
• Running and interpreting DDAM solutions in Nastran

Course Description

NX Nastran 12.0

DDAM Analysis with Femap for Pre/Post

Course Code	NXNAS410-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **DDAM Analysis with Femap for pre/post** course offers training in the performance of the Dynamic Design Analysis Method using NX Nastran. DDAM is a U.S. Navy-developed analytical procedure for evaluating the design of equipment subject to shock loading. The student will learn to use the NX Nastran DDAM solution (SOL 187) through a presentation of lecture materials and the completion of example problems. The class is focused on NX Nastran and most of the material applies independently of pre- or postprocessor. However, additional material is available for demonstration of use with Femap.

WHO SHOULD ATTEND

This course is intended for finite element analysts who need to perform shock analysis per the Navy's DDAM procedure.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to DDAM theory
• Shock spectra calculations per NRL memorandum 1396
• Mode selection criteria
• Closely spaced modes
• Methods for stress summation including the NRLSUM
• Running and interpreting DDAM solutions in Nastran

Course Description

NX Nastran 11.0

Coupled Structure/Acoustic Analysis with Femap for Pre/Post

Course Code	NXNAS420-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Coupled Structure/Acoustic Analysis with Femap for pre/post** course introduces the acoustics and structural-acoustics coupled analysis capabilities of NX Nastran. It covers the solution of acoustic systems, the solution of coupled structural-acoustic systems, the implementation of acoustic boundary conditions, and the modeling of absorbers, barriers, and infinite boundaries. Examples and workshops give the student practical hands-on experience.

The class is focused on NX Nastran and all of the material applies independently of pre- or postprocessor. The workshops and examples are deck centric (i.e. the decks will be prepared with a text editor), though where appropriate FEMAP will be used for preprocessing of the model and visualization of results.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform analysis of fluid or coupled fluid-structural systems to predict responses under steady state and transient conditions.

- Solution of acoustic modes
- Acoustic boundary conditions
- Frequency and transient response of acoustic systems
- Modeling sound absorption, barriers, and infinite boundaries
- Coupled structural/acoustic systems

PREREQUISITES

Required courses:
 • NX Nastran Advanced Dynamic Analysis with Femap (G2H) (NXNAS220)

Participant also needs to have a basic understanding of finite element analysis principles and a working knowledge of Nastran and Femap.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 12.0

Coupled Structure/Acoustic Analysis with Femap for Pre/Post

Course Code	NXNAS420-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Coupled Structure/Acoustic Analysis with Femap for pre/post** course introduces the acoustics and structural-acoustics coupled analysis capabilities of NX Nastran. It covers the solution of acoustic systems, the solution of coupled structural-acoustic systems, the implementation of acoustic boundary conditions, and the modeling of absorbers, barriers, and infinite boundaries. Examples and workshops give the student practical hands-on experience.

The class is focused on NX Nastran and all of the material applies independently of pre- or postprocessor. The workshops and examples are deck centric (i.e. the decks will be prepared with a text editor), though where appropriate FEMAP will be used for preprocessing of the model and visualization of results.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform analysis of fluid or coupled fluid-structural systems to predict responses under steady state and transient conditions.

• Solution of acoustic modes
• Acoustic boundary conditions
• Frequency and transient response of acoustic systems
• Modeling sound absorption, barriers, and infinite boundaries
• Coupled structural/acoustic systems
• Transmission loss

PREREQUISITES

Required courses:
 • NX Nastran Advanced Dynamic Analysis with Femap (G2H) (NXNAS220)

Participant also needs to have a basic understanding of finite element analysis principles and a working knowledge of Nastran and Femap.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Coupled Structure/Acoustic Analysis with Simcenter Pre/Post

Course Code	NXNAS421-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Coupled Structure/Acoustic Analysis with Simcenter Pre/Post** course introduces the acoustics and structural-acoustics coupled analysis capabilities of NX Nastran. It covers the solution of acoustic systems, the solution of coupled structural-acoustic systems, the implementation of acoustic boundary conditions, and the modeling of absorbers, barriers, and infinite boundaries. Examples and workshops give the student practical hands-on experience.

The class is focused on NX Nastran and all of the material applies independently of pre- or postprocessor. The workshops and examples are deck centric (i.e. the decks will be prepared with a text editor), though where appropriate Simcenter Pre/Post will be used for preprocessing of the model and visualization of results.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform analysis of fluid or coupled fluid-structural systems to predict responses under steady state and transient conditions.

- Solution of acoustic modes
- Acoustic boundary conditions
- Frequency and transient response of acoustic systems
- Modeling sound absorption, barriers, and infinite boundaries
- Coupled structural/acoustic systems

PREREQUISITES

Required courses:
 • NX Nastran Advanced Dynamic Analysis with NX (G2H) (NXNAS221)

Participant also needs to have a basic understanding of finite element analysis principles and a working knowledge of Nastran and Simcenter Pre/Post.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 12.0

Coupled Structure/Acoustic Analysis with Simcenter Pre/Post

Course Code	NXNAS421-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

 The **Coupled Structure/Acoustic Analysis with Simcenter Pre/Post** course introduces the acoustics and structural-acoustics coupled analysis capabilities of NX Nastran. It covers the solution of acoustic systems, the solution of coupled structural-acoustic systems, the implementation of acoustic boundary conditions, and the modeling of absorbers, barriers, and infinite boundaries. Examples and workshops give the student practical hands-on experience.

The class is focused on NX Nastran and all of the material applies independently of pre- or postprocessor. The workshops and examples are deck centric (i.e. the decks will be prepared with a text editor), though where appropriate Simcenter Pre/Post will be used for preprocessing of the model and visualization of results.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform analysis of fluid or coupled fluid-structural systems to predict responses under steady state and transient conditions.

• Solution of acoustic modes
• Acoustic boundary conditions
• Frequency and transient response of acoustic systems
• Modeling sound absorption, barriers, and infinite boundaries
• Coupled structural/acoustic systems

PREREQUISITES

Required courses:
 • NX Nastran Advanced Dynamic Analysis with NX (G2H) (NXNAS221)

Participant also needs to have a basic understanding of finite element analysis principles and a working knowledge of Nastran and Simcenter Pre/Post.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Aeroelastic Analysis with Femap for Pre/Post

Course Code	NXNAS430-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course introduces the aeroelasticity capabilities available in NX Nastran. A review of aeroelastic theory and the fundamentals of setting up and running aeroelasticity solutions are covered. There is an emphasis on the practical applications of the software and enhancing the student's engineering judgment with respect to aeroelastic analysis of aircraft.

The course covers the aeroelastic capabilities of NX Nastran, including aerodynamic panel model theories, connection of aerodynamic models to structural models, static trim analysis, dynamic maneuver and gust analysis, and flutter analysis. The class is focused on NX Nastran and most of the material applies independently of pre- or post-processor. Additional material is available for use with Femap.

WHO SHOULD ATTEND

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform aeroelastic analysis to determine aircraft, missile, or launch vehicle loads, performance, or stability.

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

Participant also needs to have a basic understanding of finite element analysis principles, statics, solid mechanics, and dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Aerodynamic theories
• Aerodynamic panel modeling
• Aerodynamic model corrections
• Static aeroelasticity
• Dynamic aeroelasticity
• Flutter

Course Description

NX Nastran 12.0

Aeroelastic Analysis with Femap for Pre/Post

Course Code	NXNAS430-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course introduces the aeroelasticity capabilities available in NX Nastran. A review of aeroelastic theory and the fundamentals of setting up and running aeroelasticity solutions are covered. There is an emphasis on the practical applications of the software and enhancing the student's engineering judgment with respect to aeroelastic analysis of aircraft.

The course covers the aeroelastic capabilities of NX Nastran, including aerodynamic panel model theories, connection of aerodynamic models to structural models, static trim analysis, dynamic maneuver and gust analysis, and flutter analysis. The class is focused on NX Nastran and most of the material applies independently of pre- or post-processor. Additional material is available for use with Femap.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform aeroelastic analysis to determine aircraft, missile, or launch vehicle loads, performance, or stability.

• Aerodynamic theories
• Aerodynamic panel modeling
• Aerodynamic model corrections
• Static aeroelasticity
• Dynamic aeroelasticity
• Flutter

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)

Participant also needs to have a basic understanding of finite element analysis principles, statics, solid mechanics, and dynamics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 12.0

Rotor Dynamic Analysis with Femap for Pre/Post

Course Code	NXNAS440-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Rotor Dynamic Analysis with Femap for pre/post** course introduces the rotor dynamics analysis capabilities of NX Nastran. It covers the solution of rotor dynamic problems in both rotating and fixed coordinates, including complex eigenvalues (Campbell diagrams), synchronous and asynchronous frequency response and synchronous and asynchronous time response. Examples and workshops give the student practical hands-on experience. The class is focused on NX Nastran and all of the material applies independently of pre- or postprocessor. Where appropriate Femap is used for pre-processing and visualization of results.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform analysis of rotating systems to predict critical frequencies and dynamic response.

- Understanding rotor dynamics in rotating and fixed coordinates
- Complex modes, critical frequencies and Campbell Diagrams
- Synchronous and Asynchronous Frequency Response
- Synchronous and Asynchronous Transient Response
- Frequency Dependent and Nonlinear Simulation

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with Femap (G2H) (NXNAS110)
 • NX Nastran Introduction to Dynamic Analysis with Femap (G2H) (NXNAS120)
 • NX Nastran Advanced Dynamic Analysis with Femap (G2H) (NXNAS220)

Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of Nastran and NX.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX Nastran 12.0

Rotor Dynamic Analysis with Simcenter Pre/Post

Course Code	NXNAS441-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

 The **Rotor Dynamic Analysis with Simcenter Pre/Post** course introduces the rotor dynamics analysis capabilities of NX Nastran. It covers the solution of rotor dynamic problems in both rotating and fixed coordinates, including complex eigenvalues (Campbell diagrams), synchronous and asynchronous frequency response and synchronous and asynchronous time response. Examples and workshops give the student practical hands-on experience. The class is focused on NX Nastran and all of the material applies independently of pre- or postprocessor. Where appropriate, Simcenter 3D is used for pre-processing and visualization of results.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for engineers and finite element analysts who will be using NX Nastran to perform analysis of rotating systems to predict critical frequencies and dynamic response.

• Understanding rotor dynamics in rotating and fixed coordinates
• Complex modes, critical frequencies and Campbell Diagrams
• Synchronous and Asynchronous Frequency Response
• Synchronous and Asynchronous Transient Response
• Frequency Dependent and Nonlinear Simulation

PREREQUISITES

Required courses:
 • NX Nastran Introduction to Finite Element Analysis with NX (G2H) (NXNAS111)
 • NX Nastran Introduction to Dynamic Analysis with NX (G2H) (NXNAS121)
 • NX Nastran Advanced Dynamic Analysis with NX (G2H) (NXNAS221)

Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of Nastran and Simcenter 3D.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX Nastran 11.0

Advanced Nonlinear

Course Code	NXNAS601-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Advanced Nonlinear** course is a comprehensive presentation of the nonlinear capabilities available in NX Nastran solutions 601 and 701. Nonlinear topics include large displacement, large strain, nonlinear materials (plasticity, hyperelastic), and contact. The supported elements, materials, and boundary conditions are presented along with the formulations and solution schemes. Tips on solving convergence difficulties are also presented. The hands-on activities and case studies are presented using Simcenter Pre/Post for the pre- and post- processor.

WHO SHOULD ATTEND

Users who will be using NX Nastran Advanced Nonlinear to perform nonlinear analyses to predict structural behavior under steady state and transient conditions.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Alternative to course prerequisite is successful completion of the comparable assessment on Learning Advantage (>70%)
 • An understanding of finite element analysis principles
 • Familiarity with NX Nastran input file formats

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Overview of NX Nastran Advanced Nonlinear
 • Model definition elements, materials, boundary conditions, contact
 • Formulations and solution schemes for SOL 601
 • Formulations and solution schemes for SOL 701
 • Element formulations
 • Modeling contact problems
 • Resolving convergence difficulties
 • Case studies and hands-on activities

Course Description

NX Nastran 12.0

Advanced Nonlinear

Course Code	NXNAS601-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Advanced Nonlinear** course is a comprehensive presentation of the nonlinear capabilities available in NX Nastran solutions 601 and 701. Nonlinear topics include large displacement, large strain, nonlinear materials (plasticity, hyperelastic), and contact. The supported elements, materials, and boundary conditions are presented along with the formulations and solution schemes. Tips on solving convergence difficulties are also presented. The hands-on activities and case studies are presented using Simcenter Pre/Post for the pre- and post- processor.

WHO SHOULD ATTEND

Users who will be using NX Nastran Advanced Nonlinear to perform nonlinear analyses to predict structural behavior under steady state and transient conditions.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Alternative to course prerequisite is successful completion of the comparable assessment on Learning Advantage (>70%)
 • An understanding of finite element analysis principles
 • Familiarity with NX Nastran input file formats

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Overview of NX Nastran Advanced Nonlinear
 • Model definition elements, materials, boundary conditions, contact
 • Formulations and solution schemes for SOL 601
 • Formulations and solution schemes for SOL 701
 • Element formulations
 • Modeling contact problems
 • Resolving convergence difficulties
 • Case studies and hands-on activities

Course Description

NX Nastran 10.0

NX Nastran Advanced Nonlinear

Course Code	NXNAS601
User Level	Advanced
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

El curso **NX Nastran Advanced Nonlinear** es una presentación exhaustiva de las capacidades no lineales disponibles en las soluciones NX Nastran 601 y 701. Los temas no lineales incluyen desplazamiento grande, materiales no lineales de gran deformación (plasticidad, Y contacto. Los elementos, materiales y condiciones de contorno soportados se presentan junto con las formulaciones y los esquemas de solución. También se presentan sugerencias para resolver las dificultades de convergencia. Las actividades prácticas y los estudios de casos se presentan utilizando NX Advanced Simulation para el pre y postprocesador.

WHO SHOULD ATTEND

Los usuarios que utilizarán NX Nastran Advanced Nonlinear para realizar análisis no lineales para predecir el comportamiento estructural en estado estacionario y condiciones transitorias.

PREREQUISITES

Required courses:
 • Advanced Simulation Processes and Solutions (TR15032)

 • La alternativa al requisito previo del curso es completar satisfactoriamente la evaluación comparativa en la Ventaja de Aprendizaje (> 70%)
 • Comprensión de los principios de análisis de elementos finitos
 • Familiaridad con los formatos de archivo de entrada NX Nastran

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Overview of NX Nastran Advanced Nonlinear
 • Model definition elements, materials, boundary conditions, contact
 • Formulations and solution schemes for SOL 601
 • Formulations and solution schemes for SOL 701
 • Element formulations
 • Modeling contact problems
 • Resolving convergence difficulties
 • Case studies and hands-on activities

Course Description

NX Nastran 11.0

Advanced Nonlinear

Course Code	NXNAS601
User Level	Advanced
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Advanced Nonlinear </ strong> es una presentación exhaustiva de las capacidades no lineales disponibles en las soluciones NX Nastran 601 y 701. Los temas no lineales incluyen desplazamiento grande, deformación grande, materiales no lineales (plasticidad, hiperelástico) . Los elementos, materiales y condiciones de contorno soportados se presentan junto con las formulaciones y los esquemas de solución. También se presentan sugerencias para resolver las dificultades de convergencia. Las actividades prácticas y los estudios de casos se presentan utilizando Simcenter Pre / Post para el pre y post-procesador. </ P>

WHO SHOULD ATTEND

<P> Los usuarios que utilizarán NX Nastran Advanced Nonlinear para realizar análisis no lineales para predecir el comportamiento estructural en estado estacionario y condiciones transitorias. </ P>

PREREQUISITES

<P>Required courses:</P>
Pre/Post Fundamentals (TR15220)
<P><Ul>
<Li> Alternativa al requisito previo del curso es completar satisfactoriamente la evaluación comparativa sobre Learning Advantage (> 70%) </ li>
<Li> Comprensión de los principios de análisis de elementos finitos </ li>
<Li> Familiaridad con los formatos de archivo de entrada NX Nastran </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of NX Nastran Advanced Nonlinear
• Model definition elements, materials, boundary conditions, contact
• Formulations and solution schemes for SOL 601
• Formulations and solution schemes for SOL 701
• Element formulations
• Modeling contact problems
• Resolving convergence difficulties
• Case studies and hands-on activities

Course Description

Simcenter Testlab 1.0

Digital Signal Processing

Course Code	TR-DSP-US
User Level	Beginner
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Digital Signal Processing (DSP) is the core technology behind today's noise and vibration testing. The techniques used and the associated assumptions along with their strengths and weaknesses will be presented in lecture format, and then re-enforced through active participation of the attendees.

This course presents a hands-on approach to understanding the key elements of digital signal processing which relate to noise and vibration testing. The first part of the course is intended as an introduction or review of Digital Signal Processing for engineers and technicians active in NVH. The rest of the course will focus on state-of-the-art topics and explore the latest and most advanced aspects of digital signal processing.

This course is taught by a university professor knowledgeable in the field. Siemens Simcenter Testlab software products and Siemens Simcenter Scadas data acquisition systems are used to demonstrate principals learned. This course will be taught by Dr. Jason Blough, a professor in the Mechanical Engineering—Engineering Mechanics department at Michigan Technological University.

WHO SHOULD ATTEND	COURSE TOPICS

This seminar is intended for engineers and technicians that want to gain a profound insight in practical aspects and the theories behind the use of data acquisition systems and Fourier analyzers. They will also learn about more advanced time and frequency domain processing techniques.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Sampling/Quantization
• Averaging
• Fourier Transform
• Aliasing
• Windowing
• Time Domain Measurements
• Frequency Domain Measurements
• Digital Filtering
• Rotating Machinery Measurement Techniques
• Fixed Sampling
• Order Tracking
• Kalman Filtering
• Signal Statistics
• Time-Frequency Analysis
•

Course Description

Simcenter Amesim 15.1

Accelerated Hydraulics with LMS Imagine.Lab Amesim
Combination of Getting Started and Hydraulic Systems & Components

Course Code	TR-ILACC
User Level	Beginner
Language	Spanish
Price	$1,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

Comenzando con una descripción general de las capacidades y características de LMS Imagine.Lab Amesim. A continuación, proporcione un conocimiento exhaustivo de los parámetros y las suposiciones esenciales de modelado. Este curso está orientado principalmente a la práctica de LMS Imagine.Lab Amesim y sobre los aspectos teóricos necesarios más comúnmente utilizados para sistemas y componentes hidráulicos.

WHO SHOULD ATTEND

Especialistas técnicos o ingenieros que comienzan a utilizar LMS Imagine.Lab Amesim para el diseño y la simulación de componentes y / o sistemas hidráulicos.

PREREQUISITES

Required courses:
 • (None)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Introducción a LMS Imagine.Lab Amesim
  • Pasos para construir y resolver modelos en LMS Imagine.Lab Amesim
  • Aplicaciones de fluidos
 • La plataforma LMS Imagine.Lab Amesim
  • Construyendo el sistema desde el boceto hasta la simulación
  • Conceptos: componentes multipuerto, reglas de causalidad, convención de signos
   • Bibliotecas estándar: simulación, mecánica, señal y control
   • Descripción general de los menús y opciones
 • Cómo modelar fenómenos físicos elementales
   • Propiedades de fluidos
   • Tasas de flujo en restricciones y líneas
 • Uso de bibliotecas de diseño hidráulico, de resistencia y de componentes
 • Modelos funcionales de sistemas hidráulicos
 • Cómo seleccionar líneas hidráulicas
 • Detalles sobre el uso del concepto de biblioteca HCD para compilar componentes
 • Cree varios modelos de alta fidelidad:
  • sistema de actuador hidráulico
  • estación de energía hidráulica con controles
  • válvula de retención
  • regulador de presión
  • válvula direccional de la válvula de carrete

Course Description

Simcenter Amesim 17.0

Accelerated Hydraulics with Simcenter Amesim

Combination of Getting Started and Hydraulic Systems & Components

Course Code	TR-ILACC
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Beginning with a general overview of Simcenter Amesim capabilities & features. Next provide a comprehensive knowledge of parameters and the essential modeling assumptions. This course is mainly oriented on the practice of Simcenter Amesim and on the theoretical aspects necessary most commonly used for hydraulic systems & components.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Technical Specialists or Engineers who start using Simcenter Amesim for the design & simulation of hydraulic components and / or systems.

PREREQUISITES

Required courses:
 • (none)

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Simcenter and Hydraulic, Hydraulic Component Design, Hydraulic Resistance Libraries or Tokens

COURSE TOPICS

 • Introduction to Simcenter Amesim
  • Steps to build & solve models in Simcenter Amesim
  • Fluid Applications
 • The Simcenter Amesim platform
  • Building the system from sketch up thru simulation
  • Concepts: multi-port components, causality rules, sign convention
  • Standard libraries: Simulation, Mechanical, Signal & Control
  • Overview of the menus & options
 • How to model elementary physical phenomena
  • Fluid properties
  • Flow rates in restrictions & lines
 • Use of Hydraulic, Resistance & Component Design libraries
 • Functional models of hydraulic systems
 • How to select hydraulic lines
 • Specifics of using the HCD library concept to build components
 • Build several high fidelity models:
  • hydraulic actuator system
  • hydraulic power station w/ controls
  • check valve
  • pressure regulator
  • spool valve directional valve

Course Description

Simcenter Amesim 17.0

Aircraft Fuel Systems

Course Code	TR-ILACF
User Level	Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of this training is to provide an overview of how to model & simulate aircraft fuel systems. We will cover topics such as mass and heat transfer, including interactions between different types of fluids & materials, accounting for environment and aircraft attitude and flight dynamics:

• **Solid** materials (heat exchangers, tank structure, pipes…)
• **Liquids** (kerosene, fluid power in heat exchangers…)
• **Gas** (air in the ullage) or Gas Mixtures (variable gas composition in the ullage)

Commonly used components such as tanks, vents, gauges, pumps, pipes, orifices & valves are used in several examples and tutorials.

WHO SHOULD ATTEND

Technical Specialists or Engineers who design aircraft fuel systems or other applications where tanks with complex shape and a large number of orifices (or penetrations) are defined at different heights.

PREREQUISITES

Required courses:
• Getting started (TR-ILGS)

Basic knowledge in thermal fluid systems is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• The Simcenter Amesim Thermal, Thermal Hydraulic, Thermal Hydraulic Component Design and Thermal-Pneumatic libraries
• Multi-fluid, multi-solid and gas mixture capabilities
• Building systems with detailed thermal exchanges
• Half heat exchangers
• Review of elementary physical phenomena represented in Simcenter Amesim
• Thermal properties of solids and fluids (liquids and gas)
• Heat transfers by conduction, convection, radiation
• Dimensionless numbers associated to heat transfers
• Transient thermal phenomena
• Detailed description of thermal components
• Enthalpy flow rates / isenthalpic assumption in restrictions
• Illustration with basic practical examples

Course Description

Simcenter Amesim 15.2

Advanced - Productivity Tools for System Design
Improve your efficiency and quality

Course Code	TR-ILADV
User Level	Beginner to Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

As an addition to the LMS Imagine.Lab Amesim/Amerun- Getting Started training course, this course is dedicated to the advanced LMS Imagine.Lab Amesim capabilities and features to help you become even more productive with the LMS Imagine.Lab Amesim suite. You will learn how to be more productive with the optimal use of the product and its applications. This course is illustrated by many relevant examples.

WHO SHOULD ATTEND

Technical specialists or Engineers who have a basic knowledge of LMS Imagine.Lab Amesim and who want to take a step forward by using the productivity features available in the LMS Imagine.Lab Amesim suite.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should have completed the 'Getting Started' training course or have basic working knowledge of LMS Imagine.Lab Amesim.
 We recommend a few months of experience in the use of LMS Imagine.Lab AMESim between the two training courses.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Using LMS Imagine.Lab AMECustom
 • Introduction to the Linear Analysis tools: Eigen Values, Frequency Response and Mode Shape
 • Activity index
 • Design Exploration Tools, the optimization tools
 • LMS Imagine.Lab Amesim Interfaces: Matlab/Simulink, Excel, Generic Interface
 • AMETable table editor

Course Description

Simcenter Amesim 17.0

Building Custom Apps

Improve your Efficiency and Quality with Automation

Course Code	TR-ILAPP-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

As an addition to the Simcenter Amesim/Amerun- Getting Started training course, this course is dedicated to the presentation of the AppDesigner tool presented in the Amesim platform.

Learn how to improve the efficiency and productivity of their day-to-day work using Simcenter Amesim.

WHO SHOULD ATTEND

Technical specialists or Engineers who have a basic knowledge and who want to take a step forward by using the advanced features available in the Simcenter Amesim suite.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should have completed the 'Getting Started' training course or have basic knowledge of Simcenter Amesim along with basic knowledge of Python Language.
 We recommend a few months of experience in the use of Simcenter AMESim between the two training courses.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Using Simcenter App Designer
 • Introduction to App Designer Tool
   • Introduction to the Simcenter Amesim Widgets
   • Introduction to the User Interface (UI) Development within App Designer
   • Linking Simcenter Amesim components with UI
 • Running Apps in Amesim and Standalone modes
 • Overview of Different API's
 • Circuit API
 • Scripting API
 • Embedded API

Course Description

Simcenter Amesim 15.2

Cooling Systems Simulation

Course Code	TR-ILCS-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

We'll provide details of the modeling of cooling systems and heat exchanger stacks in order to better understand and simulate their physical behavior.
 This course combines theoretical aspects together with relevant practical examples.

WHO SHOULD ATTEND

Technical Specialists or Engineers who are in charge of the design and analysis of cooling systems and heat exchanger stacks and who want to enhance their expertise in the domain with the support of LMS Imagine.Lab Amesim.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

This course requires knowledge in the thermal aspects and exchanges with LMS Imagine.Lab Amesim.
  We recommend participants first complete the training course on the design of thermal fluid systems.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Introduction
 • Presentation of the thermal, thermal-hydraulic and cooling system libraries
 • Components
  • Centrifugal pump, thermostat, heater core component, immersion heater, oil-coolant heat exchanger, EGR heat exchanger
 • Engine components and radiator components
 • Condenser and compressor
  • Modeling a simple cooling system
 • How to build an equivalent model for the engine sub model using basic elements?
 • Presentation of the heat library
 • Main features: velocity mode and pressure mode
   The main components of the heat exchangers:
    • Type: liquid/gas
 • Heat exchange models: simple heat flux / NTU-based method, geometry based
 • Configuration (internal fluid): simple or multipass - inlet
 • Pre/Post processing functionalities
 • Coupling with Powerflow
 • Examples

Course Description

Simcenter Amesim 17.0

Environmental Control Systems

Course Code	TR-ILECS-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This training helps engineers model and analyze the optimal environmental control system that makes air breathable and comfortable - in terms of pressure, temperature, flow and humidity. Application areas include passenger and crew comfort optimization in vehicles, such as airplanes, ships, submarines and trains.

The training handles multi-disciplinary and environmental control systems for advanced design applications.

WHO SHOULD ATTEND

Technical Specialists or Engineers in charge of the design and analysis of Environmental Control Systems, who want to enhance their expertise in the domain with the support of Simcenter Amesim.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

This course requires the knowledge in the thermal aspects, Moist Air and Gas Mixture with Simcenter Amesim.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Introduction
 • Presentation of the Thermal, Thermal-Hydraulic and Cooling Systems libraries
 • Presentation of the different components in an ECS system
 • Bleed air system, cabin, crew
 • Engine and radiator components
 • Condenser and Compressor
 • Modeling of a bleed air system

Course Description

Simcenter Amesim 17.0

Electric Motors and Drives

Course Code	TR-ILEMD-GH
User Level	Beginner to Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.</p>

<p>This training course focuses on electrical machines and their control and is designed to provide all the elements necessary in building optimal models. We'll provide the assumptions and specifics of the Simcenter Amesim libraries dedicated to electrical

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Technical Specialists or Engineers who are starting to use Simcenter Amesim for simulation and analysis of electric motors and drives.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should have completed the 'Getting Started' training course or have basic knowledge of Simcenter Amesim. In addition, knowledge in electrical systems is required.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Using components from the Electrical Basics Library (EB)
• Theoretical background in motor models
 • Electricity and magnetism
 • Motor dynamic equations (DC, synchronous, induction)
 • Command electronics
 • Batteries
 • Illustration with basic practical examples
• Theoretical background in power electronics
 • Rectifiers
 • Inverters
 • Choppers
 • Illustration with basic practical examples
• Advanced examples
 • DC motor and battery
 • Self commutated synchronous machine
 • Synchronous machine hysteresis control
 • Synchronous machine vector control
 • Start of induction machine

Course Description

Simcenter Amesim 16.0

Getting started
with Amesim and Amerun

Course Code	TR-ILGS
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This training introduces new users of Simcenter Amesim to the structure and the use of the software as well as the modelling and simulation process.

WHO SHOULD ATTEND

Technical Specialists or Engineers who start using Simcenter Amesim and/or AMERun.

PREREQUISITES

• Engineering or scientific background
• Experience with basic computer operation is required

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Presentation of Simcenter Amesim
 • Positioning
 • Behind Simcenter Amesim
 • The applications
• The Simcenter Amesim environment
 • Building the first system in Simcenter Amesim from sketch up to simulation
 • Important concepts behind Simcenter Amesim: multiport approach, causality rules, sign convention
 • Standard libraries: Mechanical and Control
 • Overview of the different basic menus and options
• Other features
 • Plotting capabilities
 • Batch runs
 • Parameter settings
 • Simulation options

Course Description

Simcenter Amesim 17.0

Getting started
with Amesim and Amerun

Course Code	TR-ILGS
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This training introduces new users of Simcenter Amesim to the structure and the use of the software as well as the modelling and simulation process.

WHO SHOULD ATTEND

Technical Specialists or Engineers who start using Simcenter Amesim and/or AMERun.

PREREQUISITES

• Engineering or scientific background
• Experience with basic computer operation is required

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Presentation of Simcenter Amesim
 • Positioning
 • Behind Simcenter Amesim
 • The applications
• The Simcenter Amesim environment
 • Building the first system in Simcenter Amesim from sketch up to simulation
 • Important concepts behind Simcenter Amesim: multiport approach, causality rules, sign convention
 • Standard libraries: Mechanical and Control
 • Overview of the different basic menus and options
• Other features
 • Plotting capabilities
 • Batch runs
 • Parameter settings
 • Simulation options

Course Description

Simcenter Amesim 15.2

Introduction to Hydraulic System Simulation

Course Code	TR-ILHYD1
User Level	Intermediate
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of this training is to provide you with a first overview and sound background in the hydraulic simulation capabilities of the LMS Imagine.Lab Amesim hydraulic libraries. The Hydraulic (HYD) and Hydraulic Resistance (HR) libraries are introduced to the participant with numerous practical examples and exercises.

This training forms the basis for the *LMS Imagine.Lab Amesim - Hydraulic Components and Systems* training.

WHO SHOULD ATTEND

Technical Specialists or Engineers who start using LMS Imagine.Lab Amesim for the design of their hydraulic components and systems

PREREQUISITES

All participants should have completed the 'Getting Started' training course or have basic knowledge of LMS Imagine.Lab Amesim

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Presentation of the Hydraulic Library HYD
• Presentation of the Hydraulic Resistance Library HR
• Short presentation of hydraulic lines (water hammer)
   Example of exercises :
  • Hydrostatic transmission
• Mechatronic model (position control loop presentation)
• Radial piston pump model (with ideal valves)
• Short presentation of HR (bushing, Nikuradse & Venturi)

Course Description

Simcenter Amesim 16.0

Introduction to Hydraulic System Simulation

Course Code	TR-ILHYD1
User Level	Intermediate
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of this training is to provide you with a first overview and sound background in the hydraulic simulation capabilities of the Simcenter Amesim hydraulic libraries. The Hydraulic (HYD) and Hydraulic Resistance (HR) libraries are introduced to the participant with numerous practical examples and exercises.

This training forms the basis for the *Simcenter Amesim - Hydraulic Components and Systems* training.

WHO SHOULD ATTEND

Technical Specialists or Engineers who start using Simcenter Amesim for the design of their hydraulic components and systems

PREREQUISITES

All participants should have completed the 'Getting Started' training course or have basic knowledge of Simcenter Amesim

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Presentation of the Hydraulic Library HYD
• Presentation of the Hydraulic Resistance Library HR
• Short presentation of hydraulic lines (water hammer)

Example of exercises :

• Hydrostatic transmission
• Mechatronic model (position control loop presentation)
• Radial piston pump model (with ideal valves)
• Short presentation of HR (bushing, Nikuradse & Venturi)

Course Description

Simcenter Amesim 15.2

Advanced Hydraulic System Simulation

Course Code	TR-ILHYD2
User Level	Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

All you need to know to simulate hydraulic systems and components will be taught to you, ranging from providing you a comprehensive understanding of the parameters and essential modeling assumptions involved, to the practical use of LMS Imagine.Lab Amesim to design and analyse.

WHO SHOULD ATTEND

Technical Specialists or Engineers who start using LMS Imagine.Lab Amesim for the design of their hydraulic components and / or systems.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

Attendees of the course must have completed the initial training course or have basic knowledge of LMS Imagine.Lab Amesim.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • The handling of elementary physical phenomena in LMS Imagine.Lab Amesim
   • Fluid properties
   • Flow rates in restrictions
 • The Hydraulic Library and the Hydraulic Component Design (HCD) Library
   • Functional models in the Hydraulic library
   • Using components from the Hydraulic Library
   • Specificities of the HCD Library concept
   • Building hydraulic components using the HCD Library
 • Hydraulic lines
 • Illustration with practical examples

Course Description

Simcenter Amesim 16.0

Advanced Hydraulic System Simulation

Course Code	TR-ILHYD2
User Level	Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

All you need to know to simulate hydraulic systems and components will be taught to you, ranging from providing you a comprehensive understanding of the parameters and essential modeling assumptions involved, to the practical use of Simcenter Amesim to design and analyse.

WHO SHOULD ATTEND

Technical Specialists or Engineers who start using Simcenter Amesim for the design of their hydraulic components and / or systems.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

Attendees of the course must have completed the initial training course or have basic knowledge of Simcenter Amesim.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • The handling of elementary physical phenomena in Simcenter Amesim
   • Fluid properties
   • Flow rates in restrictions
 • The Hydraulic Library and the Hydraulic Component Design (HCD) Library
   • Functional models in the Hydraulic library
   • Using components from the Hydraulic Library
   • Specificities of the HCD Library concept
   • Building hydraulic components using the HCD Library
 • Hydraulic lines
 • Illustration with practical examples

Course Description

Simcenter Amesim 15.2

Internal Combustion Engine Simulation

Course Code	TR-ILICE-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

We'll teach you how to model internal combustion engines within LMS Imagine.Lab Amesim using components from the IFP-Engine Library.
 This training course presents the link with the engine control (plant modeling) and the possibilities offered for control design and validation. It also gives an introduction to engine performance analysis using the CFD1D library and to coupling with other subsystems such as transmission, cooling or injection for system integration.

WHO SHOULD ATTEND

Technical Specialists or Engineers who are starting to use LMS Imagine.Lab Amesim for the simulation and analysis of Internal Combustion Engines.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should have completed the 'Getting Started' training course or have basic knowledge of LMS Imagine.Lab Amesim.
 In addition, knowledge in engine technologies is required.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• The IFP Engine library and its components
• Global parameters & gas properties description
• Components for engine modeling
• Combustion models for:
 • Spark ignition engines (gasoline, flex-fuels…)
 • Compression ignition (diesel)
• The combustion model fitting tools
• Plant modeling and real time
• Introduction to CFD1D for engine performance
• Engine integration within the vehicle:
 • Transmission system
 • Injection system
 • Engine thermal management
 • Connection with IFP-Drive

Course Description

Simcenter Amesim 15.2

Interfaces: Matlab/Simulink, Excel, Generic interface

Course Code	TR-ILINT
User Level	Beginner to Intermediate
Language	English
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

We'll provide an overview of some useful interfaces available in LMS Imagine.Lab Amesim. Matlab, Visual Basic and Scilab scripts used to control LMS Imagine.Lab Amesim are described in this session.

The LMS Imagine.Lab Amesim/Simulink interface as well as a generic interface are explained.

WHO SHOULD ATTEND

Technical Specialists or Engineers who:

 • want to control LMS Imagine.Lab Amesim from Matlab, Scilab or a Visual Basic for Applications script
 • have a need to interface LMS Imagine.Lab Amesim with Simulink to couple their plant model developed in LMS Imagine.Lab Amesim with their control system done in Simulink

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

Knowledge of Matlab/Simulink and Excel is required.

It is also advisable to follow first the training LMS Imagine.Lab Amesim/Amerun - Getting Started

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Controlling LMS Imagine.Lab Amesim from Matlab, Scilab or Excel (VBA scripts)
  • Changing parameters
  • Running a simulation
  • Getting LMS Imagine.Lab Amesim results
 • Other utilities in Matlab and Scilab
  • Importing and Exporting a linear system (A, B, C, D matrices) from and to Matlab in LMS Imagine.Lab Amesim
  • Example of optimization
 • The LMS Imagine.Lab Amesim/Simulink interface
  • Code export (generation of a compiled dll)
 • Co-simulation
  • Generic interface
  • Coupling LMS Imagine.Lab Amesim with an external application

Course Description

Simcenter Amesim 17.0

2D Multi Body System Modeling

Course Code	TR-ILMBS-GH
User Level	Beginner to Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

We'll provide a good understanding of the assumptions and specificities used in the modeling of 2D planar mechanical systems with Simcenter Amesim.

WHO SHOULD ATTEND

Technical Specialists or Engineers who are starting to use Simcenter Amesim for simulation and analysis of 2-dimensional mechanical systems in translation and rotation.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should have completed the 'Getting Started' training course or have basic knowledge of Simcenter Amesim.. In addition, basic knowledge of mechanical systems is required.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• The Planar Mechanical Library
• The different joint models illustrated with examples
 • Prismatic joint
 • Rotary joint
 • Slotted lin
 • The jack element
• The bodies
 • Coordinate systems (absolute and relative)
 • Definition of the center of gravity and junction points
 • Initial constraints/DOF
• The system assembly process
• Connection to components from the Mechanical Library
• Connection to hydraulic actuators
• The library and the linear analysis
• AMEAnimation : the integrated visualization and animation tool
 • Review of elementary physical phenomena represented in Simcenter Amesim
 • Equations of constraint
• Illustration with basic practical examples
 • Digger
 • Connecting rod

Course Description

Simcenter Amesim 17.0

Planar Mechanical

Course Code	TR-ILPM
User Level	Beginner to Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

We'll provide a good understanding of the assumptions and specificities used in the modeling of planer mechanical systems with Simcenter Amesim.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Technical Specialists or Engineers who are starting to use Simcenter Amesim for simulation and analysis of 2-dimensional mechanical systems in translation and rotation.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should have completed the 'Getting Started' training course or have basic knowledge of Simcenter Amesim.. In addition, basic knowledge of mechanical systems is required.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• The Planar Mechanical Library
• The different joint models illustrated with examples
 • Prismatic joint
 • Rotary joint
 • Slotted lin
 • The jack element
• The bodies
 • Coordinate systems (absolute and relative)
 • Definition of the center of gravity and junction points
 • Initial constraints/DOF
• The system assembly process
• Connection to components from the Mechanical Library
• Connection to hydraulic actuators
• The library and the linear analysis
• AMEAnimation : the integrated visualization and animation tool
 • Review of elementary physical phenomena represented in Simcenter Amesim
 • Equations of constraint
• Illustration with basic practical examples
 • Digger
 • Connecting rod

Course Description

Simcenter Amesim 15.2

Ameset Development Tool
Development of Custom Sub Models

Course Code	TR-ILSET-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

We'll guide the user through the development of custom sub models with Ameset and teach the different Amesim-related coding specificities to ensure maximum compatibility with the Amesim standard components.

WHO SHOULD ATTEND

Technical Specialists or Engineers interested in creating Amesim custom components by writing their own C or Fortran code.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

A good knowledge of Amesim and its components
 Knowledge in C or Fortran programming.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• The Amesim library structure: files, directories, path list
• Brief review of numerical methods
• Behind an LMS Imagine.Lab Amesim sub model
 • Types of variables
 • Ports
 • Parameters
 • Units
 • Initialization and calculation sections
• Using Ameset
 • Menus
 • Designing an icon / importing a picture
 • Creating a new category / library
 • Creating / modifying a sub model
• Advanced topics
 • Discontinuity handling

Course Description

Simcenter Amesim 17.0

Thermal Fluid System Simulation

Course Code	TR-ILTH
User Level	Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

We will provide a good understanding of the thermal aspects and exchanges that can be added to any fluid system in interaction with the environment and/or any material participating to the different heat transfers.

For more details on the purely hydraulic or pneumatic aspects please refer to the courses on Hydraulic or Pneumatic Systems.

WHO SHOULD ATTEND

Technical Specialists or Engineers who need to take into account thermal phenomena in the simulation and the analysis of their hydraulic or pneumatic systems and components.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

It is recommended to have followed the training

 • Simcenter Amesim - Hydraulic Systems
 • Pneumatic Systems and Components

Basic knowledge in thermal fluid systems is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • The Simcenter Amesim Thermal, Thermal Hydraulic, Thermal Hydraulic Component Design and Thermal-Pneumatic libraries
 • Multi-fluid, multi-solid and gas mixture capabilities
 • Building systems with detailed thermal exchanges
 • Half heat exchangers
 • Review of elementary physical phenomena represented in Simcenter Amesim
 • Thermal properties of solids and fluids (liquids and gas)
 • Heat transfers by conduction, convection, radiation
 • Dimensionless numbers associated to heat transfers
 • Transient thermal phenomena
 • Detailed description of thermal components
 • Enthalpy flow rates / isenthalpic assumption in restrictions
 • Illustration with basic practical examples

Course Description

Simcenter Amesim 15.2

Two-phase Flow and Refrigerant Loops Systems

Course Code	TR-ILTPF-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

During this course, which applies to air conditioning system design, we'll teach you how to handle two-phase fluid flows in LMS Imagine.Lab Amesim as well as external exchanges with moist air.
 You'll be guided through the modeling and design of two -phase flow systems using the Two Phase Flow Library.

WHO SHOULD ATTEND

Technical Specialists or Engineers who are starting to use LMS Imagine.Lab Amesim for simulation and analysis of transients in systems where phase changes occur, who want to model the dynamic or static behavior of typical refrigerant loops.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should have completed the 'Getting Started' training course or have basic knowledge of LMS Imagine.Lab Amesim.
 In addition, knowledge of two-phase flow phenomena and related systems is required.
 We recommend participants first complete the training course on the design of thermal fluid systems.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • The Thermal and Two-Phase Flow libraries
 • Internal flow
 • External flow with moist air
 • Heat exchanges
 • Review of elementary physical phenomena represented in LMS Imagine.Lab Amesim
 • Fluid properties (state equation)
 • P-V diagram
 • Fluid states / Boundary conditions
 • Regular and singular pressure drop components
 • Energy transport
 • Illustration with practical examples

Course Description

Simcenter Amesim 17.0

Transmission System Simulation

Course Code	TR-ILTR
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This training enables the designer to address the various physical phenomena involved in powertrain system simulation. The participant is guided through the design and analysis of transmission systems and components from the engine up to the wheels.

WHO SHOULD ATTEND

Technical Specialists or Engineers who are starting to use Simcenter Amesim for the design of their transmission systems.

PREREQUISITES

Required courses:
 • Getting started (TR-ILGS)

All participants should havecompleted the 'Getting Started' training course or have basic knowledge of Simcenter Amesim.

In addition, knowledge in mechanical systems is required.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to the Powertrain Library
• Sign conventions
• End stops
• Friction models
• Clutches and brakes
• Tires
• Gear trains -planetary gear train –idle gear models
• Bearings
• Gears and bearings thermal models
• Torque conversion elements (Torque converter, CVT)
• Synchronizer
• Contact models
• Vehicle models
• Engine models
• 2D and 3D models

Course Description

Simcenter Testlab 18.0

Introduction to Structures and Rotating Machinery
Insights into System Dynamics with Test-Based Engineering

Course Code	TR-TL-2DAY
User Level	Beginner
Language	English
Price	(Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will become familiar with the basics of how to operate LMS Test.Lab and how to use it for Experimental Modal Analysis (EMA) and the analysis of rotating machinery.
We will use an industrial example to walk you through the LMS Test.Lab Structures and Rotating Machinery families.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

The course is intended for engineers and technicians that need to learn how to use LMS Test.Lab for experimental modal analysis and rotating machinery analysis or that want to learn about its capabilities.

COURSE TOPICS

• Desktop: Data visualization
• Geometry
• Modal Impact Testing
• Modal Analysis
• Signature Testing
• Signature Throughput Processing
• Time Signal Calculator

PREREQUISITES

We recommend a basic knowledge of vibration measurements, structural dynamics and a basic understanding of digital signal processing and rotating machinery.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter Testlab 15

Automation

Improve your Efficiency and Quality

Course Code	TR-TLAUT
User Level	Beginner
Language	Spanish
Price	$1,350.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

En este curso, utilizará Windows Automation y Visual .Net para automatizar LMS Test.Lab para aumentar sus funcionalidades. Aprenderá cómo comunicarse y crear complementos para LMS Test.Lab . Lo guiaremos a través de escribir una aplicación y ejecutar Test.Lab como una aplicación de servidor. También aprenderá cómo escribir sus propios programas utilizando los componentes de construcción LMS Test.Lab.

WHO SHOULD ATTEND

This course is intended for engineers and technicians that want to make their own LMS Test.Lab based applications as well as for IT professionals who would like to make customizations of LMS Test.Lab.

PREREQUISITES

Attendees of the course must be able to write their own simple Visual Basic programs. We recommend that you are familiar with LMS Test.Lab.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• General introduction
• Displays and printing
• Access to and processing of LMS Test.Lab data
• Automating an acquisition
• Module loader: Using LMS Test.Lab components in your own program
• Advanced use of internal structures (Enumeration types / IData / Attributemap)
• How to include your program in a LMS Test.Lab worksheet, how to use the manual
• Exercises: each customer will be able to create his/her LMS Test.Lab automation project or work on their existing one

Course Description

Simcenter Testlab 17

Automation

Improve your Efficiency and Quality

Course Code	TR-TLAUT
User Level	Beginner
Language	Spanish
Price	$1,350.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

En este curso, utilizará Windows Automation y Visual .Net para automatizar LMS Test.Lab para aumentar sus funcionalidades. Aprenderá cómo comunicarse y crear complementos para LMS Test.Lab . Lo guiaremos a través de escribir una aplicación y ejecutar Test.Lab como una aplicación de servidor. También aprenderá cómo escribir sus propios programas utilizando los componentes de construcción LMS Test.Lab.

WHO SHOULD ATTEND

This course is intended for engineers and technicians that want to make their own LMS Test.Lab based applications as well as for IT professionals who would like to make customizations of LMS Test.Lab.

PREREQUISITES

Attendees of the course must be able to write their own simple Visual Basic programs. We recommend that you are familiar with LMS Test.Lab.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • General introduction
 • Displays and printing
 • Access to and processing of LMS Test.Lab data
 • Automating an acquisition
 • Module loader: Using LMS Test.Lab components in your own program
 • Advanced use of internal structures (Enumeration types / IData / Attributemap)
 • How to include your program in a LMS Test.Lab worksheet, how to use the manual
 • Exercises: each customer will be able to create his/her LMS Test.Lab automation project or work on their existing one

Course Description

Simcenter Testlab 18.0
Automation
Improve your Efficiency and Quality

Course Code	TR-TLAUT
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this course you will use Windows Automation and Visual .Net to automate LMS Test.Lab to increase its functionalities.
  You will learn how to communicate with and create add-ins for LMS Test.Lab. We will guide you through writing an application and running Test.Lab as a server application. You will also learn how to write your own programs using LMS Test.Lab building components.

WHO SHOULD ATTEND

This course is intended for engineers and technicians that want to make their own LMS Test.Lab based applications as well as for IT professionals who would like to make customizations of LMS Test.Lab.

PREREQUISITES

Attendees of the course must be able to write their own simple Visual Basic programs. We recommend that you are familiar with LMS Test.Lab.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • General introduction
 • Displays and printing
 • Access to and processing of LMS Test.Lab data
 • Automating an acquisition
 • Module loader: Using LMS Test.Lab components in your own program
 • Advanced use of internal structures (Enumeration types / IData / Attributemap)
 • How to include your program in a LMS Test.Lab worksheet, how to use the manual
 • Exercises: each customer will be able to create his/her LMS Test.Lab automation project or work on their existing one

Course Description

Simcenter Testlab 18.0
Automation
Improve your Efficiency and Quality

Course Code	TR-TLAUT
User Level	Beginner
Language	Spanish
Price	$1,350.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

En este curso, utilizará Windows Automation y Visual .Net para automatizar LMS Test.Lab para aumentar sus funcionalidades. Aprenderá cómo comunicarse y crear complementos para LMS Test.Lab . Lo guiaremos a través de escribir una aplicación y ejecutar Test.Lab como una aplicación de servidor. También aprenderá cómo escribir sus propios programas utilizando los componentes de construcción LMS Test.Lab.

WHO SHOULD ATTEND

This course is intended for engineers and technicians that want to make their own LMS Test.Lab based applications as well as for IT professionals who would like to make customizations of LMS Test.Lab.

PREREQUISITES

Attendees of the course must be able to write their own simple Visual Basic programs. We recommend that you are familiar with LMS Test.Lab.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• General introduction
• Displays and printing
• Access to and processing of LMS Test.Lab data
• Automating an acquisition
• Module loader: Using LMS Test.Lab components in your own program
• Advanced use of internal structures (Enumeration types / IData / Attributemap)
• How to include your program in a LMS Test.Lab worksheet, how to use the manual
• Exercises: each customer will be able to create his/her LMS Test.Lab automation project or work on their existing one

Course Description

Simcenter Testlab 15.0

Data Acquisition - Best Practices

Course Code **TR-TLDA**
User Level **Beginner**
Language **English**
Price **$1,100.00 (USD) (Price may not include taxes applicable to your billing region)**
Training Center Duration **2 Days**

For More Information **Learning Services, USA (training.usa.plm@siemens.com)**

This product training is geared towards the test technician who needs to operate LMS Test.Lab to acquire data.
The focus will be on data acquisition and verification. Tutorials will be used to demonstrate software use.

WHO SHOULD ATTEND	COURSE TOPICS

The course is intended for technicians that need to learn how to use LMS Test.Lab for data acquisition.

 • Introduction to the LMS Test.Lab platform and general Desktop functionalities
 • Impact Testing
 • Spectral Testing + Source Control
 • Time Recording (Throughput Acquisition)
 • Signature Testing
 • Order Tracking

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

Course Description

Simcenter Testlab 16.0

Data Acquisition - Best Practices
Geared towards the Test Technician

Course Code	TR-TLDA
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This product training is geared towards the test technician who needs to operate LMS Test.Lab to acquire data.
The focus will be on data acquisition and verification. Tutorials will be used to demonstrate software use.

WHO SHOULD ATTEND

The course is intended for technicians that need to learn how to use LMS Test.Lab for data acquisition.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to the LMS Test.Lab platform and general Desktop functionalities
• Impact Testing
• Spectral Testing + Source Control
• Time Recording (Throughput Acquisition)
• Signature Testing
• Order Tracking

Course Description

Simcenter Testlab 17.0

Data Acquisition - Best Practices for the Test Technician
Geared towards the Test Technician

Course Code	TR-TLDA
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This product training is geared towards the test technician who needs to operate LMS Test.Lab to acquire data.
The focus will be on data acquisition and verification. Tutorials will be used to demonstrate software use.

WHO SHOULD ATTEND	COURSE TOPICS

The course is intended for technicians that need to learn how to use LMS Test.Lab for data acquisition.

• Introduction to the LMS Test.Lab platform and general Desktop functionalities
• Impact Testing
• Spectral Testing + Source Control
• Time Recording (Throughput Acquisition)
• Signature Testing
• Order Tracking

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter Testlab 18.0

Data Acquisition - Best Practices for the Test Technician
Geared towards the Test Technician

Course Code	TR-TLDA
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This product training is geared towards the test technician who needs to operate LMS Test.Lab to acquire data.
The focus will be on data acquisition and verification. Tutorials will be used to demonstrate software use.

WHO SHOULD ATTEND

The course is intended for technicians that need to learn how to use LMS Test.Lab for data acquisition.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to the LMS Test.Lab platform and general Desktop functionalities
• Impact Testing
• Spectral Testing + Source Control
• Time Recording (Throughput Acquisition)
• Signature Testing
• Order Tracking

Course Description

Simcenter Testlab 18.0

Durability Data Acquisition & Processing
Understanding your road loads

Course Code	TR-TLDUR
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This product training will walk through setting up a measurement campaign for road load data and other durability data acquisition.
 You will learn how to use LMS Test.Lab for the acquisition and analysis of road load data through real-life exercises. We will review the basics of signal analysis and teach you hands on how to perform measurements and process the results. We will show you how to report your results as well.

WHO SHOULD ATTEND

Engineers and technicians who need to learn how to use LMS Test.Lab for durability data acquisition and analysis or want to learn about its capabilities.

PREREQUISITES

We recommend a basic understanding of load data acquisition and sensor setup.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Durability Workbooks General Aspects - Navigating the Interface
 • LMS Test.Lab Durability Desktop - Data visualization
 • Durability Data Acquisition - Setting up the Measurement Campaign and Exporting the Data
 • Channel Setup - setting up and using a variety of strain gauge based sensors.
 • Setting up Vehicle CANBus or OBDII channels for acquisition.
 • Durability Counting Functions - Rainflow, Range Pair, level Crossing and Time at Level
 • Time Signal Editing & Throughput Processing
 • Durability Process Designer - Defining an Analysis workflow
 • Data Reporting

Course Description

Simcenter Testlab 18.0
Environmental Testing
Vibration Control

Course Code	TR-TLENV
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will become familiar with the basics of how to operate LMS Test.Lab and how to set up a closed loop vibration control test, execute it, and process the results.
 Setting up, acquiring, processing and reporting will be covered while testing an industrial structure.
You will also become familiar with the background of closed loop vibration testing and we will teach you how to use Data Reduction in parallel with a vibration control system.

WHO SHOULD ATTEND

The course is intended for users that need to learn how to operate LMS Test.Lab for closed loop vibration control testing and for engineers and managers that want to learn about the LMS Test.Lab Environmental products.

PREREQUISITES

We recommend a basic knowledge of vibration measurements.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Introduction to the LMS Test.Lab platform and general Desktop functionalities
 • Introduction to Environmental Testing
 • Sine Vibration Control: background, theory, implementation in the Test.Lab software and exercise
 • LMS Test.Lab Batch Printing
 • Tracked Sine Dwell: background, theory, implementation in the Test.Lab software and exercise
 • Random Vibration Control: background, theory, implementation in the Test.Lab software and exercise
 • Combined Modes: background, theory, implementation in the Test.Lab software and exercise
 • Shock Vibration Control: background, theory, implementation in the Test.Lab software and exercise
 • Shock Response Synthesis and Analysis: background, theory, implementation in the Test.Lab software and exercise
 • Data Reduction: background, implementation in the Test.Lab software and exercise
 • Automating and scheduling sequences of vibration control tests with LMS Test.Lab Test Sequencing
 • Comparing results with LMS Test.Lab Compare Runs

Course Description

Simcenter Testlab 17

HD Acoustic Array Testing & Analysis
Sound Source Localization (SSL)

Course Code	TR-TLHDCM
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

 Los asistentes a este curso aprenderán a usar LMS Test.Lab HD Acoustic Array para la Localización de la Fuente de Sonido (SSL).
 La clase incluirá adquisición de datos y análisis utilizando técnicas avanzadas de arreglos de micrófonos como como conformación de haz, focalización y holografía acústica de campo cercano irregular (iNAH).

 Después de algunas conferencias sobre información general de antecedentes y teoría, aprenderá cómo usar el producto a través de ejercicios sobre ejemplos prácticos y a través de la aplicación de varios conceptos. Los tutoriales se utilizarán para demostrar el uso del software.

WHO SHOULD ATTEND

Engineers and technicians who need to learn how to use LMS Test.Lab HD Acoustic Array or want to learn about its capabilities.

PREREQUISITES

We recommend a basic understanding of Noise and Vibration measurements.
Attendees are encouraged to bring their own array hardware for this training.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Introduction to the LMS Test.Lab platform and general Desktop functionalities
 • Review of Sound Source Localization (SSL)Theory
 • Instrumentation, setup, measurement, validation, analysis and post processing with LMS Test.Lab HD Acoustic Array hardware and software
 • Hands-on tutorials for HD Array data analysis to demonstrate various concepts listed below:
   • Basic operations - Localization map visualization, Sound playback
   • Trade-offs between beamforming, focalization and iNAH through practical examples
   • Order Tracking analysis
   • Sound Power calculation (iNAH)
   • Coherent averaging
   • Deconvolution – iterative beamforming technique
   • Separation of combustion and mechanical noise
   • SSL of rotating sound sources (e.g., fan blades)
   • SSL for Wind Tunnel Testing

Course Description

Simcenter Testlab 18.0

HD Acoustic Array Testing & Analysis

Sound Source Localization (SSL)

Course Code	TR-TLHDCM
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Attendees of this course will learn how to use LMS Test.Lab HD Acoustic Array for Sound Source Localization (SSL). The class will involve data acquistion as well as analysis using advanced microphone array techniques such as Beamforming, Focalization and irregular Nearfield Acoustic Holography (iNAH).

Following some lectures on general background information and theory, you will learn how to use the product through exercises on practical examples and go through application of various concepts. Tutorials will be used to demonstrate software use.

WHO SHOULD ATTEND

Engineers and technicians who need to learn how to use LMS Test.Lab HD Acoustic Array or want to learn about its capabilities.

PREREQUISITES

We recommend a basic understanding of Noise and Vibration measurements.
Attendees are encouraged to bring their own array hardware for this training.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Introduction to the LMS Test.Lab platform and general Desktop functionalities
 • Review of Sound Source Localization (SSL)Theory
 • Instrumentation, setup, measurement, validation, analysis and post processing with LMS Test.Lab HD Acoustic Array hardware and software
 • Hands-on tutorials for HD Array data analysis to demonstrate various concepts listed below:
   • Basic operations - Localization map visualization, Sound playback
   • Trade-offs between beamforming, focalization and iNAH through practical examples
   • Order Tracking analysis
   • Sound Power calculation (iNAH)
   • Coherent averaging
   • Deconvolution – iterative beamforming technique
   • Separation of combustion and mechanical noise
   • SSL of rotating sound sources (e.g., fan blades)
   • SSL for Wind Tunnel Testing

Course Description

Simcenter Testlab 18.0

Rotating Machinery - Basics

Understanding the dynamic 'Signature' of your system

Course Code	TR-TLROT
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This product training will walk through an industrial example with resonances and order information.
 You will learn how to use LMS Test.Lab for the analysis of rotating machinery harmonics through real-life exercises. We will review the basics of harmonic analysis and teach you hands on how to perform measurements and process the results. We will show you how to animate mechanical structures using the acquired data as well as how to process previously acquired data.

WHO SHOULD ATTEND

Engineers and technicians who need to learn how to use LMS Test.Lab for Rotating Machinery analysis or want to learn about its capabilities.

PREREQUISITES

We recommend a basic understanding of Noise and Vibration measurements on rotating machinery.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Review of Digital Signal Processing (DSP)
• LMS Test.Lab Desktop: Data visualization
• Review of signature & order analysis theory
• LMS Test.Lab Signature Testing
• Post-Processing
• Time Signal Editing & Throughput Processing
• Advanced & Automated reporting
• Structural Analysis
• Geometry
• Operational Deflection Shapes & Time Animation
• Offline RPM Extraction
• PWM application

Course Description

Simcenter Testlab 18.0

Rotating Machinery - Advanced

Angle Domain Processing, Real Time Octaves and Torsional Vibration Analysis

Course Code	TR-TLROTA
User Level	Intermediate
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This product training will explain the principals behind and the sofware use of LMS Test.Lab for angle domain processing of rotating components, using Real Time Octaves and performing Torsional Vibration analysis.

WHO SHOULD ATTEND

Engineers and technicians who need to learn how to use LMS Test.Lab for angle domain processing, real time octaves and torsional vibration analysis.

PREREQUISITES

Required courses:
 • Rotating Machinery - Basics (TR-TLROT)

The knowledge of LMS Test.Lab Signature Testing and Signature Throughput Processing is assumed.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Angle Domain Background
• Angle Domain in Testlab + exercise
• Real Time Octaves (RTO) + exercise
• Sound Power based on Sound Pressure + exercise
• Torsional Vibration Analysis + exercise

Course Description

Simcenter Testlab 18.0
Sound Quality Testing and Engineering
How do we quantify sound?

Course Code	TR-TLSQ
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

You will learn how to perform the different steps in sound quality assessment with LMS Test.Lab: recording, replaying, filtering & editing, analysing and reporting.
 Next to a theoretical training on general sound quality and different objective analysis tools, you will be trained on choosing and applying these tools on comprehensive examples using the LMS Test.Lab Sound Diagnosis and Signature Throughput Processing workbooks.

WHO SHOULD ATTEND

This course is meant for engineers and technicians involved in engineering a product's sound to enhance its overall quality and/or building/maintaining brand identity.

PREREQUISITES

Basic knowledge of acoustic measurements and analysis is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• General Introduction to LMS Test.Lab Desktop
• Sound Quality introduction & theory
• Physical Background
• Psychoacoustics
• Sound Quality Metrics
• Subjective Analysis
• Recording & Online Psychoacoustic metrics
• Audio replay
• Listening
• Time Data handling
• Filtering
• Objective Analysis
• (tracked) Spectral Analysis
• Sound Quality Metrics
• Reporting

Course Description

Simcenter Testlab 17

Structures

Modal testing and Analysis

Course Code	TR-TLSTR
User Level	Beginner
Language	Spanish
Price	$1,350.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

En esta capacitación sobre el producto, se familiarizará con los conceptos básicos de cómo operar LMS Test.Lab y cómo usarlo para el Análisis Modal Experimental (EMA).

Utilizaremos un ejemplo industrial para Le guiará a través de la familia LMS Test.Lab Structures. Concluiremos explicando cómo usar los parámetros modales en los cálculos para ajustar el comportamiento dinámico de una estructura.

WHO SHOULD ATTEND

The course is intended for engineers and technicians that need to learn how to use LMS Test.Lab for experimental modal analysis or that want to learn about its capabilities.

PREREQUISITES

We recommend a basic knowledge of vibration measurements, structural dynamics and a basic understanding of digital signal processing.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Review of theory of Experimental Modal Analysis
• Review of Digital Signal Processing (DSP) techniques for data acquisition
• Desktop: Data visualization
• Spectral Testing + Source Control
• Modal Impact
• Geometry
• Modal Analysis
• Multi-Run Modal Analysis
• Modification Prediction
• Rigid Body Calculator
• Desktop: Printing and Plotting

Course Description

Simcenter Testlab 18.0

Structures

Modal testing and Analysis

Course Code	TR-TLSTR
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will become familiar with the basics of how to operate LMS Test.Lab and how to use it for Experimental Modal Analysis (EMA).
 We will use an industrial example to walk you through the LMS Test.Lab Structures family. We will conclude by explaining how to use modal parameters in computations to adjust a structures' dynamic behavior.

WHO SHOULD ATTEND

The course is intended for engineers and technicians that need to learn how to use LMS Test.Lab for experimental modal analysis or that want to learn about its capabilities.

PREREQUISITES

We recommend a basic knowledge of vibration measurements, structural dynamics and a basic understanding of digital signal processing.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Review of theory of Experimental Modal Analysis
 • Review of Digital Signal Processing (DSP) techniques for data acquisition
 • Desktop: Data visualization
 • Spectral Testing + Source Control
 • Modal Impact
 • Geometry
 • Modal Analysis
 • Multi-Run Modal Analysis
 • Modification Prediction
 • Rigid Body Calculator
 • Desktop: Printing and Plotting

Course Description

Simcenter Testlab 18.0

Structures – Advanced

Avanced Modal testing techniques

Course Code	TR-TLSTRA
User Level	Intermediate
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training we will introduce you to more advanced techniques such as how to extract modal parameters from data acquired under operating conditions and challenging boundary conditions.

Also the multiple-input multiple-output techniques and normal mode testing will be treated.

WHO SHOULD ATTEND

The course is intended for engineers and technicians that need to learn how to use Simcenter Testlab for experimental modal analysis or that want to learn about its capabilities.

PREREQUISITES

Required courses:
 • Structures (TR-TLSTR)

We recommend a basic knowledge of vibration measurements, structural dynamics and a basic understanding of digital signal processing.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Operational Modal Analysis (OMA)
• MIMO Sine - Swept & Stepped
• Normal Mode Testing

Course Description

Simcenter Testlab 18.0

Throughput Data Processing
Turning your test data into valuable knowledge

Course Code	TR-TLTDP
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Attendants of this course will learn how to use LMS Test.Lab products for the processing and reporting of time recordings. Various advanced time data analysis techniques will be addressed.

WHO SHOULD ATTEND

This course is intended for engineers and technicians who wish to process time histories in LMS Test.Lab for all sorts of applications.

PREREQUISITES

We recommend a basic knowledge of noise and vibrations, and order analysis.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• LMS Test.Lab Desktop: Data visualization
• Selecting Time Recordings
• Editing Time Recordings
• LMS Test.Lab Signature Throughput Processing
• LMS Test.Lab Time Signal Calculator
• LMS Test.Lab Offline RPM Extraction
• LMS Test.Lab Harmonic Tracking
• LMS Test.Lab Frame Statistics
• LMS Test.Lab Offline ANSI-IEC Octave Filtering
• LMS Test.Lab Time-Variant Frequency Analysis
• LMS Test.Lab Audio Replay and Filtering
• Exercises

Course Description

Simcenter Testlab 15.0

Transfer Path Analysis

Insights into System Dynamics with Test-Based Engineering

Course Code	TR-TLTPA
User Level	Intermediate to Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

To become familiar using LMS Test.Lab for single and multi reference transfer path analysis, load calculation, principal component analysis, contribution analysis including sound playback of the partial and total contributions.
 The required measurements will be provided and discussed, but will not be acquired during the class.
 Day 3 will include hands on measurements on a small test article as a group exercise to demonstrate the measurements and naming convention required using LMS Test.Lab Signature Testing and Modal Impact.

WHO SHOULD ATTEND

The course is intended for engineers and technicians that need to learn how to use LMS Test.Lab for Transfer Path Analysis.

PREREQUISITES

Required courses:
 • Rotating Machinery - Basics (TR-TLROT)

We recommend a basic knowledge of structural & operational measurements and modal analysis.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Transfer Path Analysis (TPA): introduction and background
 • Single Reference TPA: theory, load estimation techniques, implementation in software and exercise
 • TPA Component Editing: what if?
 • Multiple reference TPA: theory, implementation in software and exercise
 • Operational Path Analysis and OPAX: theory, load estimation technique, implementation in software and exercise
 • Time Domain TPA: theory, implementation in software and exercise
 • TPA Synthesis: theory, implementation in software and exercise
 • Hands on impact measurements, operational measurements and TPA on a small test article as a group exercise.

Course Description

Simcenter Testlab 16.0

Transfer Path Analysis

Insights into System Dynamics with Test-Based Engineering

Course Code	TR-TLTPA
User Level	Intermediate to Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

To become familiar using LMS Test.Lab for single and multi reference transfer path analysis, load calculation, principal component analysis, contribution analysis including sound playback of the partial and total contributions.
 The required measurements will be provided and discussed, but will not be acquired during the class.
 Day 3 will include hands on measurements on a small test article as a group exercise to demonstrate the measurements and naming convention required using LMS Test.Lab Signature Testing and Modal Impact.

WHO SHOULD ATTEND

The course is intended for engineers and technicians that need to learn how to use LMS Test.Lab for Transfer Path Analysis.

PREREQUISITES

Required courses:
 • Rotating Machinery - Basics (TR-TLROT)

We recommend a basic knowledge of structural & operational measurements and modal analysis.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Transfer Path Analysis (TPA): introduction and background
 • Single Reference TPA: theory, load estimation techniques, implementation in software and exercise
 • TPA Component Editing: what if?
 • Multiple reference TPA: theory, implementation in software and exercise
 • Operational Path Analysis and OPAX: theory, load estimation technique, implementation in software and exercise
 • Time Domain TPA: theory, implementation in software and exercise
 • TPA Synthesis: theory, implementation in software and exercise
 • Hands on impact measurements, operational measurements and TPA on a small test article as a group exercise.

Course Description

Simcenter Testlab 17.0

Transfer Path Analysis

Insights into System Dynamics with Test-Based Engineering

Course Code	TR-TLTPA
User Level	Intermediate to Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>To become familiar using LMS Test.Lab for single and multi reference transfer path analysis, load calculation, principal component analysis, contribution analysis including sound playback of the partial and total contributions.</p> <p>The required measurements will be provided and discussed, but will not be acquired during the class.</p> <p>

WHO SHOULD ATTEND

The course is intended for engineers and technicians that need to learn how to use LMS Test.Lab for Transfer Path Analysis.

PREREQUISITES

Required courses:
 • Rotating Machinery - Basics (TR-TLROT)

We recommend a basic knowledge of structural & operational measurements and modal analysis.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Transfer Path Analysis (TPA): introduction and background
 • Single Reference TPA: theory, load estimation techniques, implementation in software and exercise
 • TPA Component Editing: what if?
 • Multiple reference TPA: theory, implementation in software and exercise
 • Operational Path Analysis and OPAX: theory, load estimation technique, implementation in software and exercise
 • Time Domain TPA: theory, implementation in software and exercise
 • TPA Synthesis: theory, implementation in software and exercise

Course Description

Simcenter Testlab 18.0

Transfer Path Analysis

Insights into System Dynamics with Test-Based Engineering

Course Code	TR-TLTPA
User Level	Intermediate to Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>To become familiar using LMS Test.Lab for single and multi reference transfer path analysis, load calculation, principal component analysis, contribution analysis including sound playback of the partial and total contributions.</p> <p>The required measurements will be provided and discussed, but will not be acquired during the class.</p> <p>

WHO SHOULD ATTEND	COURSE TOPICS

The course is intended for engineers and technicians that need to learn how to use LMS Test.Lab for Transfer Path Analysis.

 • Transfer Path Analysis (TPA): introduction and background
 • Single Reference TPA: theory, load estimation techniques, implementation in software and exercise
 • TPA Component Editing: what if?
 • Multiple reference TPA: theory, implementation in software and exercise
 • Operational Path Analysis and OPAX: theory, load estimation technique, implementation in software and exercise
 • Time Domain TPA: theory, implementation in software and exercise
 • TPA Synthesis: theory, implementation in software and exercise

PREREQUISITES

Required courses:
 • Rotating Machinery - Basics (TR-TLROT)

We recommend a basic knowledge of structural & operational measurements and modal analysis.

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

Course Description

Simcenter Testxpress 14.0

Test.Xpress - Basics: Sound and Vibration Analyzer

Course Code	TR-TX
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this course, you will learn the use and application of the LMS Test.Xpress analyzer software in combination with the LMS Scadas Mobile / Recorder / XS.

Through a mix of presentations and hands-on exercises, you will learn to perform vibro-acoustic measurements with the system. All functionalities of the system will be addressed: FFT, Octave, order analysis, reporting,...

WHO SHOULD ATTEND

The course is intended for users that need to learn how to operate LMS Test.Xpress for noise and vibration measurements and analysis.

PREREQUISITES

We recommend a basic knowledge of noise and vibration measurements.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• General DSP background and exercises
• LMS Test.Xpress - basic structure
  • Configuration of channels
  • Measurement Settings and Online Functions
  • Displays
  • Operation References
  • Reporting
  • Working with Procedures
• FFT Analyzer
• Order Analyzer
• Octave Analyzer

Course Description

Simcenter Testxpress 14.0

Test.Xpress - Extended: Specific Applications

Course Code	TR-TXE
User Level	Beginner to Intermediate
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this course, you will learn the use and application of the LMS Test.Xpress analyzer software for specific applications like modal impact testing, human body vibration, sound intensity and sound power in combination with the LMS Scadas Mobile / Recorder / XS.

Through a mix of presentations and hands-on exercises, you will learn to perform measurements and analysis for a choice of specific applications like modal impact testing, human body vibration, sound intensity and sound power.

WHO SHOULD ATTEND

The course is intended for users that need to learn how to operate LMS Test.Xpress for noise and vibration measurements and analysis in specific applications.
We recommend a basic knowledge of acoustic/vibration measurements.

PREREQUISITES

Required courses:
 • (TR-TX Test.Xpress - Basics)

We recommend a basic knowledge of noise and vibration measurements.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Available topics (choice based on interest of the attendants):

 • Modal Impact Testing
 • Modal Analysis Lite and Operating Deflection Shapes (Structure Animation)
 • Durability testing (Strain Gage Measurements)
 • Human Body Vibration
 • Pressure based ISO Sound Power (ISO374x)
 • Sound Intensity for ISO9614 Sound Power Calculation

Course Description

Simcenter 3D 2019.1

Acoustics for Virtual.Lab Users
Acoustic Simulation

Course Code	TR-VL2SCA
User Level	Intermediate to Advanced
Language	English
Price	call (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will learn the basics of Acoustic Analysis in Simcenter 3D. We will teach how to set up an analysis for interior acoustics, exterior acoustics, calculate noise radiation, and include fluid-structure interaction in your simulation. You will learn how to use Simcenter 3D to prepare a mesh for an acoustical simulation and perform post-processing of acoustic simulation results. This course is intended for users of LMS Virtual.Lab that need to learn how to perform Acoustic Analysis in Simcenter 3D.

WHO SHOULD ATTEND

This course is intended for users of LMS Virtual.Lab that need to learn how to perform Acoustic Analysis in Simcenter 3D.

PREREQUISITES

A general understanding of Finite Element Methods is essential to get the most out of this training.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Simcenter 3D Desktop
• CAE interfaces
• Mesh based design
 • Acoustic Meshing
 • Mesh Coarsening
• Visualization of mesh quality
• Simcenter 3D Acoustic Analysis
 • Harmonic Solver and Acoustic Solver
 • Acoustic Transfer Vector (ATV) Solver
 • Vibro-acoustic Solver
 • Automatically Matched Layer (AML)
• Visualization of results and post-processing
• Advanced Processing
 • ATV based Response
 • Vibro-Acoustic Noise Transfer Functions
 • Panel Contribution Analysis
 • Modal Contribution Analysis
• Exercises included for all topics

Course Description

Simcenter 3D 2019.2

Acoustics for Virtual.Lab Users

Acoustic Simulation

Course Code	TR-VL2SCA
User Level	Intermediate to Advanced
Language	English
Price	call (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will learn the basics of Acoustic Analysis in Simcenter 3D. We will teach how to set up an analysis for interior acoustics, exterior acoustics, calculate noise radiation, and include fluid-structure interaction in your simulation. You will learn how to use Simcenter 3D to prepare a mesh for an acoustical simulation and perform post-processing of acoustic simulation results. This course is intended for users of LMS Virtual.Lab that need to learn how to perform Acoustic Analysis in Simcenter 3D.

WHO SHOULD ATTEND

This course is intended for users of LMS Virtual.Lab that need to learn how to perform Acoustic Analysis in Simcenter 3D.

PREREQUISITES

A general understanding of Finite Element Methods is essential to get the most out of this training.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Simcenter 3D Desktop
• CAE interfaces
• Mesh based design
 • Acoustic Meshing
 • Mesh Coarsening
• Visualization of mesh quality
• Simcenter 3D Acoustic Analysis
 • Harmonic Solver and Acoustic Solver
 • Acoustic Transfer Vector (ATV) Solver
 • Vibro-acoustic Solver
 • Automatically Matched Layer (AML)
• Visualization of results and post-processing
• Advanced Processing
 • ATV based Response
 • Vibro-Acoustic Noise Transfer Functions
 • Panel Contribution Analysis
 • Modal Contribution Analysis
• Exercises included for all topics

Course Description

Simcenter 3D 2019.1

Durability for Virtual.Lab Users
3D Dynamic system and component fatigue simulation

Course Code	TR-VL2SCD
User Level	Intermediate to Advanced
Language	English
Price	call (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will learn the basics of Simcenter 3D Specialist Durability simulation. Simcenter 3D Specialist Durability lets you predict the fatigue life of standalone and assembly components using an event-based workflow that features a parameter-driven solution process, a robust open solver, and a dedicated post-processing scenario. We will teach you how to create load events, solve the solution process and post process results.

Using specialist durability, you can define superposition load events by combining multiple measured or simulated load histories, in typical industry data formats, and multiple finite element results. By defining flexible body load events, you can seamlessly interact with motion analysis. You can also combine block load, transient, and other load events in a complex duty cycle load event.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for users of LMS Virtual.Lab Durability who need to learn Simcenter 3D Durability.

• Creating Load events
• Create specialist durability solution process
• Create a local definition
• Solving the specialist durability solution process
• Generate reports and post process results

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 2019.2

Durability for Virtual.Lab Users
3D Dynamic system and component fatigue simulation

Course Code	TR-VL2SCD
User Level	Intermediate to Advanced
Language	English
Price	call (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will learn the basics of Simcenter 3D Specialist Durability simulation. Simcenter 3D Specialist Durability lets you predict the fatigue life of standalone and assembly components using an event-based workflow that features a parameter-driven solution process, a robust open solver, and a dedicated post-processing scenario. We will teach you how to create load events, solve the solution process and post process results.

Using specialist durability, you can define superposition load events by combining multiple measured or simulated load histories, in typical industry data formats, and multiple finite element results. By defining flexible body load events, you can seamlessly interact with motion analysis. You can also combine block load, transient, and other load events in a complex duty cycle load event.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for users of LMS Virtual.Lab Durability who need to learn Simcenter 3D Durability.

• Creating Load events
• Create specialist durability solution process
• Create a local definition
• Solving the specialist durability solution process
• Generate reports and post process results

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 12.0

Motion for Virtual.Lab Users
3D Dynamic simulation using multibody simulation

Course Code	TR-VL2SCM-GH
User Level	Intermediate to Advanced
Language	English
Price	call (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will learn the basics of the Simcenter 3D modeling architecture to create Parts and Assemblies for mechanical simulation with Simcenter 3D Motion. We will teach you how to quickly assemble, analyze and optimize the real world behavior of dynamic mechanical systems on your desktop. You will learn how to define parameterized mechanical system models for more advanced design studies.

NOTE: This course is intended for existing Virtual.Lab customers who will be transitioning to Simcenter 3D Motion. The instructor will address specific transition topics to help migrate you to Simcenter 3D Motion. If you are you are not a Virtual.Lab customer, you can enroll in the same Motion class and this link as an alternative.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for users of LMS Virtual.Lab Motion who need to learn Simcenter 3D Motion.

PREREQUISITES

Required courses:
 • (NX FastStart for CATIA users on Learning Advantage)

A general understanding of structural dynamics is recommended. Previous experience with CAD is an asset.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Simcenter 3D Desktop
• CAD and CAE interfaces to Simcenter 3D
• Simcenter 3D Motion
 • Pre -Processing
  • Part and geometry creation
  • Constraints and drivers
  • Forces
  • Submechanisms
  • Motion Solvers
 • Flexible Bodies
• Post-processing
 • Animation of multi-body models
 • Visualization of resulting functions
• Contact Force modeling
• Expressions
• Control Systems
• Exercises included for all topics

Course Description

Simcenter 3D 2019.1

Motion for Virtual.Lab Users
3D Dynamic simulation using multibody simulation

Course Code	TR-VL2SCM-GH
User Level	Intermediate to Advanced
Language	English
Price	call (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will learn the basics of the Simcenter 3D modeling architecture to create Parts and Assemblies for mechanical simulation with Simcenter 3D Motion. We will teach you how to quickly assemble, analyze and optimize the real world behavior of dynamic mechanical systems on your desktop. You will learn how to define parameterized mechanical system models for more advanced design studies.

NOTE: This course is intended for existing Virtual.Lab customers who will be transitioning to Simcenter 3D Motion. The instructor will address specific transition topics to help migrate you to Simcenter 3D Motion. If you are you are not a Virtual.Lab customer, you can enroll in the same Motion class and this link as an alternative.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

This course is intended for users of LMS Virtual.Lab Motion who need to learn Simcenter 3D Motion.

PREREQUISITES

Required courses:
 • (NX FastStart for CATIA users on Learning Advantage)

A general understanding of structural dynamics is recommended. Previous experience with CAD is an asset.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Simcenter 3D Desktop
• CAD and CAE interfaces to Simcenter 3D
• Simcenter 3D Motion
 • Pre -Processing
  • Part and geometry creation
  • Constraints and drivers
  • Forces
  • Submechanisms
  • Motion Solvers
 • Flexible Bodies
 • Post-processing
  • Animation of multi-body models
  • Visualization of resulting functions
 • Contact Force modeling
 • Expressions
 • Control Systems
• Exercises included for all topics

Course Description

Training Support All

LIVE! Online Prerequisite Check

Course Code	TR00000
User Level	Beginner
Language	English
Price	$0.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	1 Hour
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This brief online session allows you to test your system's network connection and provides an overview of the tools used in the LIVE! Online class environment. Each person who enrolls in a LIVE! Online Training class must attend one of these sessions prior to the start of their training class.

WHO SHOULD ATTEND

Siemens PLM Software customers who have enrolled in a LIVE! Online Training class and have not attended one of these sessions in the past 12 months.

Perspective customers who are interested in learning if LIVE! Online Training would be a good choice for their needs are also welcome to attend.

PREREQUISITES

PC headset with microphone is strongly recommended.

Review the LIVE! Online System Requirements for other recommendations.

PROVIDED COURSE MATERIAL

None

COURSE TOPICS

• Overview of LIVE! Online Training
• Virtual class Interface
• VOIP audio test
• Using your Learning Advantage account
• Accessing the Cloud-based Training environment

Course Description

Solid Edge 10.0

Fundamentals

Course Code	TR01413
User Level	Beginner to Intermediate
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The Solid Edge Fundamentals course will focus on making the novice user aware of the potential uses of production level solid modeling. The focus of this course is on the fundamental skills and concepts central to the use of Solid Edge.

Students will have learned how to utilize Solid Edge to design production level parametric models of parts, sheet metal design, assemblies, detail drawings and document management. They will also be familiar with the Solid Edge user interface, adding features, sketching tools and various modeling techniques.

WHO SHOULD ATTEND

Users who want to get a jump-start on becoming proficient with the Solid Edge product.

PREREQUISITES

• Mechanical Design Experience
• Windows Experience
 • Completion of the Solid Edge Tutorials delivered with the product

Lack of Mechanical Design and Windows experience is very difficult to overcome in the classroom. Students who lack one or both should realize the impact it will have on their learning experience. Just a little exposure to Solid Edge prior to the class can make all the difference.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Exploring Solid Edge
• 2D Sketches and Layouts
• Primary Features
• Treatment Features
• Specialized Features
• Creating Drawings of 3D Models
• Dimensions and Annotation
• Additional Sheet Metal instruction
• Assembly Design
• Document Management

Course Description

HEEDS 2017.10

Introduction to HEEDS

Course Code	TR06391
User Level	Beginner
Language	English
Price	$800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

HEEDS Introductory training serves as an introduction to the major concepts behind effective process automation and design-space exploration using HEEDS. It provides a basic introduction to using HEEDS for design exploration studies. You will learn how to set up, run, and view the results from a general HEEDS study!

WHO SHOULD ATTEND

The HEEDS Introduction course is intended for all new and returning HEEDS users who wish to gain a basic understanding of the software functionality and user interface.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Optimization Strategies and Observations
• Introduction to Process Automation and Multi-Disciplinary Optimization (MDO)
• Batch Execution of an Analysis Model
• Visualization and Intuition
• Defining an Optimization Problem
• Searching for Optimal Solutions
• Optimization
• File and Directory Structure during a HEEDS Study
• Monitoring and Post-Processing a Design Study
• Objectives, Constraints and Performance
• Design Variables
• Optimization Search Path
• Evaluations and Restart
• Multi-Objective Optimization

Course Description

HEEDS 2018.10

Introduction to HEEDS

Course Code	TR06391
User Level	Beginner
Language	English
Price	$800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

HEEDS Introductory training serves as an introduction to the major concepts behind effective process automation and design-space exploration using HEEDS. It provides a basic introduction to using HEEDS for design exploration studies. You will learn how to set up, run, and view the results from a general HEEDS study!

WHO SHOULD ATTEND

The HEEDS Introduction course is intended for all new and returning HEEDS users who wish to gain a basic understanding of the software functionality and user interface.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Optimization Strategies and Observations
• Introduction to Process Automation and Multi-Disciplinary Optimization (MDO)
• Batch Execution of an Analysis Model
• Visualization and Intuition
• Defining an Optimization Problem
• Searching for Optimal Solutions
• Optimization
• File and Directory Structure during a HEEDS Study
• Monitoring and Post-Processing a Design Study
• Objectives, Constraints and Performance
• Design Variables
• Optimization Search Path
• Evaluations and Restart
• Multi-Objective Optimization

Course Description

HEEDS 2017.10

HEEDS Advanced

Course Code	TR06396
User Level	Advanced
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

HEEDS Advanced training covers advanced topics including advanced tagging methods, Design of Experiments, and Reliability and Robustness analysis. Enjoy a small class size and individualized attention from an optimization expert!

WHO SHOULD ATTEND	COURSE TOPICS

Suitable for engineers or analysts who wish to gain a deeper understanding of HEEDS.

PREREQUISITES

Required courses:
 • Introduction to HEEDS (TR06391)

None

PROVIDED COURSE MATERIAL

• Student Guide

Course Topics:
• Defining an Optimization Problem
• Advanced Tagging and Methods
• Curve Fitting and Vector Responses
• Taking Advantage of Intuition and Experience
• Specifying Designs Prior to Start / Restart
• Injecting Designs
• Collaborative Optimization
• Semi-Independent Variables
• Advanced Process Automation
• Parallel Studies
• Design of Experiments (DOE)
• Sensitivity Calculations
• Response Surfaces
• Response Surface Based Optimization
• Reliability and Robustness
• Optimization Principles

Course Description

HEEDS 2018.10
HEEDS Advanced

Course Code	TR06396
User Level	Advanced
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

HEEDS Advanced training covers advanced topics including advanced tagging methods, Design of Experiments, and Reliability and Robustness analysis. Enjoy a small class size and individualized attention from an optimization expert!

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Suitable for engineers or analysts who wish to gain a deeper understanding of HEEDS.

PREREQUISITES

Required courses:
 • Introduction to HEEDS (TR06391)

None

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Defining an Optimization Problem
• Advanced Tagging and Methods
• Curve Fitting and Vector Responses
• Taking Advantage of Intuition and Experience
• Specifying Designs Prior to Start / Restart
• Injecting Designs
• Collaborative Optimization
• Semi-Independent Variables
• Advanced Process Automation
• Parallel Studies
• Design of Experiments (DOE)
• Sensitivity Calculations
• Response Surfaces
• Response Surface Based Optimization
• Reliability and Robustness
• Optimization Principles

Course Description

Simcenter STAR-CCM+ 13.02

Virtual Tow Tank Advanced

Course Code	TR09033-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The aim of this course is to teach the techniques needed to conduct accurate and efficient marine simulations using computational fluid dynamics.

WHO SHOULD ATTEND

This course is intended for engineers who wish model maneuvering marine problems.

PREREQUISITES

 • Prior experience with a CFD tool, preferably STAR-CCM+, is required.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

The aim of this course is to teach the techniques needed to conduct accurate and efficient marine simulations using computational fluid dynamics.

Simcenter STAR-CCM+ 13.02

STAR-CCM+ Fundamentals

Course Code	TR09101-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Serving as an introduction to our Enterprise-Wide software solution, the aim of the class is to equip the attendee with a firm understanding of the basic use of STAR-CCM+ for conducting multi-physics simulations.

Attendees will experience a gradual well-structured learning curve over a three day period that reflects the major processes developed in STAR-CCM+. Each day we aim to have attendees using the software, hands-on, to begin their own simulations after instruction through tutorials and lectures. Using this structured approach, attendees will leave the training ready to address common numerical engineering challenges using STAR-CCM+ comfortable in the knowledge that Siemens PLM engineering support will be available to provide on-going technical support.

WHO SHOULD ATTEND

The basic STAR-CCM+ course is intended for engineers or analysts who are new to multiphysics simulation software, but it can also be used as refresher training for occasional users.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

 • During the first part of the day, we discuss and present the conceptual elements of flow fluid simulation moving on to describe how these elements are represented in the workflow process of STAR-CCM+. We describe the architecture of the software and the advantages of the client-server approach before moving into an introductory example that moves from problem import to a review of simulation results and an introduction to post-processing.

Day 2

 • Day two focuses on the basics of mesh generation – principles and strategies for efficient computational solving. The different surface and volume meshing models which constitute the meshing pipeline in STAR-CCM+ are introduced. Tutorials on automatic meshing are completed that include an introduction to multi domain meshing, surface cleanup and mesh modification.

Day 3

 • The last day of the class is used to consolidate the knowledge acquired over the first two days and explore some advanced

modules through further tutorials. In these cases, the examples reinforce the STAR-CCM+ workflow process and introduce additional capability and productivity features. Finally, the training material will introduce automation capabilities of the software as well as powerful field functions that allow customization and refined control.

Simcenter STAR-CCM+ 13.02

Introduction to CFD

Course Code	TR09105-GH
User Level	Beginner to Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Serving as an introduction to our Enterprise-Wide software solution, the aim of the class is to equip the attendee with a firm understanding of the basic use of STAR-CCM+ for conducting multi-physics simulations.

With the advent of "upfront" simulation, CFD has become accessible to a broad spectrum of engineers working in a wide range of industries and disciplines, many of whom have little formal fluid mechanics training. Understanding the fundamental principles that underlie commercial CFD solvers can help the user to effectively harness the power of modern CFD and innovate successful processes within their organization. As an added bonus, the bargaining power is placed back with the CFD buyer once they are equipped with the correct evaluation skills and information about current 'hot topics' and advances. Siemens is pleased to announce a brand-new one day training course, that is aimed at introducing new users, or non-users who encounter CFD, to these fundamentals. Industry development and the impact of external factors, such as hardware advances, will also be discussed.

WHO SHOULD ATTEND	COURSE TOPICS
Attendance to this course will help users to identify the type of problems to which CFD is suited, to understand	The course is split into nine easy-to-digest modules, each of which is backed up with a range of practical examples that cover

Course Description

some of the limitations of CFD technology, and help them to avoid common pitfalls encountered by the inexperienced user.

Open to new users of STAR-CD, STAR-CCM+, the STAR-CAD Series, or any other commercial CFD code. The course is also ideal for CAE managers or experimentalists wishing to gain an insight in to the computational world. **Introduction to CFD** will provide the best possible general introduction to industrial CFD simulation.

the full spectrum of industrial CFD use

- Introduction
- Basic Equations
- Boundary Conditions
- Meshes for CFD
- Turbulence
- Post-processing
- Quality of results
- Hardware for CFD
- Final tests

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

- Student Guide

Course Description

Simcenter STAR-CCM+ 13.02
Introduction to CFD

Course Code	TR09105
User Level	Beginner to Intermediate
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Serving as an introduction to our Enterprise-Wide software solution, the aim of the class is to equip the attendee with a firm understanding of the basic use of STAR-CCM+ for conducting multi-physics simulations.

With the advent of "upfront" simulation, CFD has become accessible to a broad spectrum of engineers working in a wide range of industries and disciplines, many of whom have little formal fluid mechanics training. Understanding the fundamental principles that underlie commercial CFD solvers can help the user to effectively harness the power of modern CFD and innovate successful processes within their organization. As an added bonus, the bargaining power is placed back with the CFD buyer once they are equipped with the correct evaluation skills and information about current 'hot topics' and advances. Siemens is pleased to announce a brand-new one day training course, that is aimed at introducing new users, or non-users who encounter CFD, to these fundamentals. Industry development and the impact of external factors, such as hardware advances, will also be discussed.

WHO SHOULD ATTEND	COURSE TOPICS

Attendance to this course will help users to identify the type of problems to which CFD is suited, to understand some of the limitations of CFD technology, and help them to avoid common pitfalls encountered by the inexperienced user.

Open to new users of STAR-CD, STAR-CCM+, the STAR-CAD Series, or any other commercial CFD code. The course is also ideal for CAE managers or experimentalists wishing to gain an insight in to the computational world. **Introduction to CFD** will provide the best possible general introduction to industrial CFD simulation.

The course is split into nine easy-to-digest modules, each of which is backed up with a range of practical examples that cover the full spectrum of industrial CFD use

 • Introduction
 • Basic Equations
 • Boundary Conditions
 • Meshes for CFD
 • Turbulence
 • Post-processing
 • Quality of results
 • Hardware for CFD
 • Final tests

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

Course Description

STAR-CD 4.30

ES-ICE

Course Code	TR09106
User Level	Beginner to Intermediate
Language	English
Price	$3,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

STAR-CD es-ice (Expert System Internal Combustion Engines) is a meshing and analysis tool developed and used by Siemens Industry Software to simplify the meshing and analysis setup for transient in-cylinder flow and combustion calculations for reciprocating engines. The es-ice course is intended to provide users with the ability to use es-ice to model realistic engine geometries. It is an introduction to in-cylinder modeling with es-ice and STAR-CD. Upon completion of the course, users will have all of the tools needed to generate models with es-ice for their engine geometries, set up simple simulations, perform STAR-CD analyses, and post process their results.

WHO SHOULD ATTEND

Any user new to simulating reciprocating engine in-cylinder processes with es-ice.

PREREQUISITES

Other requirements:

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1: Introduction, Geometry Preparation, Meshing, Setup and Run
 • Introduction to STAR-CD es-ice
 • STAR-CD es-ice Environment
 • Data Preparation
 • Simcenter STAR-CCM+ Surface Meshing
  • Trimming Method Geometry Preparation
  • Surface Identification
  • Valves
  • Csets & Splines
   • Automatic 3DTrimming Meshing
  • Template Generation
  • Trimming
  • Checking Result Grid (basics)
 • Scripting the Auto3D Meshing Pipeline
  • Analysis Setup
  • In es-ice
  • In pro-STAR
  • pro-STAR panels for automation

Day 2: Post Processing, Mesh Checks and Troubleshoot, Mesh Improvements
 • Analysis Review
 • STAR-CD es-ice Post Processing
 • Animations
 • Scripted Post Processing
   • Details on Automatic 3D Trimmed Meshing
   • Troubleshooting the automated process
   • Checking result grids (details)
   • Mesh improvement and repair (Hints and Best Practices)
 • Trimming Method Template Improvement
 • Trim Panel Details (Parameter meanings)
 • Manual template generation (2D and 3D)
 • Retrimming

Day 3: Advanced Topics, Diesel Sector, Heat Transfer and more
 • Meshing details
 • Manual cell repair
   • Analysis Details
   • "ahead" files
   • mvmesh.sh
   • star command line
 • Diesel Sector Analysis
 • Meshing
 • Physics: Spray and combustion
   • Full Process Automation
   • Built-in scripts: Diesel Sector, Full Cycle Auto 3D
   • Building a customized scripted process (guidelines)
 • Review/Questions
 • Feedback

Course Description

Simcenter STAR-CCM+ 13.02

STAR-CCM+ for Chemical Processing Industry

Course Code	TR09113
User Level	Beginner to Intermediate
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

This fundamentals course is most suitable for engineers or analysts who are new to Siemens PLM computational fluid dynamics and/or who wish to conduct simulation of products and designs operating under real-world conditions. Additionally, the course can be used as refresher training for experienced CFD engineers and occasional users of the software.

WHO SHOULD ATTEND	COURSE TOPICS
For beginners to the software who will have applications in the chemical processing industry (CPI).	Computational fluid dynamics in chemical processing industry.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter SPEED 13.04

Introduction to SPEED - Basics

Course Code	TR09118-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of the **Introduction to SPEED - Basics** course is to give an introduction in the use of SPEED on each of the 6 individual programs including the material data base managers and the use of the 2D MS FEA solver, PC-FEA.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Intended for any engineer involved in electrical machine design..

PREREQUISITES

Recommendations:

• An understanding of electrical machines is helpful

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

• Intro to SPEED in general
• Material data base
• PC-BDC, brushless DC with surface magnet example

Day 2

• PC-BDC, sinewave IPM example
• PC-IMD, 3-phase example
• PC-IMD, single phase example

Course Description

Simcenter SPEED 14.02

Introduction to SPEED - Basics

Course Code	TR09118-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of the **Introduction to SPEED - Basics** course is to give an introduction in the use of SPEED on the synchronous machine program PC-BDC including the material data base managers and the use of the 2D MS FEA solver, PC-FEA.

WHO SHOULD ATTEND

Intended for any engineer involved in electrical machine design..

PREREQUISITES

Recommendations:

• An understanding of electrical machines is helpful

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

The two-day course will be a selection of the following topics:

• Intro to SPEED in general
• Material database
• PC-BDC, brushless DC with surface magnet example
• PC-BDC, sinewave IPM example
• PC-BDC, synchronous reluctance motor example

The final agenda will be tailored for the needs of the attendees and may be subject to change with focusing on specific machine types and topologies.

Course Description

Simcenter SPEED 13.04

Introduction to SPEED - Fundamentals

Course Code	TR09119-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of the **Introduction to SPEED - Fundamentals** course is to give an introduction in the use of SPEED on each of the 6 individual programs including the material data base managers and the use of the 2D MS FEA solver, PC-FEA.

WHO SHOULD ATTEND	COURSE TOPICS

Intended for any engineer involved in electrical machine design..

The three-day course will be a selection of the following topics:

- Intro to SPEED in general
- Material data base
- PC-BDC, brushless DC with surface magnet example
- PC-BDC, sinewave IPM example
- PC-BDC, synchronous reluctance motor example
- PC-BDC, wound field generator example
- PC-BDC with HEEDS: Cogging torque optimization
- PC-IMD, 3-phase example
- PC-IMD, single phase example
- PC-SRD, Switched Reluctance machine example
- PC-WFC, Wound Field Commutator machine example
- PC-DCM, DC brushed PM machine example
- PC-AXM, Axial Flux machine example

PREREQUISITES

Recommendations:

- An understanding of electrical machines is helpful

PROVIDED COURSE MATERIAL

- Student Guide

The final agenda will be tailored for the needs of the attendees and may be subject to change with focusing on specific machine types and topologies.

Course Description

Simcenter STAR-CCM+ 13.02

Internal Combustion Engine (ICE)

Course Code	TR09166-GH
User Level	Intermediate to Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Starting with a lecture introducing Internal Combustion Engine (ICE) basics and objectives of corresponding cold flow simulations, we will walk through the complete setup of a cold flow simulation using STAR-ICE. Included are setup recommendations, details needing special attention and some interactions of STAR-ICE with STAR-CCM+.
 • CAD and geometry requirements
 • CAD pre-processing
 • Motion Specification
 • Initialization and Boundary Conditions
 • Mesh Generation
 • Re-mesh criteria
 • Refinement
 • Plots and Scenes
 • Running

How STAR-ICE works and makes use of STAR-CCM+ will be discussed more extensively in the second lecture.

WHO SHOULD ATTEND	COURSE TOPICS

Suitable for engineers responsible for internal combustion simulations.

 • Introduction
 • Guided workshop engine 1
 • Behind the scenes
 • Autonomous workshop engine 2

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

PROVIDED COURSE MATERIAL

 • Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Virtual Tow Tank

Course Code	TR09301-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The aim of this course is to teach the techniques needed to conduct accurate and efficient marine simulations using computational fluid dynamics. The course is structured as a combination of lectures, demonstrations and workshops (tutorials). Best practices for meshing and analysis of stationary and multi-degree-of-freedom (DOF) free-surface applications are emphasized and demonstrated.

The course begins with a review of the fundamental principles of marine engineering before moving onto discussions of typical marine geometries and demonstrating in detail, the import, preparation and meshing of those geometries for computational analysis.

Attendees will construct a model of a typical ship geometry and perform a free-surface resistance analysis. Subsequent lectures, demonstrations and workshops build on this example, and include calculation of vessel sinkage & trim, modeling of waves and associated response (seakeeping), and modeling and analysis of propellers.

WHO SHOULD ATTEND

This course is intended for any engineer involved or interested in CFD modeling of marine problems.

PREREQUISITES

• Prior experience with a CFD tool, preferably STAR-CCM+, is strongly recommended

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

 • Lecture: Free Surface Meshing, Analysis Strategies and Best Practices
 • Workshop: Simulation of a motorboat I
 • Lecture: Introduction to 6-DOF Modeling
 • Workshop: Simulation of a motorboat II
 • Workshop: Free Surface Analysis of a Naval Vessel
 • Lecture: Wave Generation
 • Demo: Boundary Conditions using Field Functions
 • Workshop: Free Surface Analysis: Seakeeping

Day 2

 • Lecture/Demo: Post-Processing of Marine Analyses
 • Lecture: Introduction to Overset Mesh
 • Workshop: Motorboat in Channel
 • Lecture: Propeller Analysis
 • Workshop: Propeller Analysis in Open Water

Course Description

• Workshop: Propeller Analysis with Simplified Hull

Simcenter STAR-CCM+ 13.02

Virtual Tow Tank

Course Code	TR09301
User Level	Intermediate to Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The aim of this course is to teach the techniques needed to conduct accurate and efficient marine simulations using computational fluid dynamics. The course is structured as a combination of lectures, demonstrations and workshops (tutorials). Best practices for meshing and analysis of stationary and multi-degree-of-freedom (DOF) free-surface applications are emphasized and demonstrated.

The course begins with a review of the fundamental principles of marine engineering before moving onto discussions of typical marine geometries and demonstrating in detail, the import, preparation and meshing of those geometries for computational analysis.

Attendees will construct a model of a typical ship geometry and perform a free-surface resistance analysis. Subsequent lectures, demonstrations and workshops build on this example, and include calculation of vessel sinkage & trim, modeling of waves and associated response (seakeeping), and modeling and analysis of propellers.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for any engineer involved or interested in CFD modeling of marine problems.

Day 1

PREREQUISITES	

• Lecture: Free Surface Meshing, Analysis Strategies and Best Practices
• Workshop: Simulation of a motorboat I

Course Description

• Prior experience with a CFD tool, preferably STAR-CCM+, is strongly recommended

• Student Guide

• Lecture: Introduction to 6-DOF Modeling
• Workshop: Simulation of a motorboat II
• Workshop: Free Surface Analysis of a Naval Vessel
• Lecture: Wave Generation
• Demo: Boundary Conditions using Field Functions
• Workshop: Free Surface Analysis: Seakeeping

Day 2

• Lecture/Demo: Post-Processing of Marine Analyses
• Lecture: Introduction to Overset Mesh
• Workshop: Motorboat in Channel
• Lecture: Propeller Analysis
• Workshop: Propeller Analysis in Open Water
• Workshop: Propeller Analysis with Simplified Hull

Course Description

Simcenter STAR-CCM+ 13.02

Engine Compartment Thermal Modeling

Course Code	TR09304-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>The course will cover the following aspects of underhood thermal management via a mixture of lectures and tutorials:</p>

CAD organization and preparation
Mesh generation guidelines and techniques
Fan and Heat Exchanger Modeling
Post-Processing
Radiation fundamentals
Thermal Component temperature prediction
DFSS type scenarios

WHO SHOULD ATTEND

This course is intended for any engineer involved in CFD modeling of heat transfer problems. Basic familiarity with STAR-CCM+ is recommended

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

 • 6 months to 1 year experience in using STAR-CCM+.

PROVIDED COURSE MATERIAL

None

COURSE TOPICS

Day 1

 • Introduction to UHT
 • CAD Preparation Tutorial
 • Front End Air Flow tutorial
 • Simplified Underbody Tutorial

Day 2

 • Dual Stream Heat Exchanger tutorial
 • Adaptation of Front End Air flow tutorial to include radiation
 • Radiation Tutorial Continuation
 • Miscellaneous Topics

Course Description

Simcenter STAR-CCM+ 13.02

Engine Compartment Thermal Modeling

Course Code	TR09304
User Level	Intermediate to Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

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\<p>The course will cover the following aspects of underhood thermal management via a mixture of lectures and tutorials:\</p>
\
\<li>CAD organization and preparation
\<li>Mesh generation guidelines and techniques
\<li>Fan and Heat Exchanger Modeling
\<li>Post-Processing
\<li>Radiation fundamentals
\<li>Thermal Component temperature prediction
\
DFSS type scenarios\
\

WHO SHOULD ATTEND

This course is intended for any engineer involved in CFD modeling of heat transfer problems. Basic familiarity with STAR-CCM+ is recommended

PREREQUISITES

Required courses:
 • Basic STAR-CCM+ (TR09101)

 • 6 months to 1 year experience in using STAR-CCM+.

PROVIDED COURSE MATERIAL

None

COURSE TOPICS

Day 1

• Introduction to UHT
• CAD Preparation Tutorial
• Front End Air Flow tutorial
• Simplified Underbody Tutorial

Day 2

• Dual Stream Heat Exchanger tutorial
• Adaptation of Front End Air flow tutorial to include radiation
• Radiation Tutorial Continuation
• Miscellaneous Topics

Course Description

Simcenter STAR-CCM+ 13.02

Effective Heat Transfer

Course Code	TR09305-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The purpose of this course is to teach the techniques needed to conduct accurate and efficient single-phase heat transfer analyses using computational fluid dynamics.

The course is structured as a combination of lectures, demonstrations and workshops (tutorials). We begin with an review of heat transfer fundamentals. The basic heat transfer modes of conduction, convection and radiation are then discussed in detail, and recommended meshing and analysis best practices are illustrated through demonstrations performed by the instructor, and workshop problems solved by the students.

The demonstrations and workshops will use CD-adapco's CFD technology, but the general practices discussed will apply to heat transfer analyses using any CFD code.

WHO SHOULD ATTEND

This course is intended for any engineer involved in CFD modeling of heat transfer problems. Basic familiarity with STAR-CCM+ is recommended

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

 • Lecture: Review of Heat Transfer Fundamentals
 • Lecture: Conduction Heat Transfer
 • Workshop: Conjugate Heat Transfer Analysis of a Shell-and-Tube Heat Exchanger
 • Lecture: Convection Heat Transfer
 • Demo: Convective Heat Transfer Coefficients
 • Workshop: Meshing for Conjugate Heat Transfer Analysis Flow
 • Lecture: Thermal Stress Analysis

Day 2

 • Demo: Mapping Thermal Data to an FEA Model
 • Workshop: Finite Volume Thermal Stress Analysis
 • Lecture: Thermal Radiation
 • Workshop: Tractor Flow and Heat Transfer with Thermal Radiation
 • Lecture: Solar Radiation
 • Workshop: Office Thermal Prediction including Solar Radiation

Simcenter STAR-CCM+ 13.02

Effective Heat Transfer

Course Code	TR09305
User Level	Intermediate to Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The purpose of this course is to teach the techniques needed to conduct accurate and efficient single-phase heat transfer analyses using computational fluid dynamics.

The course is structured as a combination of lectures, demonstrations and workshops (tutorials). We begin with an review of heat transfer fundamentals. The basic heat transfer modes of conduction, convection and radiation are then discussed in detail, and recommended meshing and analysis best practices are illustrated through demonstrations performed by the instructor, and workshop problems solved by the students.

The demonstrations and workshops will use CD-adapco's CFD technology, but the general practices discussed will apply to heat transfer analyses using any CFD code.

WHO SHOULD ATTEND

This course is intended for any engineer involved in CFD modeling of heat transfer problems. Basic familiarity with STAR-CCM+ is recommended

PREREQUISITES

Required courses:

COURSE TOPICS

Day 1

• Lecture: Review of Heat Transfer Fundamentals
• Lecture: Conduction Heat Transfer
• Workshop: Conjugate Heat Transfer Analysis of a Shell-and-Tube Heat Exchanger
• Lecture: Convection Heat Transfer

Course Description

• Basic STAR-CCM+ (TR09101)

PROVIDED COURSE MATERIAL

• Student Guide

• Demo: Convective Heat Transfer Coefficients
• Workshop: Meshing for Conjugate Heat Transfer Analysis Flow
• Lecture: Thermal Stress Analysis

Day 2

• Demo: Mapping Thermal Data to an FEA Model
• Workshop: Finite Volume Thermal Stress Analysis
• Lecture: Thermal Radiation
• Workshop: Tractor Flow and Heat Transfer with Thermal Radiation
• Lecture: Solar Radiation
• Workshop: Office Thermal Prediction including Solar Radiation

Course Description

Simcenter STAR-CCM+ 13.02

Process Automation using JAVA

Course Code	TR09306-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The objective of this course is to provide analysis engineers with the ability to integrate computational automation into their engineering processes through the use of the powerful JAVA™ scripting functionality in STAR-CCM+. In achieving automation of engineering processes, analysts can expect rapid streamlining of engineering design procedures allowing both an increase in the number of design cycles and more exploratory use of the powerful STAR-CCM+ engineering toolset.

WHO SHOULD ATTEND

If you are an experienced STAR-CCM+ user and wish to integrate automated engineering processes then this course provides you the tools to achieve your goal.

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

 • Users should have a good grasp of programming fundamentals.
 • JAVA™ knowledge is useful, but not required.

PROVIDED COURSE MATERIAL

None

COURSE TOPICS

Java™ basics are covered whenever they are used

 • Introduction to Object Oriented Programming
 • Arrays, Flow Structures, Collections
 • Exception Handling and Garbage Collection
 • File I/O

Macros in STAR-CCM+

 • Recording, editing and playing macros within STAR-CCM+
 • The STAR-CCM+ Java™ API
 • Tutorials for meshing and physics setup, post processing and running
 • Putting everything together in an overarching macro
  • Calling macros from within a macro
  • Calling compiled macros placed in a different location
 • Maintenance of STAR-CCM+ macros
  • Workflow changes
  • Deprecated methods
  • Removed classes

Introduction to NetBeans™

 • Brief introduction to the NetBeans™ environment and its advantages
 • All tutorials illustrate the use of NetBeans™ for editing and modifying macros

Course Description

Simcenter STAR-CCM+ 13.02

Process Automation using JAVA

Course Code	TR09306
User Level	Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The objective of this course is to provide analysis engineers with the ability to integrate computational automation into their engineering processes through the use of the powerful JAVA™ scripting functionality in STAR-CCM+. In achieving automation of engineering processes, analysts can expect rapid streamlining of engineering design procedures allowing both an increase in the number of design cycles and more exploratory use of the powerful STAR-CCM+ engineering toolset.

WHO SHOULD ATTEND

If you are an experienced STAR-CCM+ user and wish to integrate automated engineering processes then this course provides you the tools to achieve your goal.

PREREQUISITES

Required courses:
 • Basic STAR-CCM+ (TR09101)

 • Users should have a good grasp of programming fundamentals.
 • JAVA™ knowledge is useful, but not required.

PROVIDED COURSE MATERIAL

None

COURSE TOPICS

Java™ basics are covered whenever they are used

 • Introduction to Object Oriented Programming
 • Arrays, Flow Structures, Collections
 • Exception Handling and Garbage Collection
 • File I/O

Macros in STAR-CCM+

 • Recording, editing and playing macros within STAR-CCM+
 • The STAR-CCM+ Java™ API
 • Tutorials for meshing and physics setup, post processing and running
 • Putting everything together in an overarching macro
  • Calling macros from within a macro
  • Calling compiled macros placed in a different location
 • Maintenance of STAR-CCM+ macros
  • Workflow changes
  • Deprecated methods
  • Removed classes

Introduction to NetBeans™

 • Brief introduction to the NetBeans™ environment and its advantages
 • All tutorials illustrate the use of NetBeans™ for editing and modifying macros

Course Description

Simcenter STAR-CCM+ 13.02

Combustion Analysis

Course Code	TR09307-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Attendees in this Combustion Analysis course should have a working knowledge of STAR-CCM+, a basic knowledge of RANS (Reynolds averaged Navier-Stokes) modeling, and a general knowledge of combustion theory. Suited for engineers involved in design, specification, or research related to combustion systems. Computational Combustion has shown its ability to help the engineer more efficiently solve today's challenges.

WHO SHOULD ATTEND	COURSE TOPICS

Suited for engineers involved in design, specification, or research related to combustion systems.

Suited for engineers involved in design, specification, or research related to combustion systems. Computational Combustion has shown its ability to help the engineer more efficiently solve today's challenges.

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

 • Should have a basic knowledge of RANS (Reynolds averaged Navier-Stokes) modeling, and a general knowledge of combustion theory.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Electronics Thermal Management

Course Code	TR09310-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The purpose of this course is to teach attendees the methods used to conduct effective thermal analyses of electronics systems using STAR-CCM+.

WHO SHOULD ATTEND	**COURSE TOPICS**
Suited for electronics system designers and packaging specialists involved in thermal management and analysis.	The purpose of this course is to teach attendees the methods used to conduct effective thermal analyses of electronics systems using STAR-CCM+.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide

Simcenter STAR-CCM+ 13.02

STAR-CCM+ Wizard Creation and Integration

Course Code	TR09311-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of this class is to teach attendees the common basics of GUI development in relation to STAR-CCM+. Attendees will learn how to fully utilize interface components and the functionality of STAR-CCM+ in their own user interface add-ons.

WHO SHOULD ATTEND	COURSE TOPICS

Suitable for users who wish to take macro development a stage further and begin to generate graphical tools which are seamlessly integrated into STAR-CCM+.

Basics of GUI development in relation to STAR-CCM+.

PREREQUISITES

<P>Required courses:</P>
Process Automation using JAVA (TR09306-GH)
<P><p>Other requirements:</P

Users should have a good grasp of programming fundamentals
JAVA knowledge is required per prerequisite above

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Aeroacoustics

Course Code	TR09312-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The aim of this course is to teach the techniques needed to conduct accurate and efficient aeroacoustic simulations using computational fluid dynamics.

The course is structured as a combination of lectures, demonstrations and workshops (tutorials). The course begins with an introduction to the fundamental principles of aeroacoustics, including the concept of acoustic analogies to derive various models available inside STAR-CCM+, such as the Ffowcs-Williams & Hawkings (FW-H) model. This is followed by a sequence of STAR-CCM+ simulation cases which demonstrate the various acoustic models and features available for noise source resolution and analysis. Attendees will learn how to set-up simulations for aero-acoustic problems, and perform the necessary post-processing to analyze the noise sources.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Suited for any engineer involved or interested in CFD modeling of aeroacoustic problems.

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

• Lectures: Introduction to Acoustics and Aeroacoustics
• Workshop: Direct Noise calculations, applied to sun-roof buffeting
• Lectures: DES and LES Methodologies

Day 2

• Lectures: Acoustics analogies and FW-H
• Workshop: FW-H on a simple fan model and duct inlet
• Lectures: Acoustic Wave solver
• Lectures: Post-processing transient data

Course Description

Simcenter STAR-CCM+ 13.02

Fluid Structure Interaction

Course Code	TR09318-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>In this 2 day training course you will learn how to solve challenging Fluid-Structure Interactions (FSI) problems using STAR-CCM+ / Abaqus Co-Simulation.
 Several FSI application examples will be solved and setup from scratch during the training. The focus of the training is the coupling between STAR-CCM+ and Abaqus, and especially on how to monitor and improve the convergence of the coupled solution.
 Additionally you will learn how to setup and prepare simple Abaqus models in Abaqus/CAE, starting from a geometry export from STAR-CCM+. This will enable you to create simple test cases for your applications all by yourself. With help of such test cases you will find the best coupling settings in an efficient manner.
 An engineer needs 3 things to be able to successfully solve FSI problems:
 1) A software which efficiently solves all relevant physics
 2) A software which is easy to use
 3) Expertise and experience in solving FSI problems
</p>

<p>This training addresses the third requirement: focus on the governing physics. While experience may be acquired through trial and error, learning from an expert at Siemens will help to ensure you develop the knowledge and skills needed to be successful with your FSI simulations.</p>

<p>"I went in to the course thinking I knew a good amount about the FSI capabilities of STAR-CCM+. I walked away realizing how little I knew, and how much better I will be at developing my own models in the future." -Justin Pesich, Honda R&D Americas</p>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Engineers interested in simulating fluid-structure interaction phenomena

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

 • Prior knowledge of Abaqus would be beneficial, but not required

PROVIDED COURSE MATERIAL

COURSE TOPICS

Day 1

 • The training will start with a thorough lecture about partitioned flud-structure interaction. The lecture covers: Introduction to fluid-structure interaction, coupling methods, convergence, dynamic mesh evolution, STAR-CCM+/Abaqus Co-Simulation examples.
 • After the lecture the STAR-CCM+ and the Abaqus model for a simple shock absorber will be created. All steps will be covered, starting from the geometry import and ending with a discussion of the results of the coupled solution.
 • After day 1 you will:
  • Have a good understanding about partitioned fluid-structure interaction

Course Description

• Know how to judge the convergence of your FSI solution
• Understand the influence of all relevant solver settings
• Know how to efficiently solve FSI problems

Day 2

• On the second day we will continue to practice how to setup models for STAR-CCM+/Abaqus Co-Simulations. Two cases will be setup from scratch. A tank sloshing simulation and a free falling life boat simulation.
• In the tank sloshing simulation we will use shell elements to model plates inside the tank which are wetted from both sides. In the free falling life boat simulation we will use a series of beam elements as a surrogate model for the internal structure of the lifeboat. At the end of day 2) you will setup a STAR-CCM+/Abaqus Co-Simulation all by yourself, without any instructions.
• The trainers will assist you if you have any questions. With the completion of this last exercise you will have acquired all skills you need to be able to successfully solve FSI problems on your own.
• After day 2 you will:
  • Have exercised how to setup the models for STAR-CCM+ AND Abaqus
  • Have practiced to run STAR-CCM+ / Abaqus Co-Simulations
  • Know how to use shell and beam elements in a STAR-CCM+ / Abaqus Co-Simulation
  • Have all skill sets to be successful with your FSI problems

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Discrete Element Method

Course Code	TR09323-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The purpose of this course is to introduce advanced engineering techniques needed to investigate typical analysis problems involved in the coupling of continuous flow models and the motion of discrete solids or particles phase.

WHO SHOULD ATTEND	COURSE TOPICS
Suited for engineers who wish to refine their simulation analysis skills within the particle modeling application area and is appropriate for various industrial applications such as oil and gas applications, pharmaceutical applications, civil engineering, hydraulic engineering etc..	The purpose of this course is to introduce advanced engineering techniques needed to investigate typical analysis problems involved in the coupling of continuous flow models and the motion of discrete solids or particles phase.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Discrete Element Method

Course Code	TR09323
User Level	Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The purpose of this course is to introduce advanced engineering techniques needed to investigate typical analysis problems involved in the coupling of continuous flow models and the motion of discrete solids or particles phase.

WHO SHOULD ATTEND

Suited for engineers who wish to refine their simulation analysis skills within the particle modeling application area and is appropriate for various industrial applications such as oil and gas applications, pharmaceutical applications, civil engineering, hydraulic engineering etc..

COURSE TOPICS

The purpose of this course is to introduce advanced engineering techniques needed to investigate typical analysis problems involved in the coupling of continuous flow models and the motion of discrete solids or particles phase.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Lagrangian Multiphase Modeling

Course Code	TR09330-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The aim of this course is to teach the techniques needed to conduct accurate and efficient particle or droplet simulations using computational fluid dynamics.

WHO SHOULD ATTEND

This training course is appropriate for engineers who wish to refine their simulation analysis skills within the multiphase modeling application area and is appropriate for various industrial applications such as oil and gas applications, pharmaceutical applications, civil engineering, hydraulic engineering etc.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

• Lecture: Lagrangian Multiphase Basic Concepts
• Lecture: Lagrangian Multiphase in STAR-CCM+
• Workshop: Transient setup with solid particles
• Lecture: Post Processing in STAR-CCM+
• Workshop: Steady setup with liquid droplets
• Workshop: Post Processing

Day 2

• Lecture: Solver Settings
• Workshop: Spray Dryer
• Lecture: Liquid Film
• Workshop: Soiling of a Wing Mirror
• Workshop: Particle Filter simulation

Course Description

Simcenter STAR-CCM+ 13.02

Lagrangian Multiphase Modeling

Course Code	TR09330
User Level	Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The aim of this course is to teach the techniques needed to conduct accurate and efficient particle or droplet simulations using computational fluid dynamics.

WHO SHOULD ATTEND

This training course is appropriate for engineers who wish to refine their simulation analysis skills within the multiphase modeling application area and is appropriate for various industrial applications such as oil and gas applications, pharmaceutical applications, civil engineering, hydraulic engineering etc.

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

• Lecture: Lagrangian Multiphase Basic Concepts
• Lecture: Lagrangian Multiphase in STAR-CCM+
• Workshop: Transient setup with solid particles
• Lecture: Post Processing in STAR-CCM+
• Workshop: Steady setup with liquid droplets
• Workshop: Post Processing

Day 2

• Lecture: Solver Settings
• Workshop: Spray Dryer
• Lecture: Liquid Film
• Workshop: Soiling of a Wing Mirror
• Workshop: Particle Filter simulation

Course Description

Battery Design Studio 13.06

Introduction to Battery Design Studio (G2H)

Course Code	TR09331-GH
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The goal of this training is to provide you with the background knowledge and skills to simulate batteries used in many applications including automotive, power storage, and others.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Introduction to BDS: main features, examples of validation cases and literature
 • Hands-on exercises to explore the GUI and make changes to cell design
 • Hands-on exercises to set up and run multiple simulations with physics-based (Distributed) model
 • Deep dive into physics-based (Distributed) model: governing equations and important parameters
 • Cell formation and how it is addressed by the model
 • Hands-on exercises to fit equivalent circuit (NTG and RCR) models

Course Description

Simcenter STAR-CCM+ 13.06

Battery Simulation Module

Course Code	TR09332-GH
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The goal of this training is to provide you with the background knowledge and skills to perform a thermal analysis of lithium-ion batteries using Battery Simulation Module.

WHO SHOULD ATTEND	COURSE TOPICS

Not Available

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

Knowledge of heat transfer modeling techniques is also useful/helpful

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Battery Simulation Module: main features and key concepts
• Hands-on exercise to setup and run a single cell simulation
• Hands-on exercise to setup and run the simulation of a module including heat sinks and cooling system

Course Description

Simcenter STAR-CCM+ 13.02

Meshing Best Practices

Course Code	TR09340-GH
User Level	Beginner to Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The purpose of this course is to help users better understand the meshing workflow in STAR-CCM+, what to avoid, and how to take advantage of the meshing capabilities of the software. This course will help participants become familiar with the Meshing approach through lectures and workshops that focus on key meshing features of the software. Participants will learn and practice the application of surface preparation tools, surface and volume meshers, 2.5 meshers, and the prism layer mesher. In order to help users enhance the quality of their meshes, special attention is paid in this course to features of the Prism Layer mesher including the influence of meshing values and Prism Layer options on the mesh generated in near-wall areas.

WHO SHOULD ATTEND

This course is intended for proficient STAR-CCM+ users who want to gain more insight into the meshing processes of the software.

PREREQUISITES

Required courses:
• STAR-CCM+ Fundamentals (TR09101-GH)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Course Content will consist of lectures and workshops as follows:

Lecture:

 • Surface Import, Preparation and Repair
 • Mesh Operations and Custom Controls
 • Imprinting
 • Surface Remeshing
 • Understanding the Prism Layer Mesher
 • Mesh refinement options
 • Judging the quality of a Volume Mesh
 • Mesh recommendations for special geometries: Baffles and porous media

Workshops:

 • Local Surface Remeshing
 • Prism Layer Meshing
 • Porous Media meshing with the Directed Mesher

Course Description

Simcenter STAR-CCM+ 13.02

Meshing Best Practices

Course Code	TR09340
User Level	Beginner to Intermediate
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The purpose of this course is to help users better understand the meshing workflow in STAR-CCM+, what to avoid, and how to take advantage of the meshing capabilities of the software. This course will help participants become familiar with the Meshing approach through lectures and workshops that focus on key meshing features of the software. Participants will learn and practice the application of surface preparation tools, surface and volume meshers, 2.5 meshers, and the prism layer mesher. In order to help users enhance the quality of their meshes, special attention is paid in this course to features of the Prism Layer mesher including the influence of meshing values and Prism Layer options on the mesh generated in near-wall areas.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for proficient STAR-CCM+ users who want to gain more insight into the meshing processes of the software.

PREREQUISITES

Required courses:
 • Basic STAR-CCM+ (TR09101)

PROVIDED COURSE MATERIAL

• Student Guide

Course Content will consist of lectures and workshops as follows:

Lecture:

 • Surface Import, Preparation and Repair
 • Mesh Operations and Custom Controls
 • Imprinting
 • Surface Remeshing
 • Understanding the Prism Layer Mesher
 • Mesh refinement options
 • Judging the quality of a Volume Mesh
 • Mesh recommendations for special geometries: Baffles and porous media

Workshops:

 • Local Surface Remeshing
 • Prism Layer Meshing
 • Porous Media meshing with the Directed Mesher

Course Description

Simcenter STAR-CCM+ 13.02

Data Analysis and Advanced Post Processing

Course Code	TR09354-GH
User Level	Beginner to Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Master your data analysis tasks!

Starting with an intro to understanding your graphics resources, we will walk through the essential considerations for effective Scientific Visualization, focusing on the use of color, transparency and lighting to create high impact illustrations of your work. We will also address data management challenges and describe how and when to use the Solution History approach and/or the STAR-View+ standalone viewer.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for proficient STAR-CCM+ users who want to gain more insight into post-processing in the software.

Course Content will consist of lectures and workshops as follows:

Lecture:

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

 • Effective visualization
 • Scene building blocks
 • Advanced derived parts
 • Solution History
 • Data Focus

PROVIDED COURSE MATERIAL

Workshops:

 • Student Guide

 • Choosing and altering color maps
 • Realistic volume rendering
 • Working with solution history
 • Data Focus

Course Description

Simcenter STAR-CCM+ 13.02

Data Analysis and Advanced Post Processing

Course Code	TR09354
User Level	Beginner to Intermediate
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Master your data analysis tasks!

Starting with an intro to understanding your graphics resources, we will walk through the essential considerations for effective Scientific Visualization, focusing on the use of color, transparency and lighting to create high impact illustrations of your work. We will also address data management challenges and describe how and when to use the Solution History approach and/or the STAR-View+ standalone viewer.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for proficient STAR-CCM+ users who want to gain more insight into post-processing in the software.

Course Content will consist of lectures and workshops as follows:

Lecture:

- Effective visualization
- Scene building blocks
- Advanced derived parts
- Solution History
- Data Focus

PREREQUISITES

Required courses:
- Basic STAR-CCM+ (TR09101)

Workshops:

- Choosing and altering color maps
- Realistic volume rendering
- Working with solution history
- Data Focus

PROVIDED COURSE MATERIAL

- Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Turbomachinery

Course Code	TR09361-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this course lecture material is used to teach common simulation objectives, numerical methods, and guidelines for each type of simulation. Workshops are partly done in pairs. The examples describe the goal of the analysis and the high-level steps required to achieve that goal.

WHO SHOULD ATTEND	**COURSE TOPICS**

Suitable for engineers responsible for simulating rotating systems.

Analysis of rotating systems

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

Other requirements:

 • It is assumed that students are comfortable with the STAR-CCM+ workflow. The tutorials included in the training detail all steps required to complete an analysis, but do not include click-by- click instructions as would be found in the Basic Training.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Turbomachinery

Course Code	TR09361
User Level	Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

In this course lecture material is used to teach common simulation objectives, numerical methods, and guidelines for each type of simulation. Workshops are partly done in pairs. The examples describe the goal of the analysis and the high-level steps required to achieve that goal.

WHO SHOULD ATTEND	COURSE TOPICS

Suitable for engineers responsible for simulating rotating systems.

Analysis of rotating systems

PREREQUISITES

Required courses:
 • Basic STAR-CCM+ (TR09101)

Other requirements:

 • It is assumed that students are comfortable with the STAR-CCM+ workflow. The tutorials included in the training detail all steps required to complete an analysis, but do not include click-by- click instructions as would be found in the Basic Training.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Eulerian Multiphase Modeling

Course Code	TR09363-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is intended to provide you with the knowledge and skill to model Eulerian multiphase flows in STAR-CCM+.

WHO SHOULD ATTEND

Suitable for engineers or analysts who model multiphase flows in STAR-CCM+.

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

Other requirements:

 • Users should have a basic or higher understanding of STAR-CCM+ including the ability to navigate within the user interface and to create complete simulation workflows.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Differences in multiphase flows approaches, basic equations and forces on particles and bubbles
 • Theory of multiphase flows in STAR-CCM+
 • Definitions of multiphase and multicomponent flow terminology
 • Primary types of multiphase flows
 • Modeling approaches descriptions:
 • Eulerian-Lagrangian
 • Eulerian-Eulerian
 • Advantages and disadvantages to consider
 • Primary equations used in multiphase flows including discussion of conservation equations of mass, momentum, and energy
 • Discussion of volume fraction definition
 • Simulating bubbly flows using multiphase modeling in STAR-CCM+
 • Physical characteristics of bubbles in multiphase flows
 • Setup and workflow of an Eulerian multiphase simulation
 • Identify locations in STAR-CCM+ user interface where Eulerian multiphase models and phases are set
 • Explain importance of correctly setting multiphase interactions in the workflow setup

Course Description

Simcenter STAR-CCM+ 13.02

Eulerian Multiphase Modeling

Course Code	TR09363
User Level	Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

This course is intended to provide you with the knowledge and skill to model Eulerian multiphase flows in STAR-CCM+.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Suitable for engineers or analysts who model multiphase flows in STAR-CCM+.

PREREQUISITES

Required courses:
 • Basic STAR-CCM+ (TR09101)

Other requirements:

 • Users should have a basic or higher understanding of STAR-CCM+ including the ability to navigate within the user interface and to create complete simulation workflows.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Differences in multiphase flows approaches, basic equations and forces on particles and bubbles
Theory of multiphase flows in STAR-CCM+
Definitions of multiphase and multicomponent flow terminology
Primary types of multiphase flows
Modeling approaches descriptions:

Eulerian-Lagrangian
Eulerian-Eulerian

Advantages and disadvantages to consider
Primary equations used in multiphase flows including discussion of conservation equations of mass, momentum, and energy
Discussion of volume fraction definition
Simulating bubbly flows using multiphase modeling in STAR-CCM+
Physical characteristics of bubbles in multiphase flows
Setup and workflow of an Eulerian multiphase simulation
Identify locations in STAR-CCM+ user interface where Eulerian multiphase models and phases are set
Explain importance of correctly setting multiphase interactions in the workflow setup

Course Description

Simcenter STAR-CCM+ 13.02

Parts Based Workflow

Course Code	TR09364-GH
User Level	Beginner to Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Identify locations in STAR-CCM+ user interface where models can be set to create efficient workflows!

WHO SHOULD ATTEND	COURSE TOPICS
Suitable for engineers or analysts who wish to gain a deeper understanding of the STAR-CCM+ Parts Based Workflow.	Identify locations in STAR-CCM+ user interface where models can be set to create efficient workflows!

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

Other requirements:

 • Students should have a basic or higher understanding of STAR-CCM+ including the ability to navigate within the user interface and to create basic simulation workflows.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Parts Based Workflow

Course Code	TR09364
User Level	Beginner to Intermediate
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Identify locations in STAR-CCM+ user interface where models can be set to create efficient workflows!

WHO SHOULD ATTEND	COURSE TOPICS

Suitable for engineers or analysts who wish to gain a deeper understanding of the STAR-CCM+ Parts Based Workflow.

Identify locations in STAR-CCM+ user interface where models can be set to create efficient workflows!

PREREQUISITES

Required courses:
 • Basic STAR-CCM+ (TR09101)

Other requirements:

 • Students should have a basic or higher understanding of STAR-CCM+ including the ability to navigate within the user interface and to create basic simulation workflows.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Turbulence

Course Code	TR09366-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>Turbulence modeling is used because, in most case, direct numeric simulation (DNS) is too costly, as small scale features need to be captured with the mesh and time step size. Turbulence models allow to reduce the computational cost to get desired engineering quantities. This course will prepare engineers and analysts to apply and select the most appropriate turbulence models for a range of computational simulations.p>

WHO SHOULD ATTEND	**COURSE TOPICS**

Suited for engineers and analysts who need to create turbulence models for a range of computational simulations.

This course will prepare engineers and analysts to apply and select the most appropriate turbulence models for a range of computational simulations.

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

 • Students need to have working experience after having taken the Star-CCM+ basic class.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Turbulence

Course Code	TR09366
User Level	Advanced
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

<p>Turbulence modeling is used because, in most case, direct numeric simulation (DNS) is too costly, as small scale features need to be captured with the mesh and time step size. Turbulence models allow to reduce the computational cost to get desired engineering quantities. This course will prepare engineers and analysts to apply and select the most appropriate turbulence models for a range of computational simulations.p>

WHO SHOULD ATTEND	COURSE TOPICS

Suited for engineers and analysts who need to create turbulence models for a range of computational simulations.

This course will prepare engineers and analysts to apply and select the most appropriate turbulence models for a range of computational simulations.

PREREQUISITES

Required courses:
 • Basic STAR-CCM+ (TR09101)

 • Students need to have working experience after having taken the Star-CCM+ basic class.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

Selective Catalytic Reduction (SCR)

Course Code	TR09367-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Selective Catalytic Reduction (SCR) systems are used to meet regulations for Nitric Oxide emissions of Diesel Engines. This technology has become very promising in automotive industry and designing efficient SCR systems is one of the important tasks for CAE teams today. The objective of the **Selective Catalytic Reduction (SCR)** course is to provide analysis engineers with the ability to set up and run SCR simulations in STAR-CCM+.

WHO SHOULD ATTEND

If you are an experienced STAR-CCM+ user and wish to expand your knowledge and skill of SCR simulations, then this course provides you the background to get started in this area.

PREREQUISITES

Required courses:
 • STAR-CCM+ Fundamentals (TR09101-GH)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Introduction to the SCR Analysis basics with an overview of several relevant physics models such as Lagrangian Multiphase, Film Modeling, and surface chemistry
Hands-on experience in setting up a steady state as well as transient run in STAR-CCM+ for different SCR systems

Course Description

Simcenter STAR-CCM+ 13.02

Design Space Exploration

Course Code	TR09639-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The objective of this course is to provide analysis engineers with the ability to perform design space analyses in STAR-CCM+ with design sweeps and optimization via Pareto front. Fundamentals of design space exploration are presented through lectures and workshops.

WHO SHOULD ATTEND

If you are an experienced STAR-CCM+ user and wish to learn how to perform design space analyses in STAR-CCM+ with design sweeps and optimization via Pareto front. Fundamentals of design space exploration are presented through lectures and workshops.

PREREQUISITES

<P>Required courses:</P>
STAR-CCM+ Fundamentals (TR09101-GH)
<P>Other requirements:

Users should have a good grasp of programming fundamentals.
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PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

<p>Lectures</p>

Introduction to Design Manager
Use Design Manager to solve the drama at a heat exchanger company
Optimization fundamentals
Types of design outcomes
Discontinuous parameter space transformation
Preparing simulations for design exploration
Refining the mesh and improving results

<p>Workshops</p>

Parameter sweep
Robust sketching of a wavy channel
Robust solid modeling of a wavy channel
Parameterizing a three layer composite
Robust CAD of a finned heat exchanger
2D heat exchanger core reference simulation
Wavy heat exchanger design exploration:

setup and run,
in depth data analysis,:
further improving designs:

Course Description

Simcenter STAR-CCM+ 13.02

STAR-CCM+ for Oil and Gas Industry

Course Code	TR09742-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This fundamentals course is most suitable for engineers or analysts who are new to Siemens PLM computational fluid dynamics and/or who wish to conduct simulation of products and designs operating under real-world conditions. Additionally, the course can be used as refresher training for experienced CFD engineers and occasional users of the software.

WHO SHOULD ATTEND	COURSE TOPICS
Suitable for beginners to the software who will have applications in the oil and gas industry.	Conduct simulation of products and designs operating under real-world conditions.

PREREQUISITES

Other recommendations:
 • Basic understanding of finite element analysis principles.

PROVIDED COURSE MATERIAL

 • Student Guide

Course Description

Simcenter STAR-CCM+ 13.02

STAR-CCM+ for Oil and Gas Industry

Course Code	TR09742
User Level	Beginner to Intermediate
Language	Portuguese
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

This fundamentals course is most suitable for engineers or analysts who are new to Siemens PLM computational fluid dynamics and/or who wish to conduct simulation of products and designs operating under real-world conditions. Additionally, the course can be used as refresher training for experienced CFD engineers and occasional users of the software.

WHO SHOULD ATTEND	COURSE TOPICS
Suitable for beginners to the software who will have applications in the oil and gas industry.	Conduct simulation of products and designs operating under real-world conditions.

PREREQUISITES

Other recommendations:
 • Basic understanding of finite element analysis principles.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

NX 9.0

Sketching Fundamentals
With Teamcenter Integration

Course Code	TR10028-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX Sketching Fundamentals** course teaches you how to create sketches in NX. This course is a combination of the Sketching techniques taught in the Essential for the NX Designer and Intermediate NX Design and Assemblies courses. Class lectures and hands-on activities demonstrate good sketching techniques for parametric solid modeling.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• NC programmers
• Engineers
• CAD/CAM managers
• Manufacturing engineers
• System managers
• Application programmers

COURSE TOPICS

• Sketching in Modeling and the Sketch task environment
• Creating sketches
• Constraining sketches
• Projecting, offsetting, and patterning sketch curves
• Sketching on a path

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

Or successful completion of the Essentials for NX Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

NX 10.0

Mechanical Freeform Modeling
With Teamcenter Integration

Course Code	TR10035-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment.

Learn how to create free form parts that update reliably and shift smoothly to the manufacturing application. You will learn how to incorporate freeform features into any part, from reverse engineered product models to complex engineering designs.

UPDATE: If you are considering this course, please also consider the NX CAD Surface Modeling Processes course as an alternative. The NX CAD Surface Modeling Processes course was designed by our US training experts and exceeds the course objectives of the Mechanical Freeform Modeling course above. Similar in content, but designed as a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND	COURSE TOPICS

 • Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

 • Create curves and derived curves used in creating freeform features.
 • Analyze curves and faces.
 • Create freeform shapes through curves.
 • Create freeform shapes by sweeping sections along curves.
 • Create transition and blend shapes.
 • Extend and offset faces.
 • Create thicken and draft faces.

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

Or
 • NX CAD Fundamental Processes (TRCT2205-TC)

Or
 • NX CAD FastStart for Experienced 3D CAD Users (TRCT2210-TC)

Or

Domain knowledge:

Course Description

NX 9.0

Mechanical Freeform Modeling
With Teamcenter Integration

Course Code	TR10035-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **Mechanical Freeform Modeling** course will provide you with the skills to construct robust, dependable free form parts that update reliably and shift smoothly to the manufacturing application. You will learn methods to incorporate free form features into any part, from reverse engineered product models to complex engineering designs.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers
• Designers

PREREQUISITES

Required courses:
• Essentials for NX Designers (TR10051-TC)

Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

COURSE TOPICS

Curves:
 • Spline interfaces
 • Degree, segments and continuity
 • Bridge curves, intersection curves, offset curves, wrapped curves, and projected curves

Curve Analysis:
 • Poles, combs and deviation

Free Form Surfaces:
 • Swept, through curves and curve mesh
 • Section surfaces, face and soft blends and N-sided

Sheets to Solid Assistant

Face Analysis:

• Radius, reflections, deviation and slope

Trim:
 • Trim body, trim sheet and trim and extend

Patch Body

• Student Guide
• Activity Material

NX 10.0

Synchronous Modeling and Parametric Design (G2H)

With Teamcenter Integration

Course Code	TR10043-TCGH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Synchronous Modeling and Parametric Design** course is designed to sustain the momentum launched in earlier NX courses. As a second tier course, Synchronous Modeling and Parametric Design (SMP) aims to capitalize on the designers heightened skill level and propel his or her job productivity to the next level. This course includes key productivity skills that delve deeper into the advanced and associative modeling concepts.

Class is taught in the Teamcenter integration environment.

UPDATE: In newer versions, this course was renamed to CAD Product Design and Robust Modeling Techniques (TRCT2395TC). This updated course was designed by our US training experts.

WHO SHOULD ATTEND	COURSE TOPICS
• Engineers	**Day 1**

Course Description

- Designers
- CAD/CAM Managers

Required courses:
- CAD Fundamental Processes (TRCT2205-TC)

Or
- [Essentials for NX Designers](#) (TR10051-TC)

Or
- Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

- Student needs to have these concepts: Design in NX
- Working knowledge of sketching and assemblies

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

- Documenting design intent (Feature Groups, Product Interfaces)
- Editing parametric models (Replace features, Suppression by Expression, model updates)
- Associative curve operations (Project, Join, Intersect, Wrap/Unwrap, Text)

Day 2

- Emboss geometry (Emboss Body, Emboss, Offset Emboss)
- Blending techniques (Advanced Edge Blend options, Face blends)
- Interpart references (Interpart Expressions, Overriding Expressions)
- Capturing part shape variations (Deformable Parts)
- Design optimization (Optimization Study, Local and Global algorithms)

Day 3

- Intro to Synchronous modeling (Move, Pull, Replace, Delete Face)
- Modifying detail features using Synchronous (Resize Blend, Chamfer, Replace Blend)
- Reusing and relating faces using Synchronous (Pattern Face, Copy/Paste Face, Dimensions)
- Optional: History-Free Synchronous (Optimize Face, Adaptive Shell, Show Related)

Course Description

NX 9.0
Synchronous Modeling and Parametric Design (G2H)
With Teamcenter Integration

Course Code	TR10043-TCGH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Synchronous Modeling and Parametric Design** course is designed to sustain the momentum launched in earlier NX courses. As a second tier course, Synchronous Modeling and Parametric Design (SMP) aims to capitalize on the designers heightened skill level and propel his or her job productivity to the next level. This course includes key productivity skills that delve deeper into the advanced and associative modeling concepts.

Class is taught in the Teamcenter integration environment.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers
• Designers
• CAD/CAM Managers

COURSE TOPICS

 • Documenting design intent (Layers, Feature sets, Product Interfaces)
 • Editing parametric models (Replace features, Suppression, model updates)
 • Associative curve operations (Project, Join, Intersect, Wrap/Unwrap, Text)
 • General pockets and pads (General, Emboss, Offset)
 • Blending techniques (Overflow, Edge options, Face blends and options)
 • Design optimization (Optimization study, options, algorithms)
 • Synchronous modeling (History and History Free Mode)
 • Design intent and model construction

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

 • Student needs to have these concepts: Design in NX and Sketcher
 • And have working knowledge of assemblies

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

Synchronous Modeling Fundamentals
With Teamcenter Integration

Course Code	TR10045-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

 The **Synchronous Modeling Fundamentals course** is aimed at progressive users who are already familiar with NX, but want to learn how to start leveraging the Synchronous Modeling next generation design tool. Synchronous technology unites parametric and history-free modeling regardless of its origins or associativity. This course provides hands-on activities and 2 practice projects that focus on history-free and parametric constraint-driven techniques to accelerate the design process used to create new parts, and to edit existing parts

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers
• Designers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

 • Or the Feature Modeling - Fundamentals self-paced courses in Learning Advantage.
 • Prerequisite concepts: design in NX and sketching

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Modeling modes and switching between them
 • Working in history-free mode
 • Synchronous modeling constraints (make tangent, make parallel, etc.)
 • Pull face
 • Dimension commands
 • Reuse commands (copy/paste faces)
 • Pattern Face
 • Offset region
 • Replace face
 • Delete face
 • 2 projects

Course Description

NX 10.0

Essentials for NX Designers
With Teamcenter Integration

Course Code	TR10051-TC
User Level	Beginner
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment.

Learn the essential NX workflows necessary for creating and editing parametric models.

You will learn how to create sketches to capture design intent, how to model a part efficiently, as well as assemble parts into product assemblies and produce drawings.

UPDATE: If you are considering this course, please also consider the NX CAD Fundamental Processes course as an alternative. The NX CAD Fundamental Processes course was designed by our US training experts and exceeds the course objectives of the Essentials for NX Designers course above. Similar in content, but designed as a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers, designers, drafters, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

COURSE TOPICS

• Work with NX part files and NX template files
• Understand how to effectively use the NX user interface and work space
• Create sketches to capture design intent
• Create reference geometry for model development such as datum planes, axes, and coordinate systems
• Create basic features by sweeping and extruding geometry
• Analyze feature geometry
• Add detail to features such as blends and drafts
• Produce assemblies of component parts
• Produce annotated 2D drawings of models

Course Description

NX 10.0

Essentials for NX Designers
Essential Topics

Course Code	TR10051-TC
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Este curso se imparte en el entorno de integración de Teamcenter. </ Strong> </ p>
<P> Aprenda los flujos de trabajo NX necesarios para crear y editar modelos paramétricos. </ P>
<P> Aprenderá cómo crear bocetos para capturar la intención del diseño, cómo modelar una pieza de manera eficiente, así como ensamblar piezas en ensamblajes de productos y producir dibujos. </ P>
<P> </ p>
<P> <strong> ACTUALIZACIÓN: </ strong> Si está considerando este curso, considere también el Procesos Fundamentales NX CAD como alternativa. El curso Procesos Fundamentales CAD NX fue diseñado por nuestro departamento de formación en los Estados Unidos Expertos y supera los objetivos del curso Essentials for NX Designers arriba. Similar en el contenido, pero diseñado como un producto basado en el proceso con más ricas actividades prácticas que ayudarán a los usuarios a ser rápidamente eficientes en el uso de

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros, diseñadores, redactores, inspectores y administradores que necesitan administrar y utilizar NX.
</ Li>
</ Ul>

PREREQUISITES

<P><P> Ninguno </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 10. </ p>

COURSE TOPICS

• Work with NX part files and NX template files
• Understand how to effectively use the NX user interface and work space
• Create sketches to capture design intent
• Create reference geometry for model development such as datum planes, axes, and coordinate systems
• Create basic features by sweeping and extruding geometry
• Analyze feature geometry
• Add detail to features such as blends and drafts
• Produce assemblies of component parts
• Produce annotated 2D drawings of models

Course Description

NX 9.0
Essentials for NX Designers
With Teamcenter Integration

Course Code	TR10051-TC
User Level	Beginner
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

Essentials for NX Designers   as the initial class, is designed to launch students on the path of productivity. This course is designed to meet the student's expectation to transfer classroom instruction to productivity on the job. The Essentials for NX Designers course engages the student through professional instruction pertaining to product model design, product model detailing, assembly modeling and the basics of the master model concept.

At the completion of Essentials for NX Designers the student will productively develop solid models, detail drawings, and product assemblies. The class introduces assembly modeling in the context of a real-life scenario that includes parts modeled by the student as well as part models that have already been created. This reinforces the student's understanding of the flexibility of the solid modeling and assembly tool as it can be applied in the real world of product development collaboration. As with each course developed and taught by Siemens PLM Software professionals, the Essentials for NX Designers class capitalizes on Siemens PLM Software's intimate knowledge of the software's development and instructs the students based on the underlying principles incorporated within the NX software.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers
• Designers
• CAD/CAM Managers
• Drafters
• Checkers

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• User interface
• Holes
• Coordinate systems
• Create expressions
• Introduction to sketching
• Shell
• Datums
• Instance arrays
• Modeling theory – based on extrude, revolve
• Blending and chamfers
• Part structure and edits
• Basic assembly modeling
• Intermediate sketching topics
• Assembly constraints
• Trim body
• Master model concept
• Extrude options, including draft and limits
• Creating and editing drawings and annotation

Course Description

NX 10.0

Essentials for NX Designers

Course Code	TR10051
User Level	Beginner
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Learn the essential NX workflows necessary for creating and editing parametric models.

You will learn how to create sketches to capture design intent, how to model a part efficiently, as well as assemble parts into product assemblies and produce drawings.

UPDATE: If you are considering this course, please also consider the NX CAD Fundamental Processes course as an alternative. The NX CAD Fundamental Processes course was designed by our US training experts and exceeds the course objectives of the Essentials for NX Designers course above. Similar in content, but designed as a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND

• Engineers, designers, drafters, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

COURSE TOPICS

• Work with NX part files and NX template files
• Understand how to effectively use the NX user interface and work space
• Create sketches to capture design intent
• Create reference geometry for model development such as datum planes, axes, and coordinate systems
• Create basic features by sweeping and extruding geometry
• Analyze feature geometry
• Add detail to features such as blends and drafts
• Produce assemblies of component parts
• Produce annotated 2D drawings of models

Course Description

NX 11.0
Essentials for NX Designers
Essential Topics

Course Code	TR10051
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Este curso se imparte en el entorno de integración de Teamcenter. </ Strong> </ p>
<P> Aprenda los flujos de trabajo NX necesarios para crear y editar modelos paramétricos. </ P>
<P> Aprenderá cómo crear bocetos para capturar la intención del diseño, cómo modelar una pieza de manera eficiente, así como ensamblar piezas en ensamblajes de productos y producir dibujos. </ P>
<P> </ p>
<P> <strong> ACTUALIZACIÓN: </ strong> Si está considerando este curso, considere también el Procesos Fundamentales NX CAD como alternativa. El curso Procesos Fundamentales CAD NX fue diseñado por nuestro departamento de formación en los Estados Unidos Expertos y supera los objetivos del curso Essentials for NX Designers arriba. Similar en el contenido, pero diseñado como un producto basado en el proceso con más ricas actividades prácticas que ayudarán a los usuarios a ser rápidamente eficientes en el uso de

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros, diseñadores, redactores, inspectores y administradores que necesitan administrar y utilizar NX.
</ Li>
</ Ul>

PREREQUISITES

<P><P> Ninguno </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 10. </ p>

COURSE TOPICS

• Work with NX part files and NX template files
• Understand how to effectively use the NX user interface and work space
• Create sketches to capture design intent
• Create reference geometry for model development such as datum planes, axes, and coordinate systems
• Create basic features by sweeping and extruding geometry
• Analyze feature geometry
• Add detail to features such as blends and drafts
• Produce assemblies of component parts
• Produce annotated 2D drawings of models

Course Description

NX 9.0

Essentials for NX Designers

Essential Topics

Course Code	TR10051
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Este curso se imparte en el entorno de integración de Teamcenter. </ Strong> </ p>
<P> Aprenda los flujos de trabajo NX necesarios para crear y editar modelos paramétricos. </ P>
<P> Aprenderá cómo crear bocetos para capturar la intención del diseño, cómo modelar una pieza de manera eficiente, así como ensamblar piezas en ensamblajes de productos y producir dibujos. </ P>
<P> </ p>
<P> <strong> ACTUALIZACIÓN: </ strong> Si está considerando este curso, considere también el Procesos Fundamentales NX CAD como alternativa. El curso Procesos Fundamentales CAD NX fue diseñado por nuestro departamento de formación en los Estados Unidos Expertos y supera los objetivos del curso Essentials for NX Designers arriba. Similar en el contenido, pero diseñado como un producto basado en el proceso con más ricas actividades prácticas que ayudarán a los usuarios a ser rápidamente eficientes en el uso de

WHO SHOULD ATTEND	COURSE TOPICS

<Ul>
<Li> Ingenieros, diseñadores, redactores, inspectores y administradores que necesitan administrar y utilizar NX.
</ Li>
</ Ul>

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 10. </ p>

• Work with NX part files and NX template files
• Understand how to effectively use the NX user interface and work space
• Create sketches to capture design intent
• Create reference geometry for model development such as datum planes, axes, and coordinate systems
• Create basic features by sweeping and extruding geometry
• Analyze feature geometry
• Add detail to features such as blends and drafts
• Produce assemblies of component parts
• Produce annotated 2D drawings of models

Course Description

NX 10.0

Basic Design
With Teamcenter Integration

Course Code	TR10053-TC
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter Integration environment.

Basic Design is designed to give an entry level user a high-level overview of NX modeling, assemblies and drafting topics. This one class, through professional instruction related to product design, assembly modeling, and master model concepts, allows the student to transfer classroom instruction to job productivity.

 At the completion of the **Basic Design** class, the student will be able to develop basic solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite. The NX Basic Design class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and modify basic assembly structures
 • Create and edit parametric solid models
 • Create and modify simple drawings

UPDATE: If you are considering this course, please also consider the NX CAD Basic Processes course as an alternative. The NX CAD Basic Processes course was designed by our US training experts and exceeds the course objectives of the Basic Design course above. Similar in content, but designed as a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND	COURSE TOPICS
Designers, engineers, manufacturing engineers, application programmers, NC programmers, CAD/CAM managers, and system managers who need to manage and use NX	• Introduction and overview • NX part files • User interface • Sketching • Datum features • Swept features • Holes • Edge operations • Introduction to assemblies

PREREQUISITES	
None	

• Assembly constraints
• Introduction to drafting

• Student Guide
• Activity Material

For **LIVE!** classes, customers are required to have NX
10 installed.

NX 9.0

Basic Design
With Teamcenter Integration

Course Code	TR10053-TC
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter Integration environment.

Basic Design is designed to give an entry level user a high-level overview of NX modeling, assemblies and drafting topics. This one class, through professional instruction related to product design, assembly modeling, and master model concepts, allows the student to transfer classroom instruction to job productivity.

 At the completion of the **Basic Design** class, the student will be able to develop basic solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite. The NX Basic Design class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Open and examine NX models
• Create and modify basic assembly structures
• Create and edit parametric solid models
• Create and modify simple drawings

Course Description

Designers, engineers, manufacturing engineers, application programmers, NC programmers, CAD/CAM managers, and system managers who need to manage and use NX

PREREQUISITES

None

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

COURSE TOPICS

- Introduction and overview
- NX part files
- User interface
- Sketching
- Datum features
- Swept features
- Holes
- Edge operations
- Introduction to assemblies
- Assembly constraints
- Introduction to drafting

Course Description

NX 9.0

Basic Design

Course Code	TR10053
User Level	Beginner
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Diseño básico </ strong> proporciona a un usuario de nivel de entrada una visión general de alto nivel del modelado NX, los ensamblajes y Redacción de temas. Esta clase es un subconjunto de la funcionalidad NX enseñada en Essentials for NX Designers. Está diseñado para adaptarse a otros cursos como Drafting Essentials y NX Manufacturing Fundamentals para hacer una semana de entrenamiento. </ P>

<P> Al finalizar la clase <strong> Diseño Básico </ strong>, el alumno será capaz de desarrollar modelos básicos sólidos y de ensamblaje, así como dibujos utilizando el concepto de modelo maestro. Estos conceptos pueden aplicarse en el mundo real del desarrollo y la colaboración de productos. Al igual que con cada curso desarrollado y enseñado por profesionales de Siemens PLM Software, esta clase refuerza nuestro conocimiento íntimo de los desarrollos de software e instruye a los estudiantes sobre la base de los principios subyacentes incorporados dentro de la suite de productos NX

La clase NX Basic Design fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente: </ p>

<Ul>
<Li> Abrir y examinar modelos NX </ li>
<Li> Crear y modificar estructuras de ensamblaje básicas </ li>
<Li> Crear y editar modelos sólidos paramétricos </ li>
<Li> Cree y modifique dibujos simples </ li>
</ Ul>

WHO SHOULD ATTEND

Diseñadores, ingenieros, ingenieros de manufactura, programadores de aplicaciones, programadores NC, administradores CAD / CAM y administradores de sistemas que necesitan administrar y usar NX </ p>

PREREQUISITES

<P><P> Ninguno </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction and overview
• NX part files
• User interface
• Sketching
• Datum features
• Swept features
• Holes
• Edge operations
• Introduction to assemblies
• Assembly constraints
• Introduction to drafting

Course Description

NX 10.0

Intermediate NX Design and Assemblies
With Teamcenter Integration

Course Code	TR10056-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

Intermediate NX Design and Assemblies is designed to advance students further up the productivity curve. As a second tier course Intermediate NX Design and Assemblies builds on the tools you deployed as a result of attending the Essentials for NX Designers course. This method-based course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. Delivering on that outcome, this course will incorporate sketching, inter-part modeling, design intent, and several assembly topics as a significant part of the instruction.

UPDATE: If you are considering this course, please also consider the NX CAD Advanced Processes course as an alternative. The NX CAD Advanced Processes course was designed by our US training experts and exceeds the course objectives of the Intermediate NX Design and Assemblies course above. Similar in content, but designed as a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

Or

 • NX CAD Fundamental Processes (TRCT2205-TC)

Or

 • Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Basic understanding of parametric modeling, and the

COURSE TOPICS

• Pattern sketch curves
• Offset sketch curves
• Create a basic free form shape
• Create expressions with measurements
• Copy/paste a feature
• Create reference sets
• Create draft
• Use Synchronous Modeling
• Create a variable blend
• Create component patterns
• Apply top down assembly modeling
• Design "in context"
• Use the WAVE geometry linker
• Create interpart references
• Define remembered assembly constraints
• Define a revision identifier
• Understand component replacement methods
• Manage assembly arrangements

Course Description

Working knowledge of the following:

 • NX interface
 • Creating, opening, and saving parts in a Teamcenter
Integration environment.
 • Part file saving conventions
 • Sketching and constraining techniques
 • Adding and constraining assembly components
 • Swept features with optional Offset
 • WCS & Absolute coordinate systems
 • Layer control
 • Simple blends

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0

Intermediate NX Design and Assemblies
With Teamcenter Integration

Course Code	TR10056-TC
User Level	Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

La clase se imparte en el entorno de integración de Teamcenter.

Intermediate NX Design and Assemblies Está diseñado para hacer avanzar a los estudiantes más arriba de la curva de productividad. Como un curso de segundo nivel, Intermediate NX Design and Assemblies se basa en las herramientas que implementó como resultado de asistir al curso Essentials for NX Designers. Este curso basado en métodos enfoca al estudiante en técnicas de modelado productivo que capturan la intención de diseño en el contexto del Modelo Maestro. Cumpliendo con ese resultado, este curso incorporará el bosquejo, el modelado entre partes, la intención de diseño y varios temas de ensamblaje como una parte significativa de la instrucción.

UPDATE: If you are considering this course, please also consider the NX CAD Advanced Processes course as an alternative. The NX CAD Advanced Processes course was designed by our US training experts and exceeds the course objectives of the Intermediate NX Design and Assemblies course above. Similar in content, but designed as a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND	COURSE TOPICS

 • This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

Or
 • NX CAD Fundamental Processes (TRCT2205-TC)

Or
 • Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

COURSE TOPICS

• Pattern sketch curves
• Offset sketch curves
• Create a basic free form shape
• Create expressions with measurements
• Copy/paste a feature
• Create reference sets
• Create draft
• Use Synchronous Modeling
• Create a variable blend
• Create component patterns
• Apply top down assembly modeling
• Design "in context"
• Use the WAVE geometry linker
• Create interpart references
• Define remembered assembly constraints
• Define a revision identifier
• Understand component replacement methods
• Manage assembly arrangements

Course Description

Master Model Concept.

Working knowledge of the following:

 • NX interface
 • Creating, opening, and saving parts in a Teamcenter
Integration environment.
 • Part file saving conventions
 • Sketching and constraining techniques
 • Adding and constraining assembly components
 • Swept features with optional Offset
 • WCS & Absolute coordinate systems
 • Layer control
 • Simple blends

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 11.0

Intermediate NX Design and Assemblies
With Teamcenter Integration

Course Code	TR10056-TC
User Level	Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> La clase se enseña en el entorno de integración de Teamcenter. </ Strong> </ p> <p> <strong> Diseño y ensamblajes NX intermedios </ strong> está diseñado para hacer avanzar a los estudiantes en la curva de productividad. Como un curso de segundo nivel, Intermediate NX Design and Assemblies se basa en las herramientas que implementó como resultado de asistir al curso Essentials for NX Designers. Este curso basado en métodos enfoca al estudiante en técnicas de modelado productivo que capturan la intención de diseño en el contexto del Modelo Maestro. Cumpliendo con este resultado, este curso incorporará el bosquejo, el modelado entre partes, la intención de diseño y varios temas de ensamblaje como una parte significativa de la instrucción. </ P>

<P> </ p>

<P> <strong> ACTUALIZACIÓN: </ strong> Si está considerando este curso, considere también el Procesos avanzados NX CAD como alternativa. El curso Procesos avanzados NX CAD fue diseñado por nuestro departamento de formación en los Estados Unidos Expertos y excede los objetivos del curso de Diseño Intermedio NX y Asambleas curso anterior. Similar en el contenido, pero diseñado como un producto basado en el proceso con más ricas actividades prácticas que ayudarán a los usuarios a ser rápidamente

WHO SHOULD ATTEND	COURSE TOPICS

<Ul>
<Li> Este curso es para diseñadores, ingenieros y administradores CAD / CAM que necesitan crear modelos sólidos paramétricos que capturen la intención del diseño. </ Li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Essentials for NX Designers (TR10051)
<P><B> O

<P> Realización exitosa de la evaluación previa de Essentials for Designers en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ P>

<P> Comprensión básica del modelado paramétrico, y el concepto de modelo maestro. </ P>

<P> Conocimiento práctico de lo siguiente: </ p>
<Ul>

COURSE TOPICS

- Pattern sketch curves
- Offset sketch curves
- Create a basic free form shape
- Create expressions with measurements
- Copy/paste a feature
- Create reference sets
- Create draft
- Use Synchronous Modeling
- Create a variable blend
- Create component patterns
- Apply top down assembly modeling
- Design "in context"
- Use the WAVE geometry linker
- Create interpart references
- Define remembered assembly constraints
- Define a revision identifier
- Understand component replacement methods
- Manage assembly arrangements

Course Description

<Li> Interfaz NX </ li>
<Li> Crear, abrir y guardar partes en un entorno de integración de Teamcenter. </ Li>
<Li> Convenciones de ahorro de archivos de pieza </ li>
<Li> Técnicas de bosquejo y restricción </ li>
<Li> Adición y restricción de componentes de ensamblaje </ li>
<Li> Funciones barridas con desplazamiento opcional </ li>
<Li> WCS y sistemas de coordenadas absolutos </ li>
<Li> Control de capa </ li>
<Li> Mezclas simples </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

Intermediate NX Design and Assemblies
With Teamcenter Integration

Course Code	TR10056-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

Intermediate NX Design and Assemblies is designed to advance students further up the productivity curve. As a second tier course Intermediate NX Design and Assemblies builds on the tools you deployed as a result of attending the Essentials for NX Designers course. This method-based course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. Delivering on that outcome, this course will incorporate sketching, inter-part modeling, design intent, and several assembly topics as a significant part of the instruction.

WHO SHOULD ATTEND

• Engineers
• Designers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Sketching
• Associative Offset Curves
• Expressions
• Duplicating Features
• Assembly functions
• Part Families
• Top/down assembly modeling
• Assembly Arrangements
• Face Operations
• Extract and Delete Face
• Interpart modeling
• Interpart expressions
• Variable and Overflow blends
• Component Arrays
• Revise & Replace Components

NX 10.0

Intermediate NX Design and Assemblies

Course Code	TR10056
User Level	Intermediate
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Intermediate NX Design and Assemblies is designed to advance students further up the productivity curve. As a second tier course Intermediate NX Design and Assemblies builds on the tools you deployed as a result of attending the Essentials for NX Designers course. This method-based course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. Delivering on that outcome, this course will incorporate sketching, inter-part modeling, design intent, and several assembly topics as a significant part of the instruction

UPDATE: If you are considering this course, please also consider the NX CAD Advanced Processes course as an alternative. The NX CAD Advanced Processes course was designed by our US training experts and exceeds the course objectives of the Intermediate NX Design and Assemblies course above. Similar in content, but designed as a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND

 • This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

<P>Required courses:</P>
Essentials for NX Designers (TR10051)
<P><p>Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.</p> <p>Basic understanding of parametric mode</P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Pattern sketch curves
• Offset sketch curves
• Create a basic free form shape
• Create expressions with measurements
• Copy/paste a feature
• Create reference sets
• Create draft
• Use Synchronous Modeling
• Create a variable blend
• Create component patterns
• Apply top down assembly modeling
• Design "in context"
• Use the WAVE geometry linker
• Create interpart references
• Define remembered assembly constraints
• Define a revision identifier
• Understand component replacement methods
• Manage assembly arrangements

Course Description

NX 10.0

Intermediate NX Design and Assemblies

Essential Topics

Course Code	TR10056
User Level	Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> La clase se imparte en el entorno de integración de Teamcenter </ strong> </ p> <p> <strong> Diseño y ensamblajes NX intermedios </ strong> Está diseñado para avanzar a los estudiantes más Arriba de la curva de productividad. Como un curso de segundo nivel, Intermedio NX Diseño y Asambleas se basa en las herramientas que implementaron como resultado de asistir al curso Essentials for NX Designers. Este estudio basado en los métodos enfoca al estudiante en técnicas de modelado productivo que capturan la intención de diseño en el contexto del modelo Maestro. Cumpliendo con ese resultado, este curso incorporó el bosquejo, el modelado entre partes, la intención de diseño y varios temas de ensamblaje como una parte significativa de la instrucción. </ P>

<P> </ p>

<P> <strong> ACTUALIZACIÓN: </ strong> Si está considerando este curso, considere también el Procesos avanzados NX CAD como alternativa. El curso Procesos avanzados CAD NX fue diseñado por nuestro equipo de formación en los Estados Unidos Expertos y excede los objetivos del curso de Diseño Intermedio NX y Asambleas curso anterior. Similar en el contenido, pero diseñado como un producto basado en el proceso con más ricas actividades prácticas que ayudarán a los usuarios a ser rápidamente eficientes en

WHO SHOULD ATTEND

<Ul>
<Li> Este curso es para diseñadores, ingenieros y administradores CAD / CAM que necesitan crear modelos sólidos paramétricos que capturen la intención del diseño. </ Li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Essentials for NX Designers (TR10051)
<P><B> O </ b>
<Ul>
<Li> Procesos fundamentales de NX CAD (TRCT2205-TC) </ Li>
</ Ul>
<B> O </ b>
<Ul>

COURSE TOPICS

• Pattern sketch curves
• Offset sketch curves
• Create a basic free form shape
• Create expressions with measurements
• Copy/paste a feature
• Create reference sets
• Create draft
• Use Synchronous Modeling
• Create a variable blend
• Create component patterns
• Apply top down assembly modeling
• Design "in context"
• Use the WAVE geometry linker
• Create interpart references
• Define remembered assembly constraints
• Define a revision identifier
• Understand component replacement methods
• Manage assembly arrangements

Essentials for Designers en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
<P> Comprensión básica del modelado paramétrico, y el concepto de modelo maestro. </ P>
<P> Conocimiento práctico de lo siguiente: </ p>
<Ul>
<Li> Interfaz NX </ li>
<Li> Crear, abrir y guardar partes en un entorno de integración de Teamcenter. </ Li>
<Li> Convenciones de ahorro de archivos de pieza </ li>
<Li> Técnicas de bosquejo y restricción </ li>
<Li> Adición y restricción de componentes de ensamblaje </ li>
<Li> Funciones barridas con desplazamiento opcional </ li>
<Li> WCS y sistemas de coordenadas absolutos </ li>
<Li> Control de capa </ li>
<Li> Mezclas simples </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 11.0
Intermediate NX Design and Assemblies
Essential Topics

Course Code	TR10056
User Level	Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
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WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<Ul>
<Li> Este curso es para diseñadores, ingenieros y administradores CAD / CAM que necesitan crear modelos sólidos paramétricos que capturen la intención del diseño. </ Li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Essentials for NX Designers (TR10051)
<P><B> O </ b>
<Ul>
<Li> Procesos fundamentales de NX CAD (TRCT2205-TC) </ Li>
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COURSE TOPICS

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Essentials for Designers en Learning Advantage
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evaluación previa. </ Li>
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<Li> Interfaz NX </ li>
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ensamblaje </ li>
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<Li> Control de capa </ li>
<Li> Mezclas simples </ li>
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PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

Intermediate NX Design and Assemblies
Essential Topics

Course Code	TR10056
User Level	Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
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WHO SHOULD ATTEND	COURSE TOPICS

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<Li> Este curso es para diseñadores, ingenieros y administradores CAD / CAM que necesitan crear modelos sólidos paramétricos que capturen la intención del diseño. </ Li>
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PREREQUISITES

<P>Required courses:</P>
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COURSE TOPICS

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Course Description

Essentials for Designers en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
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<P> Comprensión básica del modelado paramétrico, y el concepto de modelo maestro. </ P>
<P> Conocimiento práctico de lo siguiente: </ p>
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<Li> Interfaz NX </ li>
<Li> Crear, abrir y guardar partes en un entorno de integración de Teamcenter. </ Li>
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<Li> WCS y sistemas de coordenadas absolutos </ li>
<Li> Control de capa </ li>
<Li> Mezclas simples </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

Industrial Design using NX (G2H)

Course Code	TR10060-GH
User Level	Intermediate
Language	English
Price	$4,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Industrial Design using NX** course provides the student with the knowledge and skills to define styling shapes using complex curves and surfaces. Upon completion of this course, the student will possess the skills required to create high curvature, complex surfaces with tangent and/or curvature continuity and create blends and transition surfaces. The student will also learn to dynamically edit and analyze surfaces and showcase products by application of advanced visualization techniques.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Industrial designers

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

 • Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.
 • Introduction to Industrial Design (a Learning Advantage self paced course)
 • The student should understand the surfacing and blending concepts and have a working knowledge of free form modeling

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Spline review
• Creating splines
• Studio splines
• Construction and reference geometry
• Working with raster images
• Curve tools 1
• Introduction to studio surfaces
• Introduction to shape analysis
• Workflow 1
• Studio surfaces 2
• Additional Free Form features
• Blending
• Curve tools 2
• Workflow 2
• Trim
• Enlarge
• Shape analysis 2
• Workflow 3
• Deviation analysis
• Refit face
• Visualization techniques
• Project: Exact modeling
• Project: Overbuilt surfaces
• Project: Direct modeling
• Text to geometry
• Reverse engineering

NX 9.0

Industrial Design using NX

Course Code	TR10060
User Level	Intermediate
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Diseño Industrial utilizando NX </ strong> proporciona al estudiante los conocimientos y habilidades para definir formas de estilo utilizando curvas y superficies complejas. Al finalizar este curso, el estudiante poseerá las habilidades necesarias para crear superficies complejas de alta curvatura con continuidad de tangente y / o curvatura y crear mezclas y superficies de transición. El alumno también aprenderá a editar dinámicamente y analizar superficies y mostrar productos mediante la aplicación de técnicas avanzadas de visualización. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

<P> Diseñadores industriales </ p>

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><Ul>
<Li> O la finalización exitosa de la evaluación previa de Essentials for Designers en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
<Li> Introducción al diseño industrial (un curso de autoaprendizaje Learning Advantage) </ li>
<Li> El estudiante debe entender los conceptos de revestimiento y mezcla y tener un conocimiento práctico del modelado de forma libre </ li>
</ Ul></P>

- Spline review
- Creating splines
- Studio splines
- Construction and reference geometry
- Working with raster images
- Curve tools 1
- Introduction to studio surfaces
- Introduction to shape analysis
- Workflow 1
- Studio surfaces 2
- Additional Free Form features
- Blending
- Curve tools 2
- Workflow 2
- Trim
- Enlarge

Course Description

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

• Shape analysis 2
• Workflow 3
• Deviation analysis
• Refit face
• Visualization techniques
• Project: Exact modeling
• Project: Overbuilt surfaces
• Project: Direct modeling
• Text to geometry
• Reverse engineering

Course Description

NX 10.0

Using NX Visualization and Animation
to add visual impact to your designs

Course Code	TR100ES03L
User Level	Intermediate
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This session will cover several workflows for adding visual impact to your NX designs. You will learn how to create realistic images and animations using the dynamic display options available within the NX Visualization design tools.

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Modeling, Assemblies, and working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Students will need NX 10.0 in order to participate in the hands-on activities.

COURSE TOPICS

 • Introduction to various Visualization workflows and applications
 • Indentify the capabilities provided with Advanced Studio Display
 • Create high quality renderings
 • Use Ray Tray Studio to generate and export images
 • Utilize and customize system scenes
 • Apply materials, textures, and decals to NX models
 • Define cameras and lights using NX visualization tools
 • Create high quality animations
 • Define turntable and trajectory curve animations
 • Control model and assembly changes during an animation sequence

Course Description

NX 9.0

Using NX Visualization and Animation
to add visual impact to your designs

Course Code	TR100ES03L
User Level	Intermediate
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This session will cover several workflows for adding visual impact to your NX designs. You will learn how to create realistic images and animations using the dynamic display options available within the NX Visualization design tools.

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Modeling, Assemblies, and working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Students will need NX 9.0 in order to participate in the hands-on activities.

COURSE TOPICS

 • Introduction to various Visualization workflows and applications
 • Indentify the capabilities provided with Advanced Studio Display
 • Create high quality renderings
 • Utilize and customize system scenes
 • Apply materials, textures, and decals to NX models
 • Define cameras and lights using NX visualization tools
 • Create high quality animations
 • Define turntable and trajectory curve animations
 • Control model and assembly changes during an animation sequence

Course Description

NX 10.0

NX Administration

Course Code	TR100ES04L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

NX Administration covers how to modify and configure an existing NX installation with some of the more commonly modified settings. Topics include how to install/configure the Machinery Library, how to configure the File New dialog to see customer template files, how to convert a Part Family to a Knowledge Enabled Reuse object, and much more.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• System Administrators
• CAD/CAM Managers
• Designers

COURSE TOPICS

• Installation of the Machinery Library
• Setup of Reusable Objects
• Setup of custom File>New templates
• Creation of custom NX User and Group Roles
• Customization of the NX interface
• Creation of simple Macros linked to an icon
• Configuration of commonly used Environment Variables
• Review of Customer Defaults used for NX customization and administration

PREREQUISITES

Working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

For this **LIVE!** class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for post-class access to training materials.

Course Description

NX 11.0

NX Administration

Course Code	TR100ES04L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

NX Administration covers how to modify and configure an existing NX installation with some of the more commonly modified settings. Topics include how to install/configure the Machinery Library, how to configure the File New dialog to see customer template files, how to convert a Part Family to a Knowledge Enabled Reuse object, and much more.

WHO SHOULD ATTEND

• System Administrators
• CAD/CAM Managers
• Designers

PREREQUISITES

Working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

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A Learning Advantage account will be provided to each student for post-class access to training materials.

COURSE TOPICS

• Installation of the Machinery Library
• Setup of Reusable Objects
• Setup of custom File>New templates
• Creation of custom NX User and Group Roles
• Configuration of Fastener Assemblies
• Customization of the NX interface
• Creation of simple Macros linked to an icon
• Configuration of commonly used Environment Variables
• Review of Customer Defaults used for NX customization and administration

Course Description

NX 11.0

NX Administration

Course Code	TR100ES04L
User Level	Intermediate
Language	Spanish
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <strong> Administración de NX </ strong> explica cómo modificar y configurar una instalación de NX existente con algunas de las configuraciones más comúnmente modificadas. Los temas incluyen cómo instalar / configurar la biblioteca de la máquina, cómo configurar el cuadro de diálogo Nuevo archivo para ver los archivos de la plantilla del cliente, cómo convertir una familia de piezas en un objeto habilitado Reutilización del conocimiento, y mucho más. </ P>

WHO SHOULD ATTEND

 Administradores del sistema </ li>
 Administradores CAD / CAM </ li>
 Diseñadores </ li>
</ ul>

PREREQUISITES

<P><p> Conocimiento práctico de NX. </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

<p> Para las clases <b> ¡EN VIVO! </ b>, los clientes deben tener instalado NX 11. </ p>
<p> Se proporcionará una cuenta de Learning Advantage a cada estudiante para el acceso posterior a la clase a los materiales de capacitación. </ p >>

COURSE TOPICS

<p>

 Installation of the Machinery Library </ li>
 Configuration of reusable objects </ li>
 Custom file settings> New templates </ li>
 Creation of custom user roles and NX group </ li>
 Configuration of fastener assemblies </ li>
 Customization of the NX interface </ li>
 Creating simple macros linked to an icon </ li>
 Configuration of common environment variables </ li>
 Review of the client's default values for NX personalization and administration </ li>
</ ul>
</ p>

Course Description

NX 12.0

NX Administration

Course Code	TR100ES04L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

NX Administration covers how to modify and configure an existing NX installation with some of the more commonly modified settings. Topics include how to install/configure the Machinery Library, how to configure the File New dialog to see customer template files, how to convert a Part Family to a Knowledge Enabled Reuse object, and much more.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• System Administrators
• CAD/CAM Managers
• Designers

PREREQUISITES

Working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

For this **LIVE!** class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for post-class access to training materials.

COURSE TOPICS

• Installation of the Machinery Library
• Setup of Reusable Objects
• Setup of custom File>New templates
• Creation of custom NX User and Group Roles
• Configuration of Fastener Assemblies
• Customization of the NX interface
• Creation of simple Macros linked to an icon
• Configuration of commonly used Environment Variables
• Review of Customer Defaults used for NX customization and administration

Course Description

NX 9.0

NX Administration

Course Code	TR100ES04L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND

• System Administrators
• CAD/CAM Managers
• Designers

PREREQUISITES

Working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

A Learning Advantage account will be provided to each student for post-class access to training materials

COURSE TOPICS

• Installation of the Machinery Library
• Setup of Reusable Objects
• Setup of custom File>New templates
• Creation of custom NX User and Group Roles
• Customization of the NX interface
• Creation of simple Macros linked to an icon
• Configuration of commonly used Environment Variables
• Review of Customer Defaults used for NX customization and administration

Course Description

NX 9.0

NX Survival Training

Course Code	TR100ES05L
User Level	Beginner to Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

NX 9 survival training introduces you to the new "ribbon" user interface as well as critical new capabilities to enhance productivity. In four hours, you will be familiar enough with this new version to get back to work, and to decide how much more transition training you need. This session will also cover NX 8.5 and NX 9 enhancements in sketching, modeling, and assemblies.

WHO SHOULD ATTEND

• Designers
• Process Engineers
• CAD/CAM Managers

PREREQUISITES

Modeling, Assemblies, and working knowledge of NX 8.

Other recommended courses:

Learning Advantage transition courses:
• NX 7.5 to NX 9
• NX 8.5 to NX 9

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

A Learning Advantage account will be provided to each student for post-class access to training materials. Access to NX during class is not required.

COURSE TOPICS

 • Introduction to Ribbon Bar interface

Enhancements for the following:

• Sketch dimensional and geometric constraints
• Pattern and Mirror geometry
• Selection intent
• Shortcut toolbars
• Rib and Emboss Body commands
• Assembly Navigator Order of Components
• Assembly Pattern Component command
• Align/Lock assembly constraint
• Create Multiple Interpart Expressions
• Local Untrim and Extend of surfaces
• Replace Edge command

Course Description

NX 10.0

Being Successful using Data Translators

Course Code	TR100ES06L
User Level	Beginner to Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In today's engineering project environment, the need to share data with others is an important part of daily work. Thus, the need to use data translation to create neutral format files to accurately share this data between dissimilar CAD systems becomes important. This session will cover the both the import and export of model, assembly, and drawing CAD data.

WHO SHOULD ATTEND

• Designers
• Drafters
• NC Programmers
• System administrators
• CAD/CAM Managers

PREREQUISITES

General working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Students will need NX 10.0 in order to participate in the hands-on activities.

A Learning Advantage account will be provided to each student for post-class access to training materials.

COURSE TOPICS

• General overview of the available neutral format translators in NX
• Translating files using the NX Import commands
• Bulk translating files using the NX Data Exchange interface
• Using the 2D Exchange translator
• Working with STEP, IGES, Parasolid, and DXF/DWG formats
• Validating data before and after the translation
• Tips and techniques for developing a translations process
• Identifying differences between performing translations using native NX and NX with Teamcenter integration

Course Description

NX 11.0

Being Successful using Data Translators

Course Code	TR100ES06L
User Level	Beginner to Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In today's engineering project environment, the need to share data with others is an important part of daily work. Thus, the need to use data translation to create neutral format files to accurately share this data between dissimilar CAD systems becomes important. This session will cover the both the import and export of model, assembly, and drawing CAD data.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Drafters
• NC Programmers
• System administrators
• CAD/CAM Managers

COURSE TOPICS

 • General overview of the available neutral format translators in NX
 • Translating files using the NX Import commands
 • Bulk translating files using the NX Data Exchange interface
 • Using the 2D Exchange translator
 • Working with STEP, IGES, Parasolid, and DXF/DWG formats
 • Validating data before and after the translation
 • Tips and techniques for developing a translations process
 • Identifying differences between performing translations using native NX and NX with Teamcenter integration

PREREQUISITES

General working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 11 installed.

A Learning Advantage account will be provided to each student for post-class access to training materials.

Course Description

NX 12.0

Being Successful using Data Translators

Course Code	TR100ES06L
User Level	Beginner to Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In today's engineering project environment, the need to share data with others is an important part of daily work. Thus, the need to use data translation to create neutral format files to accurately share this data between dissimilar CAD systems becomes important. This session will cover the both the import and export of model, assembly, and drawing CAD data.

WHO SHOULD ATTEND

• Designers
• Drafters
• NC Programmers
• System administrators
• CAD/CAM Managers

PREREQUISITES

General working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

A Learning Advantage account will be provided to each student for post-class access to training materials.

COURSE TOPICS

• General overview of the available neutral format translators in NX
• Translating files using the NX Import commands
• Bulk translating files using the NX Data Exchange interface
• Using the 2D Exchange translator
• Working with STEP, IGES, Parasolid, and DXF/DWG formats
• Validating data before and after the translation
• Tips and techniques for developing a translations process
• Identifying differences between performing translations using native NX and NX with Teamcenter integration

Course Description

NX 9.0

Being Successful using Data Translators

Course Code	TR100ES06L
User Level	Beginner to Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In today's engineering project environment, the need to share data with others is an important part of daily work. Thus, the need to use data translation to create neutral format files to accurately share this data between dissimilar CAD systems becomes important. This session will cover the both the import and export of model, assembly, and drawing CAD data.

WHO SHOULD ATTEND

• Designers
• Drafters
• NC Programmers
• System administrators
• CAD/CAM Managers

PREREQUISITES

General working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Students will need NX 9.0 in order to participate in the hands-on activities.

A Learning Advantage account will be provided to each student for post-class access to training materials.

COURSE TOPICS

• General overview of the available neutral format translators in NX
• Translating files using the NX Import commands
• Bulk translating files using the NX Data Exchange interface
• Using the 2D Exchange translator
• Working with STEP, IGES, Parasolid, and DXF/DWG formats
• Validating data before and after the translation
• Tips and techniques for developing a translations process
• Identifying differences between performing translations using native NX and NX with Teamcenter integration

Course Description

NX 12.0

Introduction to Product Template Studio

Course Code	TR100ES07L
User Level	Beginner to Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The Introduction to Product Template Studio course will cover how to configure complex products into simple and reusable product templates. Topics include how to modify a model using an existing PTS template, defining custom dialog boxes to control part models, adding advanced design controls to a template, building requirement checks, and create visual rules.

WHO SHOULD ATTEND

• Designers
• Engineers
• System administrators
• CAD/CAM Managers

PREREQUISITES

Modeling, Assemblies, and general working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For LIVE! classes, customers are required to have NX 12.0.1 installed.

A Learning Advantage account will be provided to each student for post-class access to training materials.

The Product Template Studio Author license is required for practice exercises included in this training course.

COURSE TOPICS

• Use parametric solid models to create reusable product templates
• Define a template dialog box to control model parameters
• Add basic and advanced design controls to a template
• Include requirement checks in a template dialog box
• Create visual rules in a product template
• Control a product assembly using a template

Course Description

NX 10.0

Exploded Views and Parts List

Course Code	TR100ES31L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This session will cover the drafting workflow for creating exploded views, part attributes, parts list, and balloon callouts for assembly drawings.

WHO SHOULD ATTEND

• Drafters
• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Assemblies, Drafting, and working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

COURSE TOPICS

• Creating exploded isometric views
• Using automatic explosions
• Generating Tracelines for exploded views
• Adding and displaying Part Attributes for use in a Parts List
• Creating and editing Parts Lists for assembly drawings
• Editing parts list levels
• Defining custom Parts List templates
• Creating and editing balloon callouts

Course Description

NX 11.0

Exploded Views and Parts List

Course Code	TR100ES31L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This session will cover the drafting workflow for creating exploded views, part attributes, parts list, and balloon callouts for assembly drawings.

WHO SHOULD ATTEND

• Drafters
• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Assemblies, Drafting, and working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 11 installed.

A Learning Advantage account will be provided to each student for post-class access to training materials.

COURSE TOPICS

• Creating exploded isometric views
• Using automatic explosions
• Generating Tracelines for exploded views
• Adding and displaying Part Attributes for use in a Parts List
• Creating and editing Parts Lists for assembly drawings
• Editing parts list levels
• Defining custom Parts List templates
• Creating and editing balloon callouts

Course Description

NX 9.0

Exploded Views and Parts List

Course Code	TR100ES31L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This session will cover the drafting workflow for creating exploded views, part attributes, parts list, and balloon callouts for assembly drawings.

WHO SHOULD ATTEND

• Drafters
• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Assemblies, Drafting, and working knowledge of NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Students will need NX 9.0 in order to participate in the hands-on activities.

COURSE TOPICS

• Creating exploded isometric views
• Using automatic explosions
• Generating Tracelines for exploded views
• Adding and displaying Part Attributes for use in a Parts List
• Creating and editing Parts Lists for assembly drawings
• Editing parts list levels
• Defining custom Parts List templates
• Creating and editing balloon callouts

Course Description

NX 10.0
Drafting Essentials
With Teamcenter Integration

Course Code	TR10100-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment.

Learn how to use the NX Drafting application to create standards-compliant detailed engineering drawings that are fully associated to your 3D model.

You will configure all drafting preferences using a preset standards file, create multi-sheet drawings with base and derived views, place associated dimensions and annotations on the drawing, and customize the drawing with view-dependent geometry and style changes.

You will also explore techniques for working with assemblies and Product and Manufacturing Information (PMI).

WHO SHOULD ATTEND	COURSE TOPICS

• The Drafting Essentials course is intended for design engineers, drafters, and CAD/CAM managers who need to manage and create drawings in NX.

PREREQUISITES

Required courses:
 • Basic Design (TR10053-TC)

Or
 • NX CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Basic understanding of drafting principles.
 • Basic understanding of geometric dimension and tolerance principles.
 • Familiarity with the NX user interface.

COURSE TOPICS:
 • Create and maintain drawing sheets and views.
 • Create and manage derived views, such as section and detail views, and their view boundaries.
 • Create view dependent geometry.
 • Create and edit symbols, dimensions and annotations.
 • Apply unique display methods to views in assembly drawings.
 • Generate an assembly parts list.

Course Description

Assemblies environment and Sketch environment.

Other recommendations:
 • Essentials for NX Designers (TR10051)

Or
 • NX CAD Fundamental Processes (TRCT2205)

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

Course Description

NX 11.0
Drafting Essentials
With Teamcenter Integration

Course Code	TR10100-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment.

Learn how to use the NX Drafting application to create standards-compliant detailed engineering drawings that are fully associated to your 3D model.

You will configure all drafting preferences using a preset standards file, create multi-sheet drawings with base and derived views, place associated dimensions and annotations on the drawing, and customize the drawing with view-dependent geometry and style changes.

You will also explore techniques for working with assemblies and Product and Manufacturing Information (PMI).

WHO SHOULD ATTEND

• The Drafting Essentials course is intended for design engineers, drafters, and CAD/CAM managers who need to manage and create drawings in NX.

PREREQUISITES

Required courses:
 • Basic Design (TR10053-TC)

Or

 • NX CAD Basic Processes (TRCT2215-TC)

Or
 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Fundamental knowledge of modeling concepts, including the use of expressions, PMI, and part

COURSE TOPICS

 • Create and maintain drawing sheets and views.
 • Create and manage derived views, such as section and detail views, and their view boundaries.
 • Create view dependent geometry.
 • Create and edit symbols, dimensions and annotations.
 • Apply unique display methods to views in assembly drawings.
 • Generate an assembly parts list.

Course Description

• Advanced knowledge of assembly concepts, including the master model concept, assembly load options, exploded views, and arrangements.
• General drafting skills. Students do not need to be exposed to the Drafting environment prior to taking the Drafting Essentials course, since this course includes a comprehensive look at the NX drafting environment.

Other recommendations:

• Essentials for NX Designers (TR10051-TC)

Or
• NX CAD Fundamental Processes (TRCT2205-TC)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 11 installed.

Course Description

NX 11.0
Drafting Essentials
With Teamcenter Integration

Course Code	TR10100-TC
User Level	Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Este curso se imparte en el entorno de integración de Teamcenter. </ Strong> </ p>
<P> Aprenda a utilizar la aplicación NX Drafting para crear dibujos de ingeniería detallados que estén totalmente asociados con su modelo 3D. </ P>
<P> Usted configurará todas las preferencias de redacción utilizando un archivo de estándares predefinidos, creará dibujos de varias hojas con vistas de base y derivadas, colocará las dimensiones y anotaciones asociadas en el dibujo y personalizará el dibujo con cambios de geometría y de estilo dependientes de la vista. P
<P> También explorará técnicas para trabajar con ensamblajes e información sobre productos y fabricación (PMI). </ P>

WHO SHOULD ATTEND	COURSE TOPICS

<Ul>
<Li> El curso Drafting Essentials está dirigido a ingenieros de diseño, redactores y administradores de CAD / CAM que necesitan administrar y crear dibujos en NX. </ Li>
</ Ul>

• Create and maintain drawing sheets and views.
• Create and manage derived views, such as section and detail views, and their view boundaries.
• Create view dependent geometry.
• Create and edit symbols, dimensions and annotations.
• Apply unique display methods to views in assembly drawings.
• Generate an assembly parts list.

PREREQUISITES

<P>Required courses:</P> (TR10053-TC)
<P><B> O </ b>
<! -
<Li> Conceptos básicos de NX (TRU10853) </ li>
</ Ul>
<Ul>
<B> O </ b>
</ Ul> ->
<Ul>
<Li> Procesos Básicos NX CAD (TRCT2215) </ Li
</ Ul>
<B> O </ b>

Course Description

Básico en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
<Ul>
<P> Otros requisitos: </ p>
<Li> Conocimiento fundamental de los conceptos de modelado, incluyendo el uso de expresiones, PMI y atributos de parte. </ Li>
<Li> Conocimiento avanzado de conceptos de montaje, incluyendo el concepto de modelo maestro, opciones de carga de ensamblaje, vistas en despiece y arreglos. </ Li>
<Li> Habilidades generales de redacción. Los estudiantes no necesitan estar expuestos al ambiente de Drafting antes de tomar el curso de ILT de DRF, ya que este curso incluye una mirada comprensiva al ambiente de redacción de NX. </ Li>
</ Ul>
<P> Otras recomendaciones: </ p>
<Ul>
<Li> Aspectos esenciales para diseñadores NX (TR10051-TC) </ li>
</ Ul>
<B> O </ b>
<Ul>
<Li> <a href="http://training.plm.automation.siemens.com/courses/iltdescription.cfm?pID=TRCT2205-TC___NX___11.0___5000" target="_blank"> Procesos

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 11. </ p>

Course Description

NX 12.0
Drafting Essentials
With Teamcenter Integration

Course Code	TR10100-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment.

Learn how to use the NX Drafting application to create standards-compliant detailed engineering drawings that are fully associated to your 3D model.

You will configure all drafting preferences using a preset standards file, create multi-sheet drawings with base and derived views, place associated dimensions and annotations on the drawing, and customize the drawing with view-dependent geometry and style changes.

You will also explore techniques for working with assemblies and Product and Manufacturing Information (PMI).

WHO SHOULD ATTEND	**COURSE TOPICS**

• The Drafting Essentials course is intended for design engineers, drafters, and CAD/CAM managers who need to manage and create drawings in NX.

PREREQUISITES

Required courses:
 • Basic Design (TR10053-TC)

Or

 • NX CAD Basic Processes (TRCT2215-TC)

Or
 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Fundamental knowledge of modeling concepts, including the use of expressions, PMI, and part

• Create and maintain drawing sheets and views.
 • Create and manage derived views, such as section and detail views, and their view boundaries.
 • Create view dependent geometry.
 • Create and edit symbols, dimensions and annotations.
 • Apply unique display methods to views in assembly drawings.
 • Generate an assembly parts list.

Course Description

• Advanced knowledge of assembly concepts, including the master model concept, assembly load options, exploded views, and arrangements.
• General drafting skills. Students do not need to be exposed to the Drafting environment prior to taking the Drafting Essentials course, since this course includes a comprehensive look at the NX drafting environment.

Other recommendations:

• Essentials for NX Designers (TR10051-TC)

Or
• NX CAD Fundamental Processes (TRCT2205-TC)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 12 installed.

Course Description

NX 9.0
Drafting Essentials
With Teamcenter Integration

Course Code	TR10100-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **Drafting Essentials** course is designed to teach students the proper
use of the NX drafting tools. Productivity is a key in every aspect of the NX software implementation. Included in numerous implementation processes is the requirement to produce high-quality detail drawings that capture and convey design intent graphically "on paper". Product model detailing skills further the goal of overall productivity, as part of the engineering and product development process. Students who complete the Drafting Essentials course will be prepared to return to their product development duties with the additional skills that speed and automate the detailing process in NX.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Drafters
• Designers
• Engineers
• CAD/CAM managers

PREREQUISITES

Required courses:
• Basic Design (TR10053-TC)

• Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment. (NX Essentials, Feature Modeling - Fundamentals, Sketcher)
• Drafting and master model knowledge.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Create and edit drawings
• Create and edit orthographic, section, and detail views
• Create and edit symbols, geometric tolerancing symbols, dimensions, notes and labels
• Create user-defined view boundaries
• Create associative notes and labels
• Create exploded views
• Sketch in drafting

Course Description

NX 9.0
Drafting Essentials
With Teamcenter Integration

Course Code	TR10100-TC
User Level	Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> La clase se enseña en el entorno de integración de Teamcenter. </ Strong> </ p>
<P> El curso <strong> Redacción Essencial </ strong> está diseñado para enseñar a los estudiantes
Uso de las herramientas de dibujo NX. La productividad es una clave en todos los aspectos de la implementación del software NX. Se incluye en numerosos procesos de implementación el requisito de producir dibujos de detalle de alta calidad que capturen y transmitan la intención de diseño gráficamente "en papel". El modelo de producto que detalla las habilidades mejora el objetivo de la productividad general, como parte del proceso de ingeniería y desarrollo del producto. Los estudiantes que completan el curso de Drafting Essentials estarán preparados para regresar a sus deberes de desarrollo de productos con las habilidades adicionales que aceleran y automatizan el proceso de detallado en NX.

WHO SHOULD ATTEND

<Ul>
<Li> Diseñadores </ li>
<Li> Diseñadores </ li>
<Li> Ingenieros </ li>
<Li> Administradores CAD / CAM </ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P> (TR10053-TC)
<P><Ul>
<Li> O la finalización exitosa de la evaluación de requisitos previos de Essentials for Designers en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. (NX Essentials, Modelado de funciones - Fundamentos, Sketcher) </ li>
<Li> Redacción y conocimiento del modelo maestro. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Create and edit drawings
• Create and edit orthographic, section, and detail views
• Create and edit symbols, geometric tolerancing symbols, dimensions, notes and labels
• Create user-defined view boundaries
• Create associative notes and labels
• Create exploded views
• Sketch in drafting

Course Description

NX 11.0

Drafting Essentials

Course Code	TR10100
User Level	Intermediate
Language	Portuguese
Price	R$ 1.416,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Learn how to use the NX Drafting application to create standards-compliant detailed engineering drawings that are fully associated to your 3D model.

You will configure all drafting preferences using a preset standards file, create multi-sheet drawings with base and derived views, place associated dimensions and annotations on the drawing, and customize the drawing with view-dependent geometry and style changes.

You will also explore techniques for working with assemblies and Product and Manufacturing Information (PMI).

WHO SHOULD ATTEND

• The Drafting Essentials course is intended for design engineers, drafters, and CAD/CAM managers who need to manage and create drawings in NX.

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Or

• NX CAD Basic Processes (TRCT2215)

Or

• Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

• Fundamental knowledge of modeling concepts, including the use of expressions, PMI, and part attributes.
• Advanced knowledge of assembly concepts, including

COURSE TOPICS

• Create and maintain drawing sheets and views.
• Create and manage derived views, such as section and detail views, and their view boundaries.
• Create view dependent geometry.
• Create and edit symbols, dimensions and annotations.
• Apply unique display methods to views in assembly drawings.
• Generate an assembly parts list.

exploded views, and arrangements.
 • General drafting skills. Students do not need to be
exposed to the Drafting environment prior to taking the
DRF ILT course, since this course includes a
comprehensive look at the NX drafting environment.

Other recommendations:

• Essentials for NX Designers (TR10051)

Or
• NX CAD Fundamental Processes (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX
11 installed.

NX 12.0

Drafting Essentials

Course Code	TR10100
User Level	Intermediate
Language	Portuguese
Price	R$ 1.416,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Learn how to use the NX Drafting application to create standards-compliant detailed engineering drawings that are fully associated to your 3D model.

You will configure all drafting preferences using a preset standards file, create multi-sheet drawings with base and derived views, place associated dimensions and annotations on the drawing, and customize the drawing with view-dependent geometry and style changes.

You will also explore techniques for working with assemblies and Product and Manufacturing Information (PMI).

WHO SHOULD ATTEND	COURSE TOPICS

 • The Drafting Essentials course is intended for design engineers, drafters, and CAD/CAM managers who need to manage and create drawings in NX.

 • Create and maintain drawing sheets and views.
 • Create and manage derived views, such as section and detail views, and their view boundaries.
 • Create view dependent geometry.
 • Create and edit symbols, dimensions and annotations.
 • Apply unique display methods to views in assembly drawings.
 • Generate an assembly parts list.

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Or

 • NX CAD Basic Processes (TRCT2215)

Or

 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Fundamental knowledge of modeling concepts, including the use of expressions, PMI, and part attributes.
 • Advanced knowledge of assembly concepts, including

exploded views, and arrangements.
• General drafting skills. Students do not need to be exposed to the Drafting environment prior to taking the DRF ILT course, since this course includes a comprehensive look at the NX drafting environment.

Other recommendations:

• Essentials for NX Designers (TR10051)

Or
• NX CAD Fundamental Processes (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 12 installed.

Course Description

NX 11.0

CAD Transition NX 10.0 - NX 11.0
With Teamcenter Integration

Course Code	TR10114-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX 10.0 to NX 11.0 CAD Transition** course will help experienced NX 10.0 users transition to NX 11.0. The course focuses on the new Gateway, Modeling, Surfacing, Realize Shape, Assemblies, Drafting, PMI, and Sheet Metal functionality introduced in NX 11. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers. Experienced NX 10.0 users who want to learn new functionality in NX 11.0

- Gateway
- Sketching
- Assemblies
- Modeling
- Realize Shape
- Drafting
- PMI
- Sheet Metal

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 10.0 and working knowledge of NX

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 11 installed.

Course Description

NX 11.0
CAD Transition NX 10.0 - NX 11.0
With Teamcenter Integration

Course Code	TR10114-TC
User Level	Intermediate
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> La clase se imparte en el entorno de integración de Teamcenter. </ Strong> </ p> <p> El curso <strong> NX 10.0 a NX 11.0 CAD Transition </ strong> NX 11.0. El curso se centra en la nueva funcionalidad Gateway, Modelado, Revestimiento, Realizar Shape, Asambleas, Redacción, PMI y Chapa metálica introducida en NX 11. Los estudiantes tendrán un tiempo real de actividad con nuevas funcionalidades que proporcionarán una valiosa experiencia de aprendizaje. <P>

WHO SHOULD ATTEND

<P> Diseñadores, ingenieros y administradores CAD / CAM. Experimentados usuarios de NX 10.0 que quieren aprender nuevas funcionalidades en NX 11.0 </ p>

PREREQUISITES

<P><P> Modelado, redacción y ensamblajes en NX 10.0 y conocimientos prácticos de NX </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 11. </ p>

COURSE TOPICS

• Gateway
• Sketching
• Assemblies
• Modeling
• Realize Shape
• Drafting
• PMI
• Sheet Metal

Course Description

NX 12.0

CAD Transition NX 11.0 - NX 12.0
With Teamcenter Integration

Course Code	TR10114-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX 11.0 to NX 12.0 CAD Transition** course will help experienced NX 11.0 users transition to NX 12.0. The course focuses on the new Gateway, Modeling, Surfacing, Convergent modeling, Assemblies, Drafting, PMI, and Sheet Metal functionality introduced in NX 12. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS
Designers, engineers and CAD/CAM managers. Experienced NX 11.0 users who want to learn new functionality in NX 12.0	• Gateway • Sketching • Assemblies • Modeling • Convergent modeling • Drafting • PMI • Sheet Metal

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 11.0 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 12 installed.

Course Description

NX 10.0

CAM Transition NX 9 - NX 10.0.1

Course Code	TR10115
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **NX 9 to NX 10.0.1 CAM Transition** course is designed for current NX Manufacturing users transitioning from NX 9 to NX 10.0.1. The NX 10.0.1 release includes a number of improvements for surface finishing, and faster tool path processing time. Additional enhancements have been made for cut region management, blade machining, hole machining, customizing tracking points, tool path visualization..

WHO SHOULD ATTEND

• Manufacturing engineers
• Process planners
• NC/CNC Programmers who have the basic knowledge of NC/CNC manual programming of 3–axis positioning and contouring equipment.

COURSE TOPICS

• Manufacturing general
• Manufacturing milling
• Manufacturing hole machining
• Manufacturing turning
• Integrated Simulation and Verification

PREREQUISITES

This is a basic NX manufacturing class that requires familiarity with the contents of the Manufacturing Basics courses (i.e. Manufacturing Fundamentals, CAM Fixed & Multi-axis Milling, & Turning)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

NX 10.0.1

Course Description

NX 10.0

CAD Transition NX 9.0 - NX 10.0
With Teamcenter Integration

Course Code	TR10116-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX 9.0 to NX 10.0 CAD Transition** course will help experienced NX 9.0 users transition to NX 10.0. The course focuses on the new Gateway, Drafting, Modeling, Shape Studio, Freeform, Assemblies and Part Module functionality introduced in NX 9. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers. Experienced NX 9.0 users who want to learn new functionality in NX 10.0

• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 9.0 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

CAD Transition NX8.5 - NX 9
With Teamcenter Integration

Course Code	TR10116-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.
The **NX 8.5 to NX 9.0 CAD Transition** course will help experienced NX 8.5 users transition to NX 9. The course focuses on the new Gateway, Drafting, Modeling, Shape Studio, Freeform, Assemblies and Part Module functionality introduced in NX 9. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS
Designers, engineers and CAD/CAM managers. Experienced NX 8.5 users who want to learn new functionality in NX 9	• Gateway • Sketching • Assemblies • Modeling • Drafting

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 8.5 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0
Product and Manufacturing Information (G2H)
With Teamcenter Integration

Course Code	TR10200-TCGH
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Product and Manufacturing Information (PMI)** course is an NX task environment for attaching non-geometric information to a part file. You can attach information needed by downstream applications such as tooling, manufacturing, inspection, and shipping. The information can be text, dimensions or symbols.

Class is taught in the Teamcenter integration environment.

WHO SHOULD ATTEND	COURSE TOPICS
• Designers • Engineers • CAD/CAM Managers	• Create and replace PMI • PMI dimensioning • Supplemental Geometry and PMI Annotation • Specialized PMI • Section Views • Search and Reports • PMI data reuse

PREREQUISITES
none

PROVIDED COURSE MATERIAL
• Student Guide • Activity Material

Course Description

NX 11.0

CAD Transition NX 9.0 - NX 11.0 - Essential Topics
With Teamcenter Integration

Course Code	TR10212-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX 9.0 to NX 11.0 CAD Transition Essential Topics** course will help experienced NX 9 users transition to NX 11. The course focuses on the new Gateway, Drafting, Modeling, and Assemblies functionality introduced in NX 10 and NX 11. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers. Experienced NX users who want to learn new functionality in NX 10 and NX 11

- Gateway
- Sketching
- Assemblies
- Modeling
- Drafting

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 9.0 and working knowledge of NX

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX 11.0

CAD Transition NX 9.0 - NX 11.0 - Essential Topics
With Teamcenter Integration

Course Code TR10212-TC
User Level Intermediate
Language Spanish
Price $600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration 2 Days

For More Information Learning Services, Mexico (training.mx.plm@siemens.com)

<Strong> El curso <strong> NX 9.0 a NX 11.0 CAD Transition Essential Topics </ strong> ayudará a los experimentados usuarios de NX 9. </ P> <strong> La clase se imparte en el entorno de integración de Teamcenter. Transición a NX 11. El curso se centra en la nueva funcionalidad de Gateway, Redacción, Modelado y Asambleas introducida en NX 10 y NX 11. Los estudiantes tendrán un tiempo de actividad práctico real con nueva funcionalidad que proporcionará una valiosa experiencia de aprendizaje. P

WHO SHOULD ATTEND	COURSE TOPICS

<P> Diseñadores, ingenieros y administradores CAD / CAM. Expertos usuarios de NX que quieren aprender nuevas funcionalidades en NX 10 y NX 11 </ p>

COURSE TOPICS
• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting

PREREQUISITES

<P><P> Modelado, redacción y ensamblajes en NX 9.0 y conocimientos prácticos de NX </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 12.0

CAD Transition NX 10.0 - NX 12.0 - Essential Topics
With Teamcenter Integration

Course Code	TR10212-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.
The **NX 10.0 to NX 12.0 CAD Transition Essential Topics** course will help experienced NX 10 users transition to NX 12. The course focuses on the new Gateway, Drafting, Modeling, and Assemblies functionality introduced in NX 11 and NX 12. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers. Experienced NX users who want to learn new functionality in NX 11 and NX 12

• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 10.0 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 12.0

CAD Transition NX 10.0 - NX 12.0 - Essential Topics
With Teamcenter Integration

Course Code | TR10212-TC
User Level | Intermediate
Language | Spanish
Price | $600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration | 2 Days
For More Information | Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <strong> La clase se enseña en el entorno de integración de Teamcenter. </ strong> </ p> <p> El curso <strong> NX 10.0 a NX 12.0 Temas esenciales de transición de CAD </ strong> ayudará a los usuarios experimentados de NX 10 transición a NX 12. El curso se enfoca en la nueva funcionalidad Gateway, Drafting, Modelado y Ensamblajes introducida en NX 11 y NX 12. Los estudiantes tendrán un tiempo real de actividades prácticas con nuevas funcionalidades que proporcionarán una valiosa experiencia de aprendizaje. </ p>

WHO SHOULD ATTEND	**COURSE TOPICS**

<p> Diseñadores, ingenieros y administradores de CAD / CAM. Usuarios experimentados de NX que desean aprender nuevas funcionalidades en NX 11 y NX 12 </ p>

• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting

PREREQUISITES

<P><p> Modelado, Redacción y Ensambles en NX 10.0 y conocimiento práctico de NX </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 11.0

CAD Transition NX 9.0 - NX 11.0 - Essential Topics

Course Code	TR10212
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **NX 9.0 to NX 11.0 CAD Transition Essential Topics** course will help experienced NX 9 users transition to NX 11. The course focuses on the new Gateway, Drafting, Modeling, and Assemblies functionality introduced in NX 10 and NX 11. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers. Experienced NX users who want to learn new functionality in NX 10 and NX 11

- Gateway
- Sketching
- Assemblies
- Modeling
- Drafting

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 9 and working knowledge of NX

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX 12.0

CAD Transition NX 10.0 - NX 12.0 - Essential Topics

Course Code TR10212
User Level Intermediate
Language Portuguese
Price R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration 2 Days

For More Information Learning Services, Brazil (training.brazil.plm@siemens.com)

The **NX 10.0 to NX 12.0 CAD Transition Essential Topics** course will help experienced NX 10 users transition to NX 12. The course focuses on the new Gateway, Drafting, Modeling, and Assemblies functionality introduced in NX 11 and NX 12. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers.
Experienced NX users who want to learn new
functionality in NX 11 and NX 12

• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 10 and
working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 1847

CAD Transition NX 11.0 - NX 1847 Series

Course Code	TR10212
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **NX 11.0 to NX 1847 Series CAD Transition** course will help experienced NX 11 users transition to NX 1847 Series. The course focuses on the new Gateway, Drafting, Modeling, and Assemblies functionality introduced in NX 12 and NX 1847 Series. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers. Experienced NX users who want to learn new functionality in NX 12 and NX 1847 Series

• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting
• PMI
• NX Sheet Metal

PREREQUISITES

Modeling, Drafting, Assemblies, PMI, and NX Sheet Metal in NX 11 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0

CAD Transition NX 8.5 - NX 10.0 - Essential Topics
With Teamcenter Integration

Course Code	TR10216-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX 8.5 to NX 10.0 CAD Transition Essential Topics** course will help experienced NX 8.5 users transition to NX 10.0. The course focuses on the new Gateway, Drafting, Modeling, and Assemblies functionality introduced in NX 9 and NX 10. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers and CAD/CAM managers. Experienced NX users who want to learn new functionality in NX 9 and NX 10

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 8.5 and working knowledge of NX

COURSE TOPICS

• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

NX 10.0.0

Course Description

NX 9.0

CAD Transition NX 8.0 - NX 9 - Essential Topics
With Teamcenter Integration

Course Code	TR10216-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX 8.0 to NX 9 CAD Transition** course will help experienced NX 8.0 users transition to NX 9. The course focuses on the new Gateway, Drafting, Modeling, Shape Studio, Freeform, Assemblies and Sheet Metal functionality introduced in NX 9. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND

Designers, engineers and CAD/CAM managers. Experienced NX users who want to learn new functionality in NX 9

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 8.0 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Gateway
• Sketching
• Assemblies
• Modeling
• Drafting

Course Description

NX 10.0

CAD Transition NX 8.5 - NX 10.0 - Intermediate Topics
With Teamcenter Integration

Course Code	TR10217-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **NX 8.5 to NX 10 CAD Transition Intermediate Topics** class is for the more experienced NX 8.5 users transitioning to NX 10. The new visualization, curves, free form features, PMI, and realize shape functionality make up the focus of this course. The course allows for actual hands-on activity time for a real learning experience

WHO SHOULD ATTEND

Designers, engineers, CAD/CAM managers and experienced NX 8.5 users who want to learn new functionality in NX 9 and NX 10

PREREQUISITES

Free Form, Surfacing, and advanced working knowledge of NX 8.5

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

NX 10.0.0

COURSE TOPICS

• Visualization
• Curves
• Shape Studio
• 2D Layout
• Product and Manufacturing Information
• Sheet Metal
• HD3D Visual Reports

Course Description

NX 10.0

CAD Transition NX 8.5 - NX 10.0 - Intermediate Topics
With Teamcenter Integration

Course Code	TR10217-TC
User Level	Intermediate
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> La clase <strong> NX 8.5 a NX 10 CAD de transición intermedia </ strong> es para los usuarios más experimentados de NX 8.5 que pasan a NX 10. La nueva visualización, las curvas, las funciones de forma libre, el PMI y la funcionalidad de forma Constituyen el foco de este curso. El curso permite el tiempo de actividad práctico real para una experiencia de aprendizaje real. </ P>

WHO SHOULD ATTEND

<P> Diseñadores, ingenieros, administradores de CAD / CAM y experimentados usuarios de NX 8.5 que quieran aprender nuevas funcionalidades en NX 9 y NX 10 </ p>

PREREQUISITES

<P><P> Forma libre, superposición y conocimientos avanzados de trabajo de NX 8.5 </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

NX 10.0.0

COURSE TOPICS

• Visualization
• Curves
• Shape Studio
• 2D Layout
• Product and Manufacturing Information
• Sheet Metal
• HD3D Visual Reports

Course Description

NX 11.0

CAD Transition NX 9.0 - NX 11.0 - Intermediate Topics
With Teamcenter Integration

Course Code	TR10217-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **NX 9.0 to NX 11.0 CAD Transition Intermediate Topics** class is for the more experienced NX 9 users transitioning to NX 11. The new visualization, curves, free form features, PMI, and realize shape functionality make up the focus of this course. The course allows for actual hands-on activity time for a real learning experience

WHO SHOULD ATTEND

Designers, engineers, CAD/CAM managers and experienced NX 9 users who want to learn new functionality in NX 10 and NX 11

PREREQUISITES

Freeform surfacing and advanced working knowledge of NX 9

COURSE TOPICS

• Visualization
• Curves
• Surfacing
• Realize Shape
• Convergent modeling
• Aero design
• Product and Manufacturing Information
• Sheet Metal

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 11.0

CAD Transition NX 9.0 - NX 11.0 - Intermediate Topics
With Teamcenter Integration

Course Code	TR10217-TC
User Level	Intermediate
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> La clase <strong> NX 9.0 a NX 11.0 CAD de Transición de Temas Intermedios </ strong> es para los usuarios NX 9 más experimentados que pasan a NX 11. La nueva visualización, curvas, características de forma libre, PMI y funcionalidad de forma Constituyen el foco de este curso. El curso permite el tiempo de actividad práctico real para una experiencia de aprendizaje real. </ P>

WHO SHOULD ATTEND	**COURSE TOPICS**

<P> Diseñadores, ingenieros, administradores de CAD / CAM y experimentados usuarios de NX 9 que quieran aprender nuevas funcionalidades en NX 10 y NX 11 </ p>

• Visualization
• Curves
• Surfacing
• Realize Shape
• Convergent modeling
• Aero design
• Product and Manufacturing Information
• Sheet Metal

PREREQUISITES

<P><P> Superficie de forma libre y conocimientos avanzados de trabajo de NX 9 </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 12.0

CAD Transition NX 10.0 - NX 12.0 - Intermediate Topics
With Teamcenter Integration

Course Code	TR10217-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment. The **NX 10.0 to NX 12.0 CAD Transition Intermediate Topics** class is for the more experienced NX 10 users transitioning to NX 12. The new visualization, curves, free form features, PMI, and realize shape functionality make up the focus of this course. The course allows for actual hands-on activity time for a real learning experience

WHO SHOULD ATTEND

Designers, engineers, CAD/CAM managers and experienced NX 10 users who want to learn new functionality in NX 11 and NX 12

PREREQUISITES

Freeform surfacing and advanced working knowledge of NX 10

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Visualization
• Surfacing
• NX Realize Shape
• Convergent modeling
• Aero design
• Product and Manufacturing Information
• Sheet Metal

Course Description

NX 11.0

CAD Transition NX 9.0 - NX 11.0 - Intermediate Topics

Course Code	TR10217
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **NX 9.0 to NX 11.0 CAD Transition Intermediate Topics** class is for the more experienced NX 9 users transitioning to NX 11. The new visualization, curves, free form features, shape studio, and realize shape functionality make up the focus of this course. The course allows for actual hands-on activity time for a real learning experience

WHO SHOULD ATTEND

Designers, engineers, CAD/CAM managers and experienced NX 9 users who want to learn new functionality in NX 10 and NX 11

PREREQUISITES

Free form surfacing and advanced knowledge of NX 9

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Visualization
• Curves
• Surfacing
• Realize Shape
• Convergent modeling
• Aero design
• Product and Manufacturing Information
• Sheet Metal

Course Description

NX 12.0

CAD Transition NX 10.0 - NX 12.0 - Intermediate Topics

Course Code	TR10217
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **NX 10.0 to NX 12.0 CAD Transition Intermediate Topics** course will help experienced NX 10 users transition to NX 12. The course focuses on the new Visualization, Surfacing, Convergent Modeling, and NX Realize Shape functionality introduced in NX 11 and NX 12. Students will have actual hands-on activity time with new functionality which will provide a valuable learning experience.

WHO SHOULD ATTEND

Designers, engineers, CAD/CAM managers and experienced NX 10 users who want to learn new functionality in NX 11 and NX 12

PREREQUISITES

Free form surfacing and advanced knowledge of NX 10

COURSE TOPICS

• Visualization
• Surfacing
• NX Realize Shape
• Convergent modeling
• Aero design
• Product and Manufacturing Information
• Sheet Metal

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

CAD Transition NX 7.5 - NX 9.0 – Essential Topics
With Teamcenter Integration

Course Code	TR10316-TC
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **NX 7.5 to NX 9.0 CAD Transition Essential Topics** class is for the general NX 7.5 users transitioning to NX 9.0. The new gateway, modeling, sketcher, assemblies, and drafting functionality are the focus of this course. The course allows for actual hands-on activity time for a real learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers, CAD/CAM managers and experienced NX 7.5 users who want to learn new functionality in NX

• Gateway
• Sketcher
• Assemblies
• Modeling
• Drafting

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 7.5 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0
CAD Transition NX 7.5 - NX 9 – Intermediate Topics
With Teamcenter Integration

Course Code	TR10317-TC
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **NX 7.5 to NX 9 CAD Transition Intermediate Topics** class is for the more experienced NX 7.5 users transitioning to NX 9. The new visualization, curves, free form feature, shape studio, PMI, and sheet metal functionality make up the focus of this course. The course allows for actual hands-on activity time for a real learning experience

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers, CAD/CAM managers and experienced NX 7.5 users who want to learn new functionality in NX

• Visualization
• Curves
• Shape Studio
• Drafting Plus
• Product and Manufacturing Information
• Sheet Metal
• HD3D Visual Reports

PREREQUISITES

Modeling, Drafting, and Assemblies in NX 7.5 and working knowledge of NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

CAM Transition - NX 8.5 - NX 9

Course Code TR11015
User Level Intermediate
Language English
Price $550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration 1 Day

For More Information Learning Services, USA (training.usa.plm@siemens.com)

The **NX 8.5 to NX 9 CAM Transition** course is designed for experienced Manufacturing users transitioning from NX 8.5 to NX 9. The NX 9 release includes enhancements that generate better quality machined surfaces, reduce production time, enhance collision checking, provide customization of tool path information.

WHO SHOULD ATTEND

NX 8.5 CAM users transitioning to NX 9

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

None

COURSE TOPICS

 • Mill holes, smooth Face Mill tool paths, and avoid tool holder collision. They also learn how to create milling tools and their tool holders, and mill with a chamfer tool.
 • Complete Integrated test cut, probe and finish cut operation capability in turning.
 • Teach NX custom features and operations.
 • Use new options in the Postprocess dialog box .
 • Output shop documentation in HTML, Excel, or TEXT format, and customize the output in Excel and TCL.
 • Re-fixture a part by transferring the In-process workpiece from one setup to the next setup.
 • Customize a probing operation.

Course Description

NX 10.0

CAM Manufacturing Fundamentals

Course Code	TR11021
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Manufacturing Fundamentals** course is designed to expedite the student learning experience in the generation of tool paths for 2 and 3-axis milling and drilling applications. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces Siemens PLM's intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• NC/CNC programmer
• **CAM Express users ****

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Or
• CAD Basic Processes (TRCT2215)

Or
• Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

** NOTE for CAM Express Users
• You must first complete the self-paced tutorials supplied with CAM Express prior to attending the Manufacturing Fundamentals course.
• The prerequisites of Basic Design (TR10053) or CAD Basic Processes (TRCT2215) are not for CAM Express users

COURSE TOPICS

• Introduction and Overview
• Part analysis for manufacturing
• User Interface
• Operation Navigator
• Machine Coordinate System
• Tooling
• Visualization/Verification
• Post Processing/Shop Documentation
• Planar/Cavity Milling
• Drilling
• Fixed Contour Area Milling
• Face Milling
• Text Engraving

Course Description

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

NX 10.0

NX Manufacturing Fundamentals

Course Code	TR11021
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> NX Manufacturing Fundamentals </ strong> está diseñado para acelerar la experiencia de aprendizaje de los estudiantes en la generación de rutas de herramientas para aplicaciones de fresado y perforación de 2 y 3 ejes. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza el conocimiento íntimo de Siemens PLM sobre los desarrollos de software e instruye a los estudiantes basándose en los principios subyacentes incorporados en la suite de productos NX.

WHO SHOULD ATTEND

<Ul> Ingenieros de fabricación </ li>
<Li> Administradores CAD / CAM </ li>
<Li> Programador NC / CNC </ li>
<Li> <strong> Usuarios de CAM Express ** </ strong>
</ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><B> O </ b>
<Ul>
<Li> Procesos Básicos NX CAD (TRCT2215)
</ li>
</ Ul>
<B> O </ b>

COURSE TOPICS

• Introduction and Overview
• Part analysis for manufacturing
• User Interface
• Operation Navigator
• Machine Coordinate System
• Tooling
• Visualization/Verification
• Post Processing/Shop Documentation
• Planar/Cavity Milling
• Drilling
• Fixed Contour Area Milling
• Face Milling
• Text Engraving

Course Description

<Li> Finalización satisfactoria del Asesor de Diseño Básico en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
<B> ** NOTA para los usuarios de CAM Express </ b>
<Ul>

<Li> Primero debe completar los tutoriales a su propio ritmo suministrados con CAM Express antes de asistir al curso de Fundamentos de Manufactura. </ Li>
<Li> Los requisitos previos del Diseño Básico (TR10053) o de los Procesos Básicos NX CAD (TRCT2215) no son para los usuarios de CAM Express </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 10. </ p>

Course Description

NX 11.0

CAM Manufacturing Fundamentals

Course Code	TR11021
User Level	Beginner
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Manufacturing Fundamentals** course is designed to expedite the student learning experience in the generation of tool paths for 2 and 3-axis milling and drilling applications. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces Siemens PLM's intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• NC/CNC programmer
• **CAM Express users ****

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Or
 • CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

** NOTE for CAM Express Users
 • You must first complete the self-paced tutorials supplied with CAM Express prior to attending the Manufacturing Fundamentals course.
 • The prerequisites of Basic Design (TR10053), NX Basics (TRU10853), or CAD Basic Processes (TRCT2215) are not for CAM Express users.

COURSE TOPICS

• Introduction and Overview
• Part analysis for manufacturing
• User Interface
• Operation Navigator
• Machine Coordinate System
• Tooling
• Visualization/Verification
• Post Processing/Shop Documentation
• Planar/Cavity Milling
• Drilling
• Fixed Contour Area Milling
• Face Milling
• Text Engraving

Course Description

• Student Guide
• Activity Material

This course was written and released against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

NX 11.0

CAM Manufacturing Fundamentals

Course Code	TR11021
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Manufacturing Fundamentals** course is designed to expedite the student learning experience in the generation of tool paths for 2 and 3-axis milling and drilling applications. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces Siemens PLM's intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite.

• Manufacturing engineers
• CAD/CAM managers
• NC/CNC programmer
• **CAM Express users ****

Required courses:
• Basic Design (TR10053)

Or
• CAD Basic Processes (TRCT2215)

Or
• Successful completion of the **NX Basics Advisor** in

• Introduction and Overview
• Part analysis for manufacturing
• User Interface
• Operation Navigator
• Machine Coordinate System
• Tooling
• Visualization/Verification
• Post Processing/Shop Documentation
• Planar/Cavity Milling
• Drilling
• Fixed Contour Area Milling
• Face Milling
• Text Engraving

Course Description

Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

** NOTE for CAM Express Users
 • You must first complete the self-paced tutorials supplied with CAM Express prior to attending the Manufacturing Fundamentals course.
 • The prerequisites of Basic Design (TR10053), NX Basics (TRU10853), or CAD Basic Processes (TRCT2215) are not for CAM Express users.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written and released against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

Course Description

NX 11.0

NX CAM Manufacturing Fundamentals

Course Code	TR11021
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Manufacturing Fundamentals </ strong> está diseñado para acelerar la experiencia de aprendizaje de los estudiantes en la generación de rutas de herramientas para aplicaciones de fresado y perforación de 2 y 3 ejes. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza el conocimiento íntimo de Siemens PLM sobre los desarrollos de software e instruye a los estudiantes basándose en los principios subyacentes incorporados en la suite de productos NX.

WHO SHOULD ATTEND	COURSE TOPICS

<Ul> Ingenieros de fabricación </ li>
<Li> Administradores CAD / CAM </ li>
<Li> Programador NC / CNC </ li>
<Li> <strong> Usuarios de CAM Express ** </ strong>
</ li>
</ Ul>

COURSE TOPICS

- Introduction and Overview
- Part analysis for manufacturing
- User Interface
- Operation Navigator
- Machine Coordinate System
- Tooling
- Visualization/Verification
- Post Processing/Shop Documentation
- Planar/Cavity Milling
- Drilling
- Fixed Contour Area Milling
- Face Milling
- Text Engraving

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><! - <b> O </ b>
<Ul>
<Li> Conceptos básicos de NX (TRU10853) </ li>
</ Ul> ->
<B> O </ b>
<Ul>
<Li> Procesos Básicos NX CAD (TRCT2215)
</ li>
</ Ul>
<B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Diseño Básico en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse

Course Description

<B> ** NOTA para los usuarios de CAM Express </ b>
<Ul>
<Li> Primero debe completar los tutoriales a su propio ritmo suministrados con CAM Express antes de asistir al curso de Fundamentos de Manufactura. </ Li>
<Li> Los requisitos previos del diseño básico (TR10053), los conceptos básicos de NX (TRU10853) o los procesos básicos de NX CAD (TRCT2215) no son para los usuarios de CAM Express. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<B> Este curso fue escrito y lanzado contra NX 11.0.1 </ b>
<P> Para las clases <b> LIVE! </ B>, los clientes deben tener NX 11.0.1 instalado. </ P>

Course Description

NX 9.0

NX Manufacturing Fundamentals

Course Code	TR11021
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **NX Manufacturing Fundamentals** course is designed to expedite the student learning experience in the generation of tool paths for 2 and 3-axis milling and drilling applications. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces Siemens PLM's intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• NC/CNC programmer
• **CAM Express users ****

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Or

• Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

** NOTE for CAM Express Users
• You must first complete the self-paced tutorials supplied with CAM Express prior to attending the Manufacturing Fundamentals course.
• The prerequisites of Basic Design (TR10053) or NX CAD Basic Processes (TRCT2215) are not for CAM Express users

COURSE TOPICS

• Introduction and Overview
• Part analysis for manufacturing
• User Interface
• Operation Navigator
• Machine Coordinate System
• Tooling
• Visualization/Verification
• Post Processing/Shop Documentation
• Planar/Cavity Milling
• Drilling
• Fixed Contour Area Milling
• Face Milling
• Text Engraving

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

NX 9.0

NX Manufacturing Fundamentals

Course Code	TR11021
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> NX Manufacturing Fundamentals </ strong> está diseñado para acelerar la experiencia de aprendizaje de los estudiantes en la generación de rutas de herramientas para aplicaciones de fresado y perforación de 2 y 3 ejes. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza el conocimiento íntimo de Siemens PLM sobre los desarrollos de software e instruye a los estudiantes basándose en los principios subyacentes incorporados en la suite de productos NX.

WHO SHOULD ATTEND	COURSE TOPICS

<Ul> Ingenieros de fabricación </ li>
<Li> Administradores CAD / CAM </ li>
<Li> Programador NC / CNC </ li>
<Li> <strong> Usuarios de CAM Express ** </ strong>
</ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Diseño Básico en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
<B> ** NOTA para los usuarios de CAM Express </ b>
<Ul>

<Li> Primero debe completar los tutoriales a su propio ritmo suministrados con CAM Express antes de asistir al curso de Fundamentos de Manufactura. </ Li>

COURSE TOPICS

• Introduction and Overview
• Part analysis for manufacturing
• User Interface
• Operation Navigator
• Machine Coordinate System
• Tooling
• Visualization/Verification
• Post Processing/Shop Documentation
• Planar/Cavity Milling
• Drilling
• Fixed Contour Area Milling
• Face Milling
• Text Engraving

Course Description

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

NX 10.0

CAM Turning Manufacturing Process

Course Code	TR11055
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Turning Manufacturing Process   is the core turning class designed to convey concepts, functionality, and application of the turning module. Turning Manufacturing Process is taught from the perspective of an NC/CNC programming session and emphasizes programming concepts and techniques which take advantage of the latest developments in turning equipment and technology.

WHO SHOULD ATTEND	COURSE TOPICS
• Manufacturing engineers • NC/CNC programmers	• Defining part and blank geometry • Retrieving and creating tools • Facing operations • Tool Path Verification

PREREQUISITES

Required courses:
 • NX Manufacturing Fundamentals (TR11021)

Or

 • Successful completion of the Manufacturing
Fundamentals Advisor in Learning Advantage (score
>70%). Learning Advantage courses can also be used

• Common options
• Centerline operations
• Roughing operations – OD
• Roughing operations – ID
• Finish operations OD and ID
• Grooving
• Teach mode
• Threading operations
• Using Multiple Spindles
• Mill-turn

Course Description

- Merging lathes
- Vertical turret lathe

 • Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4- and 5-axis NC/CNC programming methods and procedures

- Student Guide
- Activity Material

For **LIVE!** classes, customers are required to have NX 10 installed.

Course Description

NX 11.0

CAM Turning Manufacturing Process

Course Code	TR11055
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Turning Manufacturing Process   is the core turning class designed to convey concepts, functionality, and application of the turning module. Turning Manufacturing Process is taught from the perspective of an NC/CNC programming session and emphasizes programming concepts and techniques which take advantage of the latest developments in turning equipment and technology.

WHO SHOULD ATTEND

• Manufacturing engineers
• NC/CNC programmers

PREREQUISITES

Required courses:
 • NX Manufacturing Fundamentals (TR11021)

Or
 • Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4- and 5-axis NC/CNC programming methods and procedures

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written and released against NX 11.0.1

COURSE TOPICS

• Defining part and blank geometry
• Retrieving and creating tools
• Facing operations
• Tool Path Verification
• Common options
• Centerline operations
• Roughing operations – OD
• Roughing operations – ID
• Finish operations OD and ID
• Grooving
• Teach mode
• Threading operations
• Using Multiple Spindles
• Mill-turn
• Merging lathes
• Vertical turret lathe

For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

NX 11.0

CAM Turning Manufacturing Process

Course Code	TR11055
User Level	Beginner to Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <strong> Turning Manufacturing Process </ strong> es la clase principal de torneado diseñada para transmitir conceptos, funcionalidad y aplicación del módulo de torneado. Turning Manufacturing Process se enseña desde la perspectiva de una sesión de programación NC / CNC y enfatiza los conceptos de programación y las técnicas que aprovechan los últimos avances en equipos y tecnología de torneado. </ p>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 Ingenieros de fabricación </ li>
 Programadores de NC / CNC </ li>
</ ul>

PREREQUISITES

<P>Required courses:</P>
NX Manufacturing Fundamentals (TR11021)
<P><b> O </ b>

 Finalización exitosa del <b> Asesor de conceptos básicos de fabricación </ b> en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden utilizar para prepararse para la evaluación de requisitos previos. </ Li>
</ ul>

Otras recomendaciones:
</ ul>

 Debe tener un conocimiento profundo de los principios de programación NC / CNC y de los métodos y procedimientos de programación NC / CNC manuales de 3, 4 y 5 ejes </ li>
</ ul></P>

PROVIDED COURSE MATERIAL

COURSE TOPICS

- Defining part and blank geometry
- Retrieving and creating tools
- Facing operations
- Tool Path Verification
- Common options
- Centerline operations
- Roughing operations – OD
- Roughing operations – ID
- Finish operations OD and ID
- Grooving
- Teach mode
- Threading operations
- Using Multiple Spindles
- Mill-turn
- Merging lathes
- Vertical turret lathe

• Student Guide
• Activity Material

NX 9.0

Turning Manufacturing Process

Course Code	TR11055
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Turning Manufacturing Process   is the core turning class designed to convey concepts, functionality, and application of the turning module. Turning Manufacturing Process is taught from the perspective of an NC/CNC programming session and emphasizes programming concepts and techniques which take advantage of the latest developments in turning equipment and technology.

WHO SHOULD ATTEND

• Manufacturing engineers
• NC/CNC programmers

PREREQUISITES

Required courses:
 • NX Manufacturing Fundamentals (TR11021)

Or
 • Successful completion of the Manufacturing Fundamentals Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4- and 5-axis

COURSE TOPICS

• Defining part and blank geometry
• Retrieving and creating tools
• Facing operations
• Tool Path Verification
• Common options
• Centerline operations
• Roughing operations – OD
• Roughing operations – ID
• Finish operations OD and ID
• Grooving
• Teach mode
• Threading operations
• Using Multiple Spindles
• Mill-turn
• Merging lathes
• Vertical turret lathe

Course Description

• Student Guide
• Activity Material

NX 10.0

CAM Post Building Techniques (G2H)

Course Code	TR11060-GH
User Level	Beginner to Intermediate
Language	English
Price	$4,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Post Building Techniques** acquaints you with tools and techniques that are used for building custom, machine tool specific post processors using the Post Builder tool. Methods are shown for customization and modification of the definition and event handler files that are used by NX Post.

WHO SHOULD ATTEND	COURSE TOPICS

Anyone that is required to build post processors that are used in the NX manufacturing process. Typical users are NC/CNC programmers, system managers and manufacturing engineers

COURSE TOPICS:

• NX Post - postprocessor
• Building a postprocessor with the post builder
• Units-only subposts
• Post Builder for wire EDM applications
• Post Builder for 4-axis and 5-axis mills
• Post Builder for lathe applications
• Create mill-turn postprocessors
• Tcl Basics for Post Builder
• Custom commands
• User-defined events and user-defined cycles
• Virtual NC Controller
• Postprocessing with a Siemens controller
• Create a macro with Post Builder
• A Guide to best practices of building a postprocessor

PREREQUISITES

Required courses:
 • NX Manufacturing Fundamentals (TR11021)

Or
 • Successful completion of the Manufacturing Fundamentals Advisor in Learning Advantage (score

used to prepare for the prerequisite assessment.

Other recommendations:
 • Should have a thorough understanding of NC/CNC programming principles and a thorough understanding of NC/CNC machine/controller functionality

• Student Guide
• Activity Material

NX 11.0

CAM Post Building Techniques (G2H)

Course Code	TR11060-GH
User Level	Beginner to Intermediate
Language	English
Price	$4,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Post Building Techniques** acquaints you with tools and techniques that are used for building custom, machine tool specific post processors using the Post Builder tool. Methods are shown for customization and modification of the definition and event handler files that are used by NX Post.

WHO SHOULD ATTEND	COURSE TOPICS
Anyone that is required to build post processors that are used in the NX manufacturing process. Typical users are NC/CNC programmers, system managers and manufacturing engineers	• NX Post - postprocessor • Building a postprocessor with the post builder • Units-only subposts • Post Builder for wire EDM applications • Post Builder for 4-axis and 5-axis mills • Post Builder for lathe applications • Create mill-turn postprocessors • Tcl Basics for Post Builder • Custom commands

PREREQUISITES

Required courses:

- User-defined events and user-defined cycles
- Postprocessing with a Siemens controller
- Create a macro with Post Builder
- A Guide to best practices of building a postprocessor

• NX Manufacturing Fundamentals (TR11021)

Or
• Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:
• Should have a thorough understanding of NC/CNC programming principles and a thorough understanding of NC/CNC machine/controller functionality

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written and released against NX 11.0.1

Course Description

NX 9.0
Post Building Techniques (G2H)

Course Code	TR11060-GH
User Level	Beginner to Intermediate
Language	English
Price	$4,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Post Building Techniques** acquaints you with tools and techniques that are used for building custom, machine tool specific post processors using the Post Builder tool. Methods are shown for customization and modification of the definition and event handler files that are used by NX Post.

WHO SHOULD ATTEND

 Anyone that is required to build post processors that are used in the NX manufacturing process. Typical users are NC/CNC programmers, system managers and manufacturing engineers

PREREQUISITES

Required courses:
 • NX Manufacturing Fundamentals (TR11021)

 • Or successful completion of Manufacturing Fundamentals prerequisite advisor on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor.
 • A thorough understanding of NC/CNC programming principles and a thorough understanding of NC/CNC machine/controller functionality

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• NX Post - postprocessor
• Building a postprocessor with the post builder
• Units-only subposts
• Post Builder for wire EDM applications
• Post Builder for 4-axis and 5-axis mills
• Post Builder for lathe applications
• Create mill-turn postprocessors
• Tcl Basics for Post Builder
• Custom commands
• User-defined events and user-defined cycles
• Virtual NC Controller
• Postprocessing with a Siemens controller
• Create a macro with Post Builder
• A Guide to best practices of building a postprocessor

Course Description

NX 10.0

Post Building Techniques

Course Code	TR11060
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> Las <strong> técnicas de creación de publicaciones </ strong> le informan sobre las herramientas y técnicas que se utilizan para crear post-procesadores específicos de máquina herramienta utilizando la herramienta Post Builder. Métodos se muestran para la personalización y modificación de la definición y los archivos del controlador de eventos que son utilizados por NX Post. </ P>

WHO SHOULD ATTEND

<P> Cualquier persona que se requiere para construir post procesadores que se utilizan en el proceso de fabricación de NX. Los usuarios típicos son NC / programadores CNC, administradores de sistemas e ingenieros de fabricación </ p>

PREREQUISITES

<P>Required courses:</P>
NX Manufacturing Fundamentals (TR11021)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Fundamentos de Manufactura en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
Otras recomendaciones:
<Ul>
<Li> Debería tener un conocimiento profundo de los principios de programación NC / CNC y una comprensión completa de la funcionalidad CNC / controladora CNC </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• NX Post - postprocessor
• Building a postprocessor with the post builder
• Units-only subposts
• Post Builder for wire EDM applications
• Post Builder for 4-axis and 5-axis mills
• Post Builder for lathe applications
• Create mill-turn postprocessors
• Tcl Basics for Post Builder
• Custom commands
• User-defined events and user-defined cycles
• Virtual NC Controller
• Postprocessing with a Siemens controller
• Create a macro with Post Builder
• A Guide to best practices of building a postprocessor

Course Description

NX 11.0

NX CAM Post Building Techniques

Course Code	TR11060
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> Las <strong> técnicas de creación de publicaciones </ strong> le informan sobre las herramientas y técnicas que se utilizan para crear post-procesadores específicos de máquina herramienta utilizando la herramienta Post Builder. Métodos se muestran para la personalización y modificación de la definición y los archivos del controlador de eventos que son utilizados por NX Post. </ P>

WHO SHOULD ATTEND

<P> Cualquier persona que se requiere para construir post procesadores que se utilizan en el proceso de fabricación de NX. Los usuarios típicos son NC / programadores CNC, administradores de sistemas e ingenieros de fabricación </ p>

PREREQUISITES

<P>Required courses:</P>
NX Manufacturing Fundamentals (TR11021)
<P><B>
O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Fundamentos de Manufactura en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
Otras recomendaciones:
<Ul>
<Li> Debería tener un conocimiento profundo de los principios de programación NC / CNC y una comprensión completa de la funcionalidad CNC / controladora CNC </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

- NX Post - postprocessor
- Building a postprocessor with the post builder
- Units-only subposts
- Post Builder for wire EDM applications
- Post Builder for 4-axis and 5-axis mills
- Post Builder for lathe applications
- Create mill-turn postprocessors
- Tcl Basics for Post Builder
- Custom commands
- User-defined events and user-defined cycles
- Virtual NC Controller
- Postprocessing with a Siemens controller
- Create a macro with Post Builder
- A Guide to best practices of building a postprocessor

Course Description

<B> Este curso fue escrito y lanzado contra NX 11.0.1
</ b>

NX 9.0

Post Building Techniques

Course Code	TR11060
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> Las <strong> técnicas de creación de publicaciones </ strong> le informan sobre las herramientas y técnicas que se utilizan para crear post-procesadores específicos de máquina herramienta utilizando la herramienta Post Builder. Métodos se muestran para la personalización y la modificación de la definición y los archivos del controlador de eventos que son utilizados por NX Post. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

<P> Cualquier persona que se requiere para construir post procesadores que se utilizan en el proceso de fabricación de NX. Los usuarios típicos son NC / programadores CNC, administradores de sistemas e ingenieros de fabricación </ p>

COURSE TOPICS

- NX Post - postprocessor
- Building a postprocessor with the post builder
- Units-only subposts
- Post Builder for wire EDM applications
- Post Builder for 4-axis and 5-axis mills
- Post Builder for lathe applications
- Create mill-turn postprocessors
- Tcl Basics for Post Builder
- Custom commands
- User-defined events and user-defined cycles
- Virtual NC Controller
- Postprocessing with a Siemens controller
- Create a macro with Post Builder
- A Guide to best practices of building a postprocessor

PREREQUISITES

<P>Required courses:</P>
NX Manufacturing Fundamentals (TR11021)
<P><Ul> <Li> O la finalización exitosa del asesor previo de Fundamentos de Manufactura en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para el asesor previo. </ Li>
<Li> Una comprensión completa de los principios de programación NC / CNC y una comprensión completa de la funcionalidad de máquina / controlador NC / CNC </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0

CAM Fixed-axis and Multi-axis Milling

Course Code	TR11080
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Fixed-axis and Multi-axis Milling** course is designed for NC/CNC programmers who machine simple or complex parts with fixed and variable tool capabilities. Students will learn how to create fixed and variable axis tool paths. You will also be introduced to NX workflows for machining contoured parts, high-speed machining methods, milling holes and threads, milling turbine blade type parts, and on machine probing.

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• Multi-axis NC/CNC programmers
• Users of 3, 4 and 5-axis machines for milling complex prismatic and contour type parts are encouraged to attend

PREREQUISITES

Required courses:
• NX Manufacturing Fundamentals (TR11021)

Or

• Successful completion of the Manufacturing Fundamentals Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:
• Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4-, and 5-axis NC/CNC programming methods and procedures.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview
• Plunge Milling
• Z-Level Milling
• High-speed Machining
• Fixed-axis Contour Milling
• Introduction to 4 and 5-axis Machining
• 5-axis Z-Level
• Sequential Mill basics
• Sequential Mill advanced
• Variable axis Contour Milling
• Profiling walls with a variable tool axis
• Non Cutting Moves
• Wave Geometry Linker in Manufacturing
• Turbomachinery Milling
• Refixturing and the In Process Workpiece
• Hole Milling and Thread Milling
• Generic Motion and Probing operations

Course Description

NX 10.0

Fixed-axis and Multi-axis Milling

Course Code	TR11080
User Level	Intermediate to Advanced
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> de eje fijo y de fresado de ejes múltiples </ strong> está diseñado para programadores NC / CNC que mecanizan piezas simples o complejas con capacidades de herramienta fijas y variables. Los estudiantes aprenderán a crear rutas de herramientas de eje fijo y variable. También se le presentarán los flujos de trabajo NX para el mecanizado de piezas contorneadas, los métodos de mecanizado a alta velocidad, los orificios de fresado y las roscas, el fresado de las piezas del tipo de paletas de turbina y el sondeo de la máquina.
</ P>

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros de fabricación </ li>
<Li> Administradores CAD / CAM </ li>
<Li> Programadores CN / CNC de varios ejes </ li>
<Li> Se anima a los usuarios de máquinas de 3, 4 y 5 ejes para fresar piezas complejas prismáticas y de contorno a asistir </ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
NX Manufacturing Fundamentals (TR11021)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Fundamentos de Manufactura en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>

COURSE TOPICS

• Overview
• Plunge Milling
• Z-Level Milling
• High-speed Machining
• Fixed-axis Contour Milling
• Introduction to 4 and 5-axis Machining
• 5-axis Z-Level
• Sequential Mill basics
• Sequential Mill advanced
• Variable axis Contour Milling
• Profiling walls with a variable tool axis
• Non Cutting Moves
• Wave Geometry Linker in Manufacturing
• Turbomachinery Milling
• Refixturing and the In Process Workpiece
• Hole Milling and Thread Milling
• Generic Motion and Probing operations

Course Description

</ Ul>
Otras recomendaciones:
<Ul>
<Li> Debería tener un conocimiento profundo de los principios de programación NC / CNC y de los métodos y procedimientos de programación CN / CNC de 3, 4 y 5 ejes. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<B> Este curso fue escrito y lanzado contra NX 10.0.2 </ b>

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 10. </ p>

Course Description

NX 11.0

CAM Fixed-axis and Multi-axis Milling

Course Code	TR11080
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Fixed-axis and Multi-axis Milling** course is designed for NC/CNC programmers who machine simple or complex parts with fixed and variable tool capabilities. Students will learn how to create fixed and variable axis tool paths. You will also be introduced to NX workflows for machining contoured parts, high-speed machining methods, milling holes and threads, milling turbine blade type parts, and on machine probing.

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• Multi-axis NC/CNC programmers
• Users of 3, 4 and 5-axis machines for milling complex prismatic and contour type parts are encouraged to attend

PREREQUISITES

Required courses:
• NX Manufacturing Fundamentals (TR11021)

Or

• Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:
• Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4-, and 5-axis NC/CNC programming methods and procedures.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview
• Plunge Milling
• Z-Level Milling
• High-speed Machining
• Fixed-axis Contour Milling
• Introduction to 4 and 5-axis Machining
• 5-axis Z-Level
• Sequential Mill basics
• Sequential Mill advanced
• Variable axis Contour Milling
• Profiling walls with a variable tool axis
• Non Cutting Moves
• Wave Geometry Linker in Manufacturing
• Turbomachinery Milling
• Refixturing and the In Process Workpiece
• Hole Milling and Thread Milling
• Generic Motion and Probing operations

Course Description

NX 11.0

NX CAM Fixed-axis and Multi-axis Milling

Course Code	TR11080
User Level	Intermediate to Advanced
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> de eje fijo y de fresado de ejes múltiples </ strong> está diseñado para programadores NC / CNC que mecanizan piezas simples o complejas con capacidades de herramienta fijas y variables. Los estudiantes aprenderán a crear rutas de herramientas de eje fijo y variable. También se le presentarán los flujos de trabajo NX para el mecanizado de piezas contorneadas, los métodos de mecanizado a alta velocidad, los orificios de fresado y las roscas, el fresado de las piezas del tipo de paletas de turbina y el sondeo de la máquina.
</ P>

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros de fabricación </ li>
<Li> Administradores CAD / CAM </ li>
<Li> Programadores CN / CNC de varios ejes </ li>
<Li> Se anima a los usuarios de máquinas de 3, 4 y 5 ejes para fresar piezas complejas prismáticas y de contorno a asistir </ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
NX Manufacturing Fundamentals (TR11021)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Fundamentos de Manufactura en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>

COURSE TOPICS

- Overview
- Plunge Milling
- Z-Level Milling
- High-speed Machining
- Fixed-axis Contour Milling
- Introduction to 4 and 5-axis Machining
- 5-axis Z-Level
- Sequential Mill basics
- Sequential Mill advanced
- Variable axis Contour Milling
- Profiling walls with a variable tool axis
- Non Cutting Moves
- Wave Geometry Linker in Manufacturing
- Turbomachinery Milling
- Refixturing and the In Process Workpiece
- Hole Milling and Thread Milling
- Generic Motion and Probing operations

Otras recomendaciones:
<Ul>
<Li> Debería tener un conocimiento profundo de los principios de programación NC / CNC y de los métodos y procedimientos de programación CN / CNC de 3, 4 y 5 ejes. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<B> Este curso fue escrito y lanzado contra NX 11.0.1 </ b>
<P> Para las clases <b> LIVE! </ B>, los clientes deben tener NX 11.0.1 instalado. </ P>

NX 9.0

Fixed-axis and Multi-axis Milling

Course Code	TR11080
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Fixed-axis and Multi-axis Milling** course is designed for NC/CNC programmers who machine simple or complex parts with fixed and variable tool capabilities. Students will learn how to create fixed and variable axis tool paths. You will also be introduced to NX workflows for machining contoured parts, high-speed machining methods, milling holes and threads, milling turbine blade type parts, and on machine probing.

WHO SHOULD ATTEND	COURSE TOPICS
• Manufacturing engineers	• Overview
• CAD/CAM managers	• Plunge Milling
• Multi-axis NC/CNC programmers	• Z-Level Milling
• Users of 3, 4 and 5-axis machines for milling complex prismatic and contour type parts are encouraged to attend	• High-speed Machining
	• Fixed-axis Contour Milling
	• Introduction to 4 and 5-axis Machining
	• 5-axis Z-Level
	• Sequential Mill basics

Course Description

• Sequential Mill advanced
• Variable axis Contour Milling
• Profiling walls with a variable tool axis
• Non Cutting Moves
• Wave Geometry Linker in Manufacturing
• Turbomachinery Milling
• Refixturing and the In Process Workpiece
• Hole Milling and Thread Milling
• Generic Motion and Probing operations

Course Description

NX 9.0

Fixed-axis and Multi-axis Milling

Course Code	TR11080
User Level	Intermediate to Advanced
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> de eje fijo y de fresado de ejes múltiples </ strong> está diseñado para programadores NC / CNC que mecanizan piezas simples o complejas con capacidades de herramienta fijas y variables. Los estudiantes aprenderán a crear rutas de herramientas de eje fijo y variable. También se le presentarán los flujos de trabajo NX para el mecanizado de piezas contorneadas, los métodos de mecanizado a alta velocidad, los orificios de fresado y las roscas, el fresado de las piezas del tipo de paletas de turbina y el sondeo de la máquina.
</ P>

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros de fabricación </ li>
<Li> Administradores CAD / CAM </ li>
<Li> Programadores de CN / CNC de varios ejes </ li>
<Li> Se anima a los usuarios de máquinas de 3, 4 y 5 ejes para fresar piezas complejas prismáticas y de contorno a asistir </ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
NX Manufacturing Fundamentals (TR11021)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Fundamentos de Manufactura en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
Otras recomendaciones:
<Ul>
<Li> Debería tener un conocimiento profundo de los principios de programación NC / CNC y de los métodos y procedimientos de programación CN / CNC de 3, 4 y 5 ejes. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

COURSE TOPICS

• Overview
• Plunge Milling
• Z-Level Milling
• High-speed Machining
• Fixed-axis Contour Milling
• Introduction to 4 and 5-axis Machining
• 5-axis Z-Level
• Sequential Mill basics
• Sequential Mill advanced
• Variable axis Contour Milling
• Profiling walls with a variable tool axis
• Non Cutting Moves
• Wave Geometry Linker in Manufacturing
• Turbomachinery Milling
• Refixturing and the In Process Workpiece
• Hole Milling and Thread Milling
• Generic Motion and Probing operations

Course Description

- Student Guide
- Activity Material

NX 10.0

Open API Programming (G2H)

Course Code	TR13110-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **NX Open API Programming** course, an exclusive offering by the Siemens US Training team, introduces students to the NX Open Application Programming Interface (API) and its entire collection of toolkits. This course teaches the basics of interfacing with the Common API through Visual Basic.NET, C#, C/C++, Python and Java. Journaling and ribbon bar customization are also covered. The course includes hands-on lab time for an enhanced learning experience.

WHO SHOULD ATTEND	COURSE TOPICS

Application developers interested in creating NX Open API programs

PREREQUISITES

Required courses:
- Basic Design (TR10053-TC)

Or
- NX CAD Basic Processes (TRCT2215)

Or
- Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

- Understanding navigating the common API
- Using the journal tool
- Turning journals into applications
- Building seamless custom dialogs
- Understanding and making effective use of User Defined Objects
- Understanding runtime license control
- Compiling Visual Basic.NET, C#, C/C++ and Java Open API programs

Course Description

NX 10.0

Open API Programming

Course Code	TR13110
User Level	Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> NX Open API Programming </ strong>, una oferta exclusiva <u> del equipo de formación de Siemens US </ u>, introduce a los estudiantes en la Interfaz de Programación Abierta (API) de NX y toda su colección De herramientas. Este curso enseña los fundamentos de la interfaz con la API común a través de Visual Basic.NET, C #, C / C ++, Python y Java. El diario y la personalización de la barra de la cinta también se cubren. El curso incluye tiempo de laboratorio práctico para una experiencia de aprendizaje mejorada. </ P>

WHO SHOULD ATTEND

<P> Los desarrolladores de aplicaciones interesados en crear programas NX Open API </ p>

PREREQUISITES

<P>Required courses:</P> (TR10053-TC)
<P><B> O </ b>
<Ul>
<Li> Procesos Básicos NX CAD (TRCT2215) </ Li
</ Ul>
<B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Diseño Básico en Learning Advantage (calificación> 70%). Los

COURSE TOPICS

• Understanding navigating the common API
• Using the journal tool
• Turning journals into applications
• Building seamless custom dialogs
• Understanding and making effective use of User Defined Objects
• Understanding runtime license control
• Compiling Visual Basic.NET, C#, C/C++ and Java Open API programs

para prepararse para la evaluación previa. </ Li>
</ Ul>
<Ul>
Estudiante debe tener una comprensión básica de modelado y NX y conocimientos prácticos de uno de los siguientes: Visual Studio, Visual Basic.NET, C #, C / C ++, Python o Java
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

NX 10.0

Introduction to NX for Experienced Users
With Teamcenter Integration

Course Code	TR13155-TC
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **Introduction to NX for Experienced Users** course provides an introduction to NX for those students who will be using NX on a daily basis. Upon completion of this course, accomplished 3D Parametric CAD users will have the capability to create and modify parts, assemblies, and products in NX, leveraging their years of parametric modeling experience. The pace and topics of this course have been carefully planned specifically for the experienced 3D Parametric CAD user.

At the completion of this course the student will productively develop solid models, detail drawings, and product assemblies. This course introduces assembly modeling in the context of a real-life scenario that includes parts modeled by the student as well as part models that have already been created. As with each course developed and taught by Siemens PLM Software professionals, this course capitalizes on Siemens PLM Software's intimate knowledge of the software's development and instructs the students based on the underlying principles incorporated within the NX software.

UPDATE: If you are considering this course, please also consider the NX CAD FastStart for Experienced 3D CAD Users course as an alternative. The NX CAD FastStart for Experienced 3D CAD Users course was designed by our US training experts and exceeds the course objectives of the Introduction to NX for Experienced Users course above. Similar in content, but designed as

Course Description

a process-based deliverable with richer hands-on activities which will help users quickly become efficient in the use of NX.

WHO SHOULD ATTEND

Designers, engineers and CAD/CAM managers.

PREREQUISITES

Working knowledge of parametric modeling

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Working with existing parts
• NX user interface
• Sketching
• Datum features
• Swept features
• Trim Body
• Hole features
• Expressions
• Coordinate systems
• Part Navigator
• Associative copies
• Face and edge operations
• Basic freeform
• Creating and modifying assemblies
• Assembly Constraints
• Assembly Arrangements
• Reference Sets
• Interpart geometry and references
• Component arrays
• Reuse Library
• Revise and replace components
• Drafting

Course Description

NX 10.0

Introduction to NX for Experienced Users

With Teamcenter Integration

Course Code	TR13155-TC
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> La clase se enseña en el entorno de integración de Teamcenter. </ Strong> </ p>
<P> El curso <strong> Introducción a NX para usuarios experimentados </ strong> ofrece una introducción a NX para aquellos estudiantes que usarán NX diariamente. Al completar este curso, los usuarios de CAD paramétricos 3D tienen la capacidad de crear y modificar partes, ensamblajes y productos en NX, aprovechando sus años de experiencia en modelado paramétrico. El ritmo y los temas de este curso han sido cuidadosamente planificados específicamente para el experimentado usuario de CAD paramétrico en 3D. </ P>
<P> Al finalizar este curso, el estudiante desarrollará productivamente modelos sólidos, dibujos de detalle y ensamblajes de productos. Este curso introduce el modelado de ensamblaje en el contexto de un escenario de la vida real que incluye partes modeladas por el estudiante, así como modelos de partes que ya se han creado. Como con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, este curso capitaliza el conocimiento íntimo de Siemens PLM Software del desarrollo del software e instruye a los estudiantes basándose en los principios subyacentes incorporados dentro del software NX.
<P> </ p>
<P> <strong> ACTUALIZACIÓN: </ strong> Si está considerando este curso, considere también el NX CAD FastStart para Expertos en CAD 3D como alternativa. Se ha diseñado el NX CAD FastStart para usuarios experimentados de CAD en 3D Por nuestros expertos en entrenamiento de EE. UU. Y excede los objetivos del curso de Introducción a NX para usuarios experimentados arriba. Similar en el contenido, pero diseñado como un producto basado en el proceso con más ricas actividades prácticas que ayudarán a los usuarios a ser rápidamente eficientes

WHO SHOULD ATTEND	COURSE TOPICS

<P> Diseñadores, ingenieros y administradores CAD / CAM. </ P>

- Working with existing parts
- NX user interface
- Sketching
- Datum features

PREREQUISITES

- Swept features
- Trim Body
- Hole features

<P><P> Conocimiento práctico del modelado paramétrico </ p></P>

- Expressions
- Coordinate systems

PROVIDED COURSE MATERIAL

- Part Navigator
- Associative copies
- Face and edge operations

- Student Guide
- Activity Material

- Basic freeform
- Creating and modifying assemblies
- Assembly Constraints

- Assembly Arrangements
- Reference Sets
- Interpart geometry and references
- Component arrays
- Reuse Library
- Revise and replace components
- Drafting

NX 9.0

Introduction to NX for Experienced Users
With Teamcenter Integration

Course Code	TR13155-TC
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **Introduction to NX for Experienced Users** course provides an introduction to NX for those students who will be using NX on a daily basis. Upon completion of this course, accomplished 3D Parametric CAD users will have the capability to create and modify parts, assemblies, and products in NX, leveraging their years of parametric modeling experience. The pace and topics of this course have been carefully planned specifically for the experienced 3D Parametric CAD user.

At the completion of this course the student will productively develop solid models, detail drawings, and product assemblies. This course introduces assembly modeling in the context of a real-life scenario that includes parts modeled by the student as well as part models that have already been created. As with each course developed and taught by Siemens PLM Software professionals, this course capitalizes on Siemens PLM Software's intimate knowledge of the software's development and instructs the students based on the underlying principles incorporated within the NX software.

WHO SHOULD ATTEND	COURSE TOPICS
Designers, engineers and CAD/CAM managers.	• Working with existing parts

Course Description

Working knowledge of parametric modeling and master model concept

• Student Guide
• Activity Material

- NX user interface
- Sketching
- Datum features
- Swept features
- Trim Body
- Hole features
- Expressions
- Coordinate systems
- Part Navigator
- Associative copies
- Face and edge operations
- Basic freeform
- Creating and modifying assemblies
- Assembly Constraints
- Assembly Arrangements
- Reference Sets
- Interpart geometry and references
- Component arrays
- Reuse Library
- Revise and replace components
- Drafting

Course Description

NX 10.0

Advanced Simulation Processes

Course Code	TR15020
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Advanced Simulation Processes introduces the finite element modeling and analysis tool integrated in NX. It is intended for design engineers and analysts who want to learn the details of how to do finite element analysis on NX models.

The course covers the details of the FEA processes from model preparation, mesh generation and manipulation, material definition, loads and boundary conditions, FEA model checking and solving, to post-processing the results.

• Pre/Post Fundamentals (TR15220)
• Pre/Post Advanced Processes (TR15221)

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Or
• NX CAD Basic Processes (TRCT2215)

Or
• Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommended courses:
• Essentials for NX Designer (TR10051)

Or
• NX CAD Fundamental Processes (TRCT2205)

COURSE TOPICS

• Introduction to Advanced Simulation
• Simulation Navigator
• Selecting entities
• Managing CAE analysis data
• Meshing and mesh quality
• Setting boundary conditions
• Boundary condition types and techniques
• Solving
• Post-processing
• Geometry idealization, repair, and abstraction
• Synchronous Modeling
• Mesh collectors
• Materials and physical properties
• Model quality
• Reports

Course Description

NX 10.0

Advanced Simulation Processes

Course Code	TR15020
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Procesos avanzados de simulación </ strong> introduce la herramienta de modelado y análisis de elementos finitos integrada en NX. Está pensado para los ingenieros de diseño y analistas que desean aprender los detalles de cómo realizar análisis de elementos finitos en los modelos NX. </ P>
<P> El curso cubre los detalles de los procesos FEA desde la preparación del modelo, la generación y manipulación de la malla, la definición del material, las cargas y las condiciones de contorno, la comprobación y resolución del modelo FEA, hasta el postprocesamiento de los resultados.

WHO SHOULD ATTEND	COURSE TOPICS

<Ul>
<Li> Ingenieros de diseño </ li>
<Li> Analistas </ li>
</ Ul>

COURSE TOPICS

• Introduction to Advanced Simulation
• Simulation Navigator
• Selecting entities
• Managing CAE analysis data
• Meshing and mesh quality
• Setting boundary conditions
• Boundary condition types and techniques
• Solving
• Post-processing
• Geometry idealization, repair, and abstraction
• Synchronous Modeling
• Mesh collectors
• Materials and physical properties
• Model quality
• Reports

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><B> O </ b>
<Ul>
<Li> Procesos Básicos NX CAD (TRCT2215)
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</ Ul>
<B> O </ b>
<Ul>

en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para la evaluación previa. </ Li>
</ Ul>
<B> Otros cursos recomendados: </ b>
<Ul>
<Li> Conceptos básicos para NX Designer (TR10051) </ li>
</ Ul>
<B> O </ b>
<Ul>
<Li> Procesos fundamentales de NX CAD

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben tener instalado NX 10. </ p>

Course Description

NX 9.0

Advanced Simulation Processes

Course Code	TR15020
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Advanced Simulation Processes introduces the finite element modeling and analysis tool integrated in NX. It is intended for design engineers and analysts who want to learn the details of how to do finite element analysis on NX models.

The course covers the details of the FEA processes from model preparation, mesh generation and manipulation, material definition, loads and boundary conditions, FEA model checking and solving, to post-processing the results.

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
• Basic Design (TR10053)

• Learning Advantage courses can also be used to prepare for this course (NX Essentials, Feature Modeling Fundamentals, Assembly Modeling Fundamentals.)
• Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of NX modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Advanced Simulation
• Simulation Navigator
• Selecting entities
• Managing CAE analysis data
• Meshing and mesh quality
• Setting boundary conditions
• Boundary condition types and techniques
• Solving
• Post-processing
• Geometry idealization, repair, and abstraction
• Synchronous Modeling
• Mesh collectors
• Materials and physical properties
• Model quality
• Reports

Course Description

NX 9.0

Advanced Simulation Processes

Course Code	TR15020
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Procesos avanzados de simulación </ strong> introduce la herramienta de modelado y análisis de elementos finitos integrada en NX. Está pensado para los ingenieros de diseño y analistas que desean aprender los detalles de cómo realizar análisis de elementos finitos en los modelos NX. </ P>

<P> El curso cubre los detalles de los procesos FEA desde la preparación del modelo, la generación y manipulación de la malla, la definición del material, las cargas y las condiciones de contorno, la comprobación y resolución del modelo FEA, hasta el postprocesamiento de los resultados.

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros de diseño </ li>
<Li> Analistas </ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><Ul>
<Li> Los cursos de Learning Advantage también se pueden utilizar para preparar este curso (NX Essentials, Fundamentos de Modelación de la Función, Fundamentos de Modelación de Ensamblajes). </ Li>
<Li> El participante necesita tener una comprensión básica de los principios de análisis de elementos finitos y un conocimiento práctico del modelado NX. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Advanced Simulation
• Simulation Navigator
• Selecting entities
• Managing CAE analysis data
• Meshing and mesh quality
• Setting boundary conditions
• Boundary condition types and techniques
• Solving
• Post-processing
• Geometry idealization, repair, and abstraction
• Synchronous Modeling
• Mesh collectors
• Materials and physical properties
• Model quality
• Reports

Course Description

NX 10.0
Thermal Simulation (G2H)

Course Code	TR15023-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Thermal Simulation** course introduces product simulation and analysis in NX for heat transfer applications. Students will learn the skills necessary to carry out sophisticated thermal analysis quickly and easily. This course covers basic thermal topics such as conduction, convection, and radiation, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND

Design engineers and analysts who use NX to model heat transfer.

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of NX Thermal
• Meshing and material properties
• Heat transfer introduction
• Thermal initial conditions and boundary conditions
• Thermal couplings
• Radiation
• Thermal solution options and solving
• Post-processing specific for NX Thermal
• Thermal mapping

Course Description

NX 9.0

Thermal Simulation (G2H)

Course Code	TR15023-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Thermal Simulation** course introduces product simulation and analysis in NX for heat transfer applications. Students will learn the skills necessary to carry out sophisticated thermal analysis quickly and easily. This course covers basic thermal topics such as conduction, convection, and radiation, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use NX to model heat transfer.

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of NX Thermal
• Meshing and material properties
• Heat transfer introduction
• Thermal initial conditions and boundary conditions
• Thermal couplings
• Radiation
• Thermal solution options and solving
• Post-processing specific for NX Thermal
• Thermal mapping

Course Description

NX 10.0

Flow Simulation (G2H)

Course Code	TR15024-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Flow Simulation** course introduces product simulation and analysis in NX for 3D fluid flow applications. Students will learn the skills necessary to carry out sophisticated computational fluid dynamics (CFD) analysis quickly and easily. This course covers basic flow topics and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use NX to model fluid flow.

COURSE TOPICS

• Overview of NX Flow
• Fluid volume creation and meshing
• Meshing and material properties
• Flow initial conditions and boundary conditions
• Flow solution options and solving
• Post-processing specific for NX Flow
• Flow mapping

PREREQUISITES

Required courses:
 • Advanced Simulation Processes and Solutions (TR15032)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0
Flow Simulation (G2H)

Course Code	TR15024-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Flow Simulation** course introduces product simulation and analysis in NX for 3D fluid flow applications. Students will learn the skills necessary to carry out sophisticated computational fluid dynamics (CFD) analysis quickly and easily. This course covers basic flow topics and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND

Design engineers and analysts who use NX to model fluid flow.

PREREQUISITES

Required courses:
 • Advanced Simulation Processes and Solutions (TR15032)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of NX Flow
• Fluid volume creation and meshing
• Meshing and material properties
• Flow initial conditions and boundary conditions
• Flow solution options and solving
• Post-processing specific for NX Flow
• Flow mapping

Course Description

NX 10.0

Thermal and Flow Analysis (G2H)

Course Code	TR15025-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Thermal and Flow Analysis** course provides students with comprehensive instruction in the use of NX Thermal and Flow to model heat transfer and 3D fluid flow problems. Students will learn the skills necessary to carry out sophisticated thermal and Computational Fluid Dynamics (CFD) analysis quickly and easily. The course covers both theoretical and practical aspects of how the software handles heat transfer and fluid flows. It also covers coupled thermal-flow analysis, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers who use NX to model heat transfer and fluid flow

- Meshing for thermal analysis
- Meshing for flow analysis
- Thermal boundary conditions
- Thermal couplings
- Radiation to environment
- Flow boundary conditions
- Convection modeling
- Solution attributes and solving
- Coupled thermal-flow analysis
- Post processing
- Mapping

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Successful completion of Advanced Simulation self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs to have a working knowledge of NX modeling, and a basic understanding of finite element methods.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0

Thermal and Flow Analysis (G2H)

Course Code	TR15025-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Thermal and Flow Analysis** course provides students with comprehensive instruction in the use of NX Thermal and Flow to model heat transfer and 3D fluid flow problems. Students will learn the skills necessary to carry out sophisticated thermal and Computational Fluid Dynamics (CFD) analysis quickly and easily. The course covers both theoretical and practical aspects of how the software handles heat transfer and fluid flows. It also covers coupled thermal-flow analysis, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers who use NX to model heat transfer and fluid flow

- Meshing for thermal analysis
- Meshing for flow analysis
- Thermal boundary conditions
- Thermal couplings
- Radiation to environment
- Flow boundary conditions
- Convection modeling
- Solution attributes and solving
- Coupled thermal-flow analysis
- Post processing
- Mapping

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Successful completion of Advanced Simulation self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs to have a working knowledge of NX modeling, and a basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0

Advanced Thermal and Flow Analysis (G2H)

Course Code	TR15026-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Advanced Thermal and Flow Analysis** course provides students with comprehensive instruction in the use of the NX Thermal and Flow - advanced software to model heat transfer, radiation and 3D fluid flow problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, fully coupled with thermal and fluid flow analysis. Students learn how to apply advanced thermal and flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers who use NX to model complex heat transfer and fluid flow for challenging multi-physics applications

- Solar heating
- Radiative heating
- Advanced thermo-optical properties
- Duct networks
- Supersonic flow boundary condition
- Rotating frames of reference
- Rotational and translational periodicity
- Advanced thermal coupling types
- Articulating models
- Active fan controller
- Non-Newtonian fluids
- Humidity and scalar fluid mixtures
- Peltier cooler (TECs)
- Joule heating
- Ablation and charring
- Material libraries
- Phase change
- Particle tracking

PREREQUISITES

Required courses:
- Thermal and Flow Analysis (G2H) (TR15025)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX 9.0

Advanced Thermal and Flow Analysis (G2H)

Course Code	TR15026-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Advanced Thermal and Flow Analysis** course provides students with comprehensive instruction in the use of the NX Thermal and Flow - advanced software to model heat transfer, radiation and 3D fluid flow problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, fully coupled with thermal and fluid flow analysis. Students learn how to apply advanced thermal and flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers who use NX to model complex heat transfer and fluid flow for challenging multi-physics applications

PREREQUISITES

Required courses:
 • Thermal and Flow Analysis (G2H) (TR15025)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Solar heating
• Radiative heating
• Advanced thermo-optical properties
• Duct networks
• Supersonic flow boundary condition
• Rotating frames of reference
• Rotational and translational periodicity
• Advanced thermal coupling types
• Articulating models
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Peltier cooler (TECs)
• Joule heating
• Ablation and charring
• Material libraries
• Phase change
• Particle tracking

Course Description

NX 10.0

Advanced Thermal and Flow Analysis

Course Code	TR15026
User Level	Intermediate
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Avanzado de Análisis Térmico y de Flujo </ strong> proporciona a los estudiantes una instrucción completa en el uso del software NX Thermal and Flow para modelar la transferencia de calor, la radiación y los problemas de flujo de fluidos en 3D. Los estudiantes aprenderán las habilidades necesarias para incorporar el modelado de radiación integral incluyendo calentamiento solar y radiativo, completamente acoplado con análisis de flujo térmico y fluido. Los estudiantes aprenden a aplicar condiciones avanzadas de térmicas y límites de flujo. El curso abarca aspectos teóricos y prácticos de cómo el software maneja la transferencia de calor por conducción, convección y radiación e incluye una variedad de ejemplos y tutoriales que abarcan una amplia gama de aplicaciones.

WHO SHOULD ATTEND	COURSE TOPICS

<P> Diseñadores, ingenieros que utilizan NX para modelar la transferencia de calor compleja y el flujo de fluidos para desafiar aplicaciones multifísicas </ p>

COURSE TOPICS

- Solar heating
- Radiative heating
- Advanced thermo-optical properties
- Duct networks
- Supersonic flow boundary condition
- Rotating frames of reference
- Rotational and translational periodicity
- Advanced thermal coupling types
- Articulating models
- Active fan controller
- Non-Newtonian fluids
- Humidity and scalar fluid mixtures
- Peltier cooler (TECs)
- Joule heating
- Ablation and charring
- Material libraries
- Phase change
- Particle tracking

PREREQUISITES

Required courses:
- (TR15025)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX 9.0

Advanced Thermal and Flow Analysis

Course Code TR15026
User Level Intermediate
Language Spanish
Price $600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration 2 Days

For More Information Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Avanzado de Análisis Térmico y de Flujo </ strong> proporciona a los estudiantes una instrucción completa en el uso del software NX Thermal and Flow para modelar la transferencia de calor, la radiación y los problemas de flujo de fluidos en 3D. Los estudiantes aprenderán las habilidades necesarias para incorporar el modelado de radiación integral incluyendo calentamiento solar y radiativo, completamente acoplado con análisis de flujo térmico y fluido. Los estudiantes aprenden a aplicar condiciones avanzadas de térmicas y límites de flujo. El curso abarca aspectos teóricos y prácticos de cómo el software maneja la transferencia de calor por conducción, convección y radiación e incluye una variedad de ejemplos y tutoriales que abarcan una amplia gama de aplicaciones.

WHO SHOULD ATTEND	COURSE TOPICS

<P> Diseñadores, ingenieros que utilizan NX para modelar la transferencia de calor compleja y el flujo de fluidos para desafiar aplicaciones multifísicas </ p>

PREREQUISITES

Required courses:
  • (TR15025)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Solar heating
• Radiative heating
• Advanced thermo-optical properties
• Duct networks
• Supersonic flow boundary condition
• Rotating frames of reference
• Rotational and translational periodicity
• Advanced thermal coupling types
• Articulating models
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Peltier cooler (TECs)
• Joule heating
• Ablation and charring
• Material libraries
• Phase change
• Particle tracking

Course Description

NX 10.0

Space Systems Thermal (G2H)

Course Code	TR15027-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **NX Space Systems Thermal** course provides students with comprehensive instruction in the use of NX to build spacecraft models, simulating orbital heating including solar and planet fluxes as well as conduction, radiation and convection within the model. Students will learn the skills necessary to build or modify geometry, create a finite element mesh, define orbits and articulation, and carry out sophisticated thermal analysis of spacecraft. The course covers both theoretical and practical aspects of how the software handles heat transfer and includes a variety of examples and tutorials addressing techniques for each step in the process.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers who use NX to model heat transfer and radiation in aerospace applications

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Successful completion of Advanced Simulation self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs to have a working knowledge of NX modeling, and a basic understanding of finite element methods.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to NX
• Meshing and material properties for thermal analyses
• Creating models with primitives
• Heat transfer and space concepts
• Thermal initial and boundary conditions
• Thermal couplings and radiation
• Orbital and solar heating
• Solution options and solving
• Post processing
• Results mapping

Course Description

NX 10.0

Electronic Systems Cooling (G2H)

Course Code	TR15028-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Electronic Systems Cooling** course provides students with comprehensive instruction in the use of NX to build Electronic Systems Cooling models, simulating heat transfer and 3D fluid flow in electronics applications. Students will learn the skills necessary to build or modify geometry, create a finite element mesh, and carry out sophisticated thermal and fluid flow analysis quickly and easily. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing techniques for each step in the process.

WHO SHOULD ATTEND

Designers, engineers who use NX to model heat transfer and fluid flow in electronics applications

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Successful completion of Advanced Simulation self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs to have a working knowledge of NX modeling, and a basic understanding of finite element methods.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

• Introduction to NX
• Geometry idealization and fluid volume creation
• Meshing and material properties for thermal and flow analyses
• Heat transfer and electronics thermal management
• Computational fluid dynamics
• Thermal and flow boundary conditions
• Thermal couplings and radiation
• Solution options and solving
• Post processing
• Results mapping
• PCB Exchange introduction

Course Description

For **LIVE!** classes, customers are required to have NX 10 installed.

NX 10.0

Laminate Composites (G2H)

Course Code	TR15029-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Laminate Composites** course is a comprehensive presentation of the composite laminates tools integrated in NX Advanced Simulation. The course includes laminate simulation processes, draping, failure analysis, optimization, finite element model solution, pre and post-processing, as well as a review of the laminates theory. The hands-on activities and case studies are presented using NX Laminate Composites and NX Advanced Simulation.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
 • Advanced Simulation Processes and Solutions (TR15032)

 • Completion of Advanced Simulation self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs a working knowledge of NX modeling, basic understanding of structural analysis and laminate composites.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of NX Laminate Composites
• Zone-based laminate process
• Ply-based laminate process
• Draping
• Materials and micromechanics
• Solution and post-processing
• Laminate theory
• Laminate failure
• Laminate dynamics analysis
• Laminate optimization

NX 9.0

Laminate Composites (G2H)

Course Code	TR15029-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Laminate Composites** course is a comprehensive presentation of the composite laminates tools integrated in NX Advanced Simulation. The course includes laminate simulation processes, draping, failure analysis, optimization, finite element model solution, pre and post-processing, as well as a review of the laminates theory. The hands-on activities and case studies are presented using NX Laminate Composites and NX Advanced Simulation.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
 • Advanced Simulation Processes and Solutions (TR15032)

 • Completion of Advanced Simulation self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs a working knowledge of NX modeling, basic understanding of structural analysis and laminate composite materials, and familiarity with NX Nastran, MSC Nastran, or ANSYS.

PROVIDED COURSE MATERIAL

COURSE TOPICS

• Overview of NX Laminate Composites
• Zone-based laminate process
• Ply-based laminate process
• Draping
• Materials and micromechanics
• Solution and post-processing
• Laminate theory
• Laminate failure
• Laminate optimization

Course Description

• Student Guide
• Activity Material

NX 10.0

Response Simulation (G2H)

Course Code	TR15030-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **NX Response Simulation** course offers training in the use of Response Simulation for analysis of mechanical components subjected to dynamic loads. In addition the course covers the general theory and methods behind the software and the consideration important to accurate results such as modal sufficiency. The course also provides opportunities for hands-on practice with NX Response Simulation software. A variety of examples will be used to demonstrate typical approaches for problems with transient, sinusoidal, shock and random excitations. Class participants are invited to submit examples of problems.

Update: In newer versions, this course has been updated to Response Dynamics (TR15230).

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for designers and engineers who need to characterize dynamic responses including transient, sinusoidal, random, and shock spectrum.

• Theory of single and multi-degree of freedom systems
• Function creation and manipulation
• Random vibration analysis
• Transient vibration analysis
• Response spectra analysis
• Base excitation methods
• Shock and drop analysis

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

Course Description

• Student Guide
• Activity Material

NX 9.0

Response Simulation (G2H)

Course Code	TR15030-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **NX Response Simulation** course offers training in the use of Response Simulation for analysis of mechanical components subjected to dynamic loads. In addition the course covers the general theory and methods behind the software and the consideration important to accurate results such as modal sufficiency. The course also provides opportunities for hands-on practice with NX Response Simulation software. A variety of examples will be used to demonstrate typical approaches for problems with transient, sinusoidal, shock and random excitations. Class participants are invited to submit examples of problems.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for designers and engineers who need to characterize dynamic responses including transient, sinusoidal, random, and shock spectrum.

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

• Theory of single and multi-degree of freedom systems
• Function creation and manipulation
• Random vibration analysis
• Transient vibration analysis
• Response spectra analysis
• Base excitation methods
• Shock and drop analysis

• Student Guide
• Activity Material

NX 10.0

PCB Exchange (G2H)

Course Code	TR15031-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

PCB Exchange introduces the student to NX workflows that allow design collaboration between NX CAD designers and electrical CAD designers. This course encompasses the printed circuit assembly definition, information exchange, information update, environment customization, and system thermal analysis. It also illustrates how PCB Exchange may be used to generate board thermal models that can be analyzed using NX Electronic Systems Cooling.

WHO SHOULD ATTEND	COURSE TOPICS

Mechanical or electrical designers who are involved in product design using NX, product thermal analysts, and anyone involved in integrated product development.

• Build a printed circuit assembly
• Import and export a board layout
• Update an existing assembly with design changes from ECAD
• Customize the PCB Exchange environment
• Calculate equivalent board thermal characteristics
• Generate board thermal models in NX Electronics Systems Cooling

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Or
 • NX CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

• NX Electronic System Cooling (TR15028)
• NX Advanced Simulation Processes (TR15020)
• General comprehension of the product design process
• Basic understanding of heat transfer
• Basic understanding of finite element analysis (FEA)

• Student Guide
• Activity Material

NX 11.0

PCB Exchange (G2H)

Course Code	TR15031-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

PCB Exchange introduces the student to NX workflows that allow design collaboration between NX CAD designers and electrical CAD designers. This course encompasses the printed circuit assembly definition, information exchange, information update, environment customization, and system thermal analysis. It also illustrates how PCB Exchange may be used to generate board thermal models that can be analyzed using Simcenter Electronic Systems Cooling.

WHO SHOULD ATTEND	COURSE TOPICS
Mechanical or electrical designers who are involved in product design using NX, product thermal analysts, and anyone involved in integrated product development.	• Build a printed circuit assembly • Import and export a board layout • Update an existing assembly with design changes from ECAD • Customize the PCB Exchange environment • Calculate equivalent board thermal characteristics • Generate board thermal models in Simcenter Electronics Systems Cooling

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Course Description

Or
 • NX CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis (FEA) principles, a basic understanding of heat transfer, and a working knowledge of NX modeling.

Other recommended courses:
 • Essentials for NX Designers (TR10051)

Or
 • NX CAD Fundamental Processes (TRCT2205)
 • Electronic Systems Cooling (TR15228)
 • Pre/Post Fundamentals (TR15220)

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

Course Description

NX 12.0

PCB Exchange (G2H)

Course Code	TR15031-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

PCB Exchange introduces the student to NX workflows that allow design collaboration between NX CAD designers and electrical CAD designers. This course encompasses the printed circuit assembly definition, information exchange, information update, environment customization, and system thermal analysis. It also illustrates how PCB Exchange may be used to generate board thermal models that can be analyzed using Simcenter Electronic Systems Cooling.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Mechanical or electrical designers who are involved in product design using NX, product thermal analysts, and anyone involved in integrated product development.

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Or
 • NX CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis (FEA) principles, a basic understanding of heat transfer, and a working knowledge of NX modeling.

Other recommended courses:

COURSE TOPICS

 • Build a printed circuit assembly
 • Import and export a board layout
 • Update an existing assembly with design changes from ECAD
 • Customize the PCB Exchange environment
 • Calculate equivalent board thermal characteristics
 • Generate board thermal models in Simcenter Electronics Systems Cooling

Course Description

• [Essentials for NX Designers](#) (TR10051)

Or

• [NX CAD Fundamental Processes](#)(TRCT2205)
• [Electronic Systems Cooling](#)(TR15228)
• [Pre/Post Fundamentals](#)(TR15220)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

NX 1847

PCB Exchange (G2H)

Course Code	TR15031-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select [Here](#) for more information about G2H courses.

PCB Exchange introduces the student to NX workflows that allow design collaboration between NX CAD designers and electrical CAD designers. This course encompasses the printed circuit assembly definition, information exchange, information update, environment customization, and system thermal analysis. It also illustrates how PCB Exchange may be used to generate board thermal models that can be analyzed using Simcenter 3D Electronic Systems Cooling.

WHO SHOULD ATTEND	COURSE TOPICS

Mechanical or electrical designers who are involved in product design using NX, product thermal analysts, and anyone involved in integrated product development.

• Build a printed circuit assembly
• Import and export a board layout
• Update an existing assembly with design changes from ECAD
• Customize the PCB Exchange environment
• Calculate equivalent board thermal characteristics
• Generate board thermal models in Simcenter Electronics Systems Cooling

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Or
 • NX CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis (FEA) principles, a basic understanding of heat transfer, and a working knowledge of NX modeling.

Other recommended courses:
 • Essentials for NX Designers (TR10051)

Or
 • NX CAD Fundamental Processes (TRCT2205)
 • Electronic Systems Cooling (TR15228)
 • Pre/Post Fundamentals (TR15220)

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

Course Description

NX 9.0

PCB Exchange (G2H)

Course Code	TR15031-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

PCB Exchange will introduce the student to NX PCB Exchange workflows, which allow design collaboration between NX CAD designers and electrical CAD designers. This course will cover the out-of-the-box features of PCB Exchange, and explain how the application may be customized for specific design environments. The course will also demonstrate how PCB Exchange may be used to generate board thermal models that can be analyzed using NX Electronics Systems Cooling.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• CAD Designers
• PCB Designers
• Engineers

PREREQUISITES

Required courses:
• Basic Design (TR10053)

• Electronic System Cooling (TR15028)
• Learning Advantage courses can also be used to prepare for this course (NX Essentials, Feature Modeling Fundamentals.)
• Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of NX modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Building a printed circuit assembly
• Importing/exporting a board layout
• Updating an existing assembly with design changes from ECAD
• Customizing the PCB Exchange environment
• Calculating equivalent board thermal characteristics
• Generating board thermal models in NX Electronics Systems Cooling

NX 10.0

Advanced Simulation Processes and Solutions

Course Code	TR15032
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Advanced Simulation Processes and Solutions introduces the NX Advanced Simulation finite element modeling and results visualization product. It is intended for design engineers and analysts who want to learn the details of how to perform finite element analysis using NX.

Students will learn how to generate meshes, define materials, apply boundary conditions, solve, and review analysis results. Students will also learn techniques for setting up and generating structural, dynamic, and thermal analyses, using optimization, and working with large models.

• Pre/Post Fundamentals (TR15220)
• Pre/Post Advanced Processes (TR15221)
• Pre/Post Solutions (TR15222)

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Or

• NX CAD Basic Processes (TRCT2215)

Or

• Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommended courses:
• Essentials for NX Designer (TR10051)

COURSE TOPICS

• Introduction to Advanced Simulation
• Managing CAE analysis data
• Selecting entities
• Preparing a model for analysis
• Meshing and mesh quality
• Boundary conditions
• Post-processing and reports
• Materials and physical properties
• Linear and nonlinear static analysis
• Modal, thermal, and buckling analysis
• Response simulation
• Contact and gluing
• Symmetry
• Finite element modeling with assemblies
• Optimization
• Adaptive meshing
• Superelements
• Flexible body analysis
• Acoustic analysis
• Multiphysics
• Import and export of model data

Course Description

• Templates

• [NX CAD Fundamental Processes](#) (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

NX 10.0

Advanced Simulation Processes and Solutions

Course Code	TR15032
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Procesos y soluciones avanzadas de simulación </ strong> presenta el modelo de elementos finitos de NX Advanced Simulation y el producto de visualización de resultados. Está dirigido a ingenieros de diseño y analistas que desean aprender los detalles de cómo realizar análisis de elementos finitos usando NX. </ P>
<P> Los estudiantes aprenderán cómo generar mallas, definir materiales, aplicar condiciones de contorno, resolver y revisar los resultados del análisis. Los estudiantes también aprenderán técnicas para configurar y generar análisis estructurales, dinámicos y térmicos, utilizando la optimización y trabajando con modelos grandes.

WHO SHOULD ATTEND	**COURSE TOPICS**

<Ul>
<Li> Ingenieros de diseño </ li>
<Li> Analistas </ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><B> O </ b>
<Ul>
<Li> <a href="http://training.plm.automation.siemens.

• Introduction to Advanced Simulation
• Managing CAE analysis data
• Selecting entities
• Preparing a model for analysis
• Meshing and mesh quality
• Boundary conditions
• Post-processing and reports
• Materials and physical properties
• Linear and nonlinear static analysis
• Modal, thermal, and buckling analysis

Course Description

com/courses/iltdescription.cfm?pID=TRCT2215_____N
X___10.0___5000"> Procesos Básicos NX CAD
(TRCT2215) </ li>
</ Ul>
<B> O </ b>
<Ul>
<Li> Finalización satisfactoria del Asesor de Diseño
Básico en Learning Advantage (calificación> 70%). Los
cursos de Learning Advantage también pueden usarse
para prepararse para la evaluación previa. </ Li>
</ Ul>
<B> Otros cursos recomendados: </ b>
<Ul>
<Li> <a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?pID=TR10051_____NX___10.0___
5000"> Conceptos básicos para NX Designer
(TR10051) </ li>
</ Ul>
<B> O </ b>
<Ul>
<Li> <a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?pID=TRCT2205_____NX___10.0__
_5000"> Procesos fundamentales de CAD de NX

- Response simulation
- Contact and gluing
- Symmetry
- Finite element modeling with assemblies
- Optimization
- Adaptive meshing
- Superelements
- Flexible body analysis
- Acoustic analysis
- Multiphysics
- Import and export of model data
- Templates

| PROVIDED COURSE MATERIAL |

• Student Guide
• Activity Material

| ATTENDANCE REQUIREMENTS |

<P> Para las clases <b> LIVE! </ B>, los clientes deben
tener instalado NX 10. </ p>

Course Description

NX 9.0

Advanced Simulation Processes and Solutions

Course Code	TR15032
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Advanced Simulation Processes and Solutions introduces the NX Advanced Simulation finite element modeling and results visualization product. It is intended for design engineers and analysts who want to learn the details of how to perform finite element analysis using NX.

Students will learn how to generate meshes, define materials, apply boundary conditions, solve, and review analysis results. Students will also learn techniques for setting up and generating structural, dynamic, and thermal analyses, using optimization, and working with large models.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

 • Learning Advantage courses can also be used to prepare for this course (Essentials for NX Designers, Feature Modeling Fundamentals, Assembly Modeling Fundamentals.)
 • Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of NX modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Advanced Simulation
• Managing CAE analysis data
• Selecting entities
• Preparing a model for analysis
• Meshing and mesh quality
• Boundary conditions
• Post-processing and reports
• Materials and physical properties
• Linear and nonlinear static analysis
• Modal, thermal, and buckling analysis
• Response simulation
• Contact and gluing
• Symmetry
• Finite element modeling with assemblies
• Optimization
• Adaptive meshing
• Superelements
• Flexible body analysis
• Acoustic analysis
• Multiphysics
• Import and export of model data
• Templates

Course Description

NX 9.0

Advanced Simulation Processes and Solutions

Course Code	TR15032
User Level	Beginner to Intermediate
Language	Spanish
Price	$2,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Procesos y soluciones avanzadas de simulación </ strong> presenta el modelo de elementos finitos de NX Advanced Simulation y el producto de visualización de resultados. Está dirigido a ingenieros de diseño y analistas que desean aprender los detalles de cómo realizar análisis de elementos finitos usando NX. </ P>

<P> Los estudiantes aprenderán cómo generar mallas, definir materiales, aplicar condiciones de contorno, resolver y revisar los resultados del análisis. Los estudiantes también aprenderán técnicas para configurar y generar análisis estructurales, dinámicos y térmicos, utilizando la optimización y trabajando con modelos grandes.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros de diseño </ li>
<Li> Analistas </ li>
</ Ul>

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><Ul>
<Li> Los cursos de Learning Advantage también se pueden usar para preparar este curso (Essentials for NX Designers, fundamentos de modelado de funciones, fundamentos de modelado de ensamblajes). </ Li>
<Li> El participante necesita tener una comprensión básica de los principios de análisis de elementos finitos y un conocimiento práctico del modelado NX. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Advanced Simulation
• Managing CAE analysis data
• Selecting entities
• Preparing a model for analysis
• Meshing and mesh quality
• Boundary conditions
• Post-processing and reports
• Materials and physical properties
• Linear and nonlinear static analysis
• Modal, thermal, and buckling analysis
• Response simulation
• Contact and gluing
• Symmetry
• Finite element modeling with assemblies
• Optimization
• Adaptive meshing
• Superelements
• Flexible body analysis
• Acoustic analysis
• Multiphysics
• Import and export of model data
• Templates

Course Description

Simcenter 3D 12.0

Pre/Post Processes and Solutions with Samcef

Course Code	TR15035
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course provides instruction on the capabilities of the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization. The Samcef solver is used for all solutions.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or
 • NX Basics (TRU10853)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of NX modeling.

Other recommended courses:
 • NX CAD Fundamental Processes (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Analyze a model in Pre/Post
 • Prepare a model for analysis
 • Mesh a model
 • Define boundary conditions
 • Define contact and gluing
 • Solve the model using the Samcef linear static, buckling, nonlinear, and dynamic analysis types
 • Define superelements
 • Display results

Course Description

• Activity Material

Femap 10.3

Femap Topology Optimization (G2H)

Course Code	TR15040-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Femap Topology Optimization** course provides the theoretical and practical aspects of design optimization using the topology optimization capabilities. Topology optimization can be used to automate the improvement of structural designs by, for example, minimizing weight while observing displacement or other constraints for either static or dynamic models. The class will cover the topology optimization design processes and how to implement them in Femap, as well as interpretation of the results. Best practice techniques and pitfalls will be discussed. The student will learn to use Femap Topology Optimization solution processes through the presentation of lecture materials and the completion of example problems.

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
• Femap (FEMAP101)

Participant needs to have a moderately advanced understanding of finite element analysis principles and a working knowledge of Femap as well as a basic understanding of statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

COURSE TOPICS

• Understanding topology optimization
• Defining design parameters in Femap
• Defining design responses, objective, and constraints in Femap
• Defining optimization algorithm control and post-processing in Femap
• Optimization for static and dynamic analysis
• Understanding the best practices for problem set up

Course Description

• Student Guide
• Activity Material

NX 10.0

Advanced Thermal Simulation (G2H)

Course Code	TR15042-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Advanced Thermal Simulation** provides students with comprehensive instruction in the use of the NX Advanced Thermal Simulation - advanced software to model heat transfer and radiation problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, and 1D duct flow networks. Students learn how to apply advanced thermal boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications

WHO SHOULD ATTEND	COURSE TOPICS

Designers and engineers who use NX to model complex heat transfer and fluid flow for challenging multi-physics applications.

PREREQUISITES

Required courses:
 • Thermal Simulation (G2H) (TR15023)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and heat transfer.

COURSE TOPICS

• Advanced radiation
• Advanced thermal coupling types
• Articulating models
• Duct flow networks
• Joule heating and Peltier cooler
• Axisymmetric analysis
• Material transformation
• Parallel processing
• User subroutines

Course Description

• Student Guide
• Activity Material

NX 9.0

Advanced Thermal Simulation (G2H)

Course Code	TR15042-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Advanced Thermal Simulation** provides students with comprehensive instruction in the use of the NX Advanced Thermal Simulation - advanced software to model heat transfer and radiation problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, and 1D duct flow networks. Students learn how to apply advanced thermal boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications

WHO SHOULD ATTEND	**COURSE TOPICS**

Designers and engineers who use NX to model complex heat transfer and fluid flow for challenging multi-physics applications.

• Advanced radiation
• Advanced thermal coupling types
• Articulating models
• Duct flow networks
• Joule heating and Peltier cooler
• Axisymmetric analysis
• Material transformation
• Parallel processing
• User subroutines

PREREQUISITES

Required courses:
 • Thermal Simulation (G2H) (TR15023)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.

and heat transfer.

• Student Guide
• Activity Material

NX 10.0

Advanced Thermal Simulation

Course Code	TR15042
User Level	Advanced
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> La <strong> Simulación Térmica Avanzada </ strong> proporciona a los estudiantes una instrucción completa en el uso del software avanzado NX Advanced Thermal Modeling para modelar la transferencia de calor y los problemas de radiación. Los estudiantes aprenderán las habilidades necesarias para incorporar el modelado de radiación completo incluyendo calentamiento solar y radiativo, y redes de flujo de conducto 1D. Los estudiantes aprenden cómo aplicar condiciones de límite térmico avanzadas. El curso cubre tanto aspectos teóricos como prácticos de cómo el software maneja la transferencia de calor por conducción, convección y radiación e incluye una variedad de ejemplos y tutoriales dirigidos a una amplia gama de aplicaciones.

WHO SHOULD ATTEND

Diseñadores e ingenieros que utilizan NX para modelar transferencia de calor compleja y flujo de fluidos para desafiar aplicaciones multi-físicas. </ P>

PREREQUISITES

<P>Required courses:</P>
(TR15023)
<P><Ul>
<Li> O la finalización exitosa de cursos avanzados de Simulación Avanzada en Learning Advantage. </ Li>
<Li> Conocimiento práctico del modelado NX. </ Li>
<Li> Comprensión básica del análisis de elementos finitos (FEA) y transferencia de calor. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

COURSE TOPICS

• Advanced radiation
• Advanced thermal coupling types
• Articulating models
• Duct flow networks
• Joule heating and Peltier cooler
• Axisymmetric analysis
• Material transformation
• Parallel processing
• User subroutines

• Student Guide
• Activity Material

NX 9.0

Advanced Thermal Simulation

Course Code **TR15042**
User Level **Advanced**
Language **Spanish**
Price **$600.00 (USD) (Price may not include taxes applicable to your billing region)**
Training Center Duration **2 Days**

For More Information **Learning Services, Mexico (training.mx.plm@siemens.com)**

<P> La <strong> Simulación Térmica Avanzada </ strong> proporciona a los estudiantes una instrucción completa en el uso del software avanzado NX Advanced Thermal Modeling para modelar la transferencia de calor y los problemas de radiación. Los estudiantes aprenderán las habilidades necesarias para incorporar el modelado de radiación completo incluyendo calentamiento solar y radiativo, y redes de flujo de conducto 1D. Los estudiantes aprenden cómo aplicar condiciones de límite térmico avanzadas. El curso cubre tanto aspectos teóricos como prácticos de cómo el software maneja la transferencia de calor por conducción, convección y radiación e incluye una variedad de ejemplos y tutoriales dirigidos a una amplia gama de aplicaciones.

WHO SHOULD ATTEND	COURSE TOPICS

Diseñadores e ingenieros que utilizan NX para modelar transferencia de calor compleja y flujo de fluidos para desafiar aplicaciones multi-físicas. </ P>

• Advanced radiation
• Advanced thermal coupling types
• Articulating models
• Duct flow networks
• Joule heating and Peltier cooler
• Axisymmetric analysis
• Material transformation
• Parallel processing
• User subroutines

PREREQUISITES

<P>Required courses:</P> (TR15023)
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<Li> O la finalización exitosa de cursos avanzados de Simulación Avanzada en Learning Advantage. </ Li>
<Li> Conocimiento práctico del modelado NX. </ Li>
<Li> Comprensión básica del análisis de elementos finitos (FEA) y transferencia de calor. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0

Advanced Flow Simulation (G2H)

Course Code	TR15043-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Advanced Flow Simulation** course provides students with comprehensive instruction in the use of NX Advanced Flow Simulation - advanced software to model 3D fluid flow problems. Students learn how to apply advanced flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles complex 3D fluid flow problems and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers who use NX to model complex heat transfer and fluid flow for challenging multi-physics applications.

COURSE TOPICS

• Parallel processing
• Two-phase flows
• Turbulent flows
• Supersonic flow boundary condition
• Moving frames of reference
• Periodic flow
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Particle tracking

PREREQUISITES

Required courses:
 • Flow Simulation (G2H) (TR15024)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 9.0
Advanced Flow Simulation (G2H)

Course Code	TR15043-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Advanced Flow Simulation** course provides students with comprehensive instruction in the use of NX Advanced Flow Simulation - advanced software to model 3D fluid flow problems. Students learn how to apply advanced flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles complex 3D fluid flow problems and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers who use NX to model complex heat transfer and fluid flow for challenging multi-physics applications.

COURSE TOPICS

• Parallel processing
• Two-phase flows
• Turbulent flows
• Supersonic flow boundary condition
• Moving frames of reference
• Periodic flow
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Particle tracking

PREREQUISITES

Required courses:
 • Flow Simulation (G2H) (TR15024)

 • Or successful completion of Advanced Simulation self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0

Advanced Flow Simulation

Course Code	TR15043
User Level	Advanced
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso de <strong> Simulación de flujo avanzado </ strong> proporciona a los estudiantes una instrucción completa en el uso de NX Advanced Flow Simulation - software avanzado para modelar problemas de flujo de fluidos en 3D. Los estudiantes aprenden cómo aplicar condiciones avanzadas de límites de flujo. El curso abarca aspectos teóricos y prácticos de cómo el software maneja complejos problemas de flujo de fluidos 3D e incluye una variedad de ejemplos y tutoriales que abarcan una amplia gama de aplicaciones.

WHO SHOULD ATTEND	COURSE TOPICS

Diseñadores, ingenieros que utilizan NX para modelar transferencia de calor compleja y flujo de fluidos para desafiar aplicaciones multifísicas. </ P>

- Parallel processing
- Two-phase flows
- Turbulent flows
- Supersonic flow boundary condition
- Moving frames of reference
- Periodic flow
- Active fan controller
- Non-Newtonian fluids
- Humidity and scalar fluid mixtures
- Particle tracking

PREREQUISITES

<P>Required courses:</P> (TR15024)
<P><Ul> <Li> O la finalización exitosa de cursos avanzados de Simulación Avanzada en Learning Advantage. </ Li> <Li> Conocimiento práctico del modelado NX. </ Li> <Li> Comprensión básica del análisis de elementos finitos (FEA) y los principios de la dinámica de fluidos computacional (CFD). </ Li> </ Ul></P>

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX 9.0

Advanced Flow Simulation

Course Code	TR15043
User Level	Advanced
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso de <strong> Simulación de flujo avanzado </ strong> proporciona a los estudiantes una instrucción completa en el uso de NX Advanced Flow Simulation - software avanzado para modelar problemas de flujo de fluidos en 3D. Los estudiantes aprenden cómo aplicar condiciones avanzadas de límites de flujo. El curso abarca aspectos teóricos y prácticos de cómo el software maneja complejos problemas de flujo de fluidos 3D e incluye una variedad de ejemplos y tutoriales que abarcan una amplia gama de aplicaciones.

WHO SHOULD ATTEND

Diseñadores, ingenieros que utilizan NX para modelar transferencia de calor compleja y flujo de fluidos para desafiar aplicaciones multifísicas. </ P>

PREREQUISITES

<P>Required courses:</P> (TR15024)
<P><Ul> <Li> O la finalización exitosa de cursos avanzados de Simulación Avanzada en Learning Advantage. </ Li> <Li> Conocimiento práctico del modelado NX. </ Li> <Li> Comprensión básica del análisis de elementos finitos (FEA) y los principios de la dinámica de fluidos computacional (CFD). </ Li> </ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Parallel processing
• Two-phase flows
• Turbulent flows
• Supersonic flow boundary condition
• Moving frames of reference
• Periodic flow
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Particle tracking

Course Description

NX 10.0

Durability Analysis (G2H)

Course Code	TR15044-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Durability Analysis** course introduces the NX Advanced Durability product for strength and fatigue analysis integrated in NX. This course covers applications of various fatigue analysis methodologies, with theoretical background and hands-on application with NX Advanced Durability.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who want to learn the details of how to perform fatigue and static strength analyses on NX models.

COURSE TOPICS

• Introduction
• Stress life
• Strain life
• Strain gage and function durability
• Random fatigue

PREREQUISITES

Required courses:
 • Advanced Simulation Processes and Solutions (TR15032)

• Working knowledge of NX modeling.
• Basic understanding of finite element analysis

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written and released against to NX 10.0.2

Course Description

NX 9.0

Durability Analysis (G2H)

Course Code	TR15044-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Durability Analysis** course introduces the NX Advanced Durability product for strength and fatigue analysis integrated in NX. This course covers applications of various fatigue analysis methodologies, with theoretical background and hands-on application with NX Advanced Durability.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform fatigue and static strength analyses on NX models.

PREREQUISITES

Required courses:
 • Advanced Simulation Processes and Solutions (TR15032)

 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

COURSE TOPICS

• Introduction
• Stress life
• Strain life
• Strain gage and function durability
• Random fatigue

NX 10.0

Advanced Fluid Modeling (G2H)

Course Code	TR15045-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 Learn how to prepare a complex model for a computational fluid dynamics (CFD) analysis or acoustics analysis.
You will generate surface wrap bodies that can represent fluid domains inside or around models and create boundary layer meshes in the fluid-wall vicinity to capture steep solution gradients in the fluid boundary layer region.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use NX to model fluid flow or acoustics.

- • Introduction to Advanced Fluid Modeling
- • Surface wrapping complex models
- • Boundary layer meshing
- • Exporting flow models to CGNS

PREREQUISITES

Required courses:
 • Advanced Simulation Processes (TR15020)

 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA)
and computational fluid dynamics (CFD) principles.
 • Recommended self-paced courses on Learning
Advantage.
 • Essentials→NX Basics
 • CAD-Foundation→Feature Modeling - Fundamentals.
 • CAD-Foundation→Assembly Modeling -
Fundamentals.
 • CAE-Advanced Simulation→Fundamental workflows.

PROVIDED COURSE MATERIAL

- • Student Guide
- • Activity Material

Course Description

NX 10.0

Motion Simulation (G2H)

Course Code	TR15110-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Motion Simulation is a CAE software application you can use to animate and analyze both kinematic and dynamic motion simulations in terms of critical design positions, forces, velocities, and accelerations. Upon successful completion of this course, students will understand how to apply and edit motion simulations, and use motion simulations to analyze, troubleshoot, and optimize a mechanism design.

 While this course does include classic engineering topics such as statics, dynamics, kinematics and kinetics, the primary objective of this course is to train users in the use and application of the engineering software package. This course will not serve as a substitute for formal engineering education on these topics.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for intended for analysts, engineers, and designers who want to animate and analyze an assembly of moving parts.

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051)

Or
 • NX CAD Fundamental Processes (TRCT2205-TC)

Or
 • Successful completion of Essentials for NX Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Combine rigid bodies (links), joints, and motion drivers to create a mechanism and set it into
motion
 • Manage multiple motion simulations
 • Apply forces, torques, springs, dampers, bushings, and contact in a motion simulation
 • Query a motion simulation for information and edit both model and simulation features.
 • Apply packaging options to generate feedback in the form of marker and component tracing, critical measurements, and interference checking
 • Use spreadsheets and graphing to both animate and analyze a motion simulation
 • Use advanced solutions to simulate component flexibility, transfer loads for a finite element
analysis, and control an electric motor

Course Description

• Student Guide
• Activity Material

NX 9.0

Motion Simulation (G2H)

Course Code	TR15110-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Motion Simulation is a CAE software application you can use to animate and analyze both kinematic and dynamic motion simulations in terms of critical design positions, forces, velocities, and accelerations. Upon successful completion of this course, students will understand how to apply and edit motion simulations, and use motion simulations to analyze, troubleshoot, and optimize a mechanism design.

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WHO SHOULD ATTEND	**COURSE TOPICS**

This course is intended for intended for analysts, engineers, and designers who want to animate and analyze an assembly of moving parts.

 • Combine rigid bodies (links), joints, and motion drivers to create a mechanism and set it into motion
 • Manage multiple motion simulations
 • Apply forces, torques, springs, dampers, bushings, and contact in a motion simulation
 • Query a motion simulation for information and edit both model and simulation features.
 • Apply packaging options to generate feedback in the form of marker and component tracing, critical measurements, and

PREREQUISITES

Required courses:
• Essentials for NX Designers (TR10051)

Course Description

interference checking
 • Use spreadsheets and graphing to both animate and analyze a motion simulation
 • Use advanced solutions to simulate component flexibility, transfer loads for a finite element
analysis, and control an electric motor

Or successful completion of Essentials for NX Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0
Motion Simulation (G2H)

Course Code	TR15110
User Level	Beginner to Intermediate
Language	Spanish
Price	$3,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <b> (G2H) garantizado para mantener </ b>. Seleccione Aquí para obtener más información acerca de los cursos G2H. </ P>

<p> <strong> Motion Simulation </ strong> es una aplicación de software CAE que puede usar para animar y analizar simulaciones de movimiento tanto cinemáticas como dinámicas en términos de posiciones críticas de diseño, fuerzas, velocidades y aceleraciones. Al completar con éxito este curso, los estudiantes comprenderán cómo aplicar y editar simulaciones de movimiento, y usarán simulaciones de movimiento para analizar, resolver problemas y optimizar el diseño de un mecanismo.

 Si bien este curso incluye temas clásicos de ingeniería tales como como estática, dinámica, cinemática y cinética, el objetivo principal de este curso es capacitar a los usuarios en el uso y la aplicación del paquete de software de ingeniería. Este curso no servirá como un sustituto de la educación formal de ingeniería en estos temas.

 </ p>

WHO SHOULD ATTEND

<p> Este curso está destinado a analistas, ingenieros y diseñadores que desean animar y
analizar un conjunto de partes móviles. </ p>

PREREQUISITES

<P>Required courses:</P>
Essentials for NX Designers (TR10051)
<P><b> O </ b>

  Procesos fundamentales de NX CAD (TRCT2205-TC) </ li>
</ ul>
<b> O </ b>

 Finalización satisfactoria de la evaluación de requisitos previos de Essentials for NX Designers en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden utilizar para prepararse para la evaluación de requisitos previos. </ Li>

COURSE TOPICS

 • Combine rigid bodies (links), joints, and motion drivers to create a mechanism and set it into motion
 • Manage multiple motion simulations
 • Apply forces, torques, springs, dampers, bushings, and contact in a motion simulation
 • Query a motion simulation for information and edit both model and simulation features.
 • Apply packaging options to generate feedback in the form of marker and component tracing, critical measurements, and interference checking
 • Use spreadsheets and graphing to both animate and analyze a motion simulation
 • Use advanced solutions to simulate component flexibility, transfer loads for a finite element analysis, and control an electric motor

Course Description

Simcenter 3D 11.0

Motion (G2H)

Course Code	TR15210-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Simcenter Motion is a CAE software application you can use to animate and analyze both kinematic and dynamic motion mechanisms in terms of critical design positions, forces, velocities, and accelerations. Upon successful completion of this course, students will understand how to apply and edit motion simulations, and use motion simulations to analyze, troubleshoot, and optimize a mechanism design.

While this course does include classic engineering topics such as statics, dynamics, and kinematics, the primary objective of this course is to train users in the use and application of the engineering of software package. This course does not serve as a substitute for formal engineering education on these topics.

WHO SHOULD ATTEND	COURSE TOPICS

Analysts, engineers, and designers who want to animate and analyze an assembly of moving parts.

 • Combine rigid bodies (links), joints, and motion drivers to create a mechanism and set it into motion.
 • Manage multiple motion simulations.
 • Apply forces, torques, springs, dampers, bushings, and contact in a motion simulation.
 • Query a motion simulation for information and edit both model and simulation features.
 • Apply packaging options to generate feedback in the form of marker and component tracing, critical measurements, and interference checking.
 • Use spreadsheets and graphing to both animate and analyze a motion simulation.

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051)

Or
 • NX CAD Fundamental Processes (TRCT2205)

Course Description

• Use advanced solutions to simulate component flexibility and transfer loads for a finite element analysis.

Basic understanding of parametric/explicit modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Simcenter 3D 12.0

Motion (G2H)

Course Code	TR15210-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Simcenter Motion is a CAE software application you can use to animate and analyze both kinematic and dynamic motion mechanisms in terms of critical design positions, forces, velocities, and accelerations. Upon successful completion of this course, students will understand how to apply and edit motion simulations, and use motion simulations to analyze, troubleshoot, and optimize a mechanism design.

While this course does include classic engineering topics such as statics, dynamics, and kinematics, the primary objective of this course is to train users in the use and application of the engineering of software package. This course does not serve as a substitute for formal engineering education on these topics.

WHO SHOULD ATTEND	COURSE TOPICS

Analysts, engineers, and designers who want to animate and analyze an assembly of moving parts.

PREREQUISITES

• Combine rigid bodies (links), joints, and motion drivers to create a mechanism and set it into motion.
• Manage multiple motion simulations.
• Apply forces, torques, springs, dampers, bushings, and

Course Description

Required courses:
 • CAD Basic Processes (TRCT2215)

Or
 • NX Basics (TRU10853)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Basic understanding of parametric/explicit modeling.

Other recommended courses:
 • NX CAD Fundamental Processes (TRCT2205)

 • Student Guide
 • Activity Material

contact in a motion simulation.
 • Query a motion simulation for information and edit both model and simulation features.
 • Apply packaging options to generate feedback in the form of marker and component tracing, critical measurements, and interference checking.
 • Use spreadsheets and graphing to both animate and analyze a motion simulation.
 • Analyze tire performance.
 • Control a mechanism using an external control system.
 • Use advanced solutions to simulate component flexibility and transfer loads for a finite element analysis.
 • Use advanced solver functions using model definition files.

Course Description

Simcenter 3D 2019.1

Motion (G2H)

Course Code	TR15210-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Simcenter Motion is a CAE software application you can use to animate and analyze both kinematic and dynamic motion mechanisms in terms of critical design positions, forces, velocities, and accelerations. Upon successful completion of this course, students will understand how to apply and edit motion simulations, and use motion simulations to analyze, troubleshoot, and optimize a mechanism design.

While this course does include classic engineering topics such as statics, dynamics, and kinematics, the primary objective of this course is to train users in the use and application of the engineering of software package. This course does not serve as a substitute for formal engineering education on these topics.

WHO SHOULD ATTEND

Analysts, engineers, and designers who want to animate and analyze an assembly of moving parts.

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Basic understanding of parametric/explicit modeling.

Other recommended courses:
 • NX CAD Fundamental Processes (TRCT2205)

COURSE TOPICS

 • Combine rigid bodies (links), joints, and motion drivers to create a mechanism and set it into motion.
 • Manage multiple motion simulations.
 • Apply forces, torques, springs, dampers, bushings, and contact in a motion simulation.
 • Query a motion simulation for information and edit both model and simulation features.
 • Apply packaging options to generate feedback in the form of marker and component tracing, critical measurements, and interference checking.
 • Use spreadsheets and graphing to both animate and analyze a motion simulation.
 • Analyze tire performance.
 • Control a mechanism using an external control system.
 • Use advanced solutions to simulate component flexibility and transfer loads for a finite element analysis.
 • Use advanced solver functions using model definition files.

Course Description

• Student Guide
• Activity Material

Simcenter 3D 11.0

Motion

Course Code	TR15210
User Level	Advanced
Language	Portuguese
Price	R$ 1.416,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Simcenter Motion is a CAE software application you can use to animate and analyze both kinematic and dynamic motion mechanisms in terms of critical design positions, forces, velocities, and accelerations. Upon successful completion of this course, students will understand how to apply and edit motion simulations, and use motion simulations to analyze, troubleshoot, and optimize a mechanism design.

While this course does include classic engineering topics such as statics, dynamics, and kinematics, the primary objective of this course is to train users in the use and application of the engineering of software package. This course does not serve as a substitute for formal engineering education on these topics.

WHO SHOULD ATTEND	COURSE TOPICS

Analysts, engineers, and designers who want to animate and analyze an assembly of moving parts.

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051)

Or
 • NX CAD Fundamental Processes (TRCT2205)

Basic understanding of parametric/explicit modeling.

 • Combine rigid bodies (links), joints, and motion drivers to create a mechanism and set it into motion.
 • Manage multiple motion simulations.
 • Apply forces, torques, springs, dampers, bushings, and contact in a motion simulation.
 • Query a motion simulation for information and edit both model and simulation features.
 • Apply packaging options to generate feedback in the form of marker and component tracing, critical measurements, and interference checking.
 • Use spreadsheets and graphing to both animate and analyze a motion simulation.
 • Use advanced solutions to simulate component flexibility and transfer loads for a finite element analysis.

Course Description

Simcenter 3D 2019.1

Acoustics
Acoustic Simulation

Course Code	TR15215
User Level	Intermediate to Advanced
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this product training, you will learn the basics of Acoustic Analysis in Simcenter 3D. We will teach how to set up an analysis for interior acoustics, radiation, transmission loss scenarios, random acoustics, and scattering. You will learn how to use Simcenter 3D to prepare a mesh for an acoustical simulation and perform post-processing of acoustic simulation results.

WHO SHOULD ATTEND

This course is intended for users who need to learn how to perform Acoustic Analysis in Simcenter 3D.

PREREQUISITES

Basic understanding of finite element analysis principles and a working knowledge NX Modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Model preparation with Simcenter 3D Pre/Post (Engineering Desktop)
 • Acoustic meshing
 • Mesh quality checking
 • Automatically Matched Layer (AML)
 • Microphones
 • Acoustic sources and conditions
 • Simcenter Nastran acoustic and vibro-acoustic analysis
 • Acoustics BEM acoustic and vibro-acoustic analysis
 • Acoustic Transfer Vector (ATV) solver
 • Finite Element Model Adaptive Order analysis (FEMAO)
 • ATV based response
 • Panel Contribution Analysis
 • Modal contribution analysis
 • Visualizing results and Post-processing
 • Exercises included for all topics

Course Description

Simcenter 3D 11.0

Pre/Post Fundamentals

Course Code	TR15220
User Level	Advanced
Language	Portuguese
Price	R$ 1.416,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

This course introduces the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization. It covers the details of the FEA processes from model preparation, mesh generation and manipulation, material definition, boundary conditions, FEA model checking and solving, to post-processing the results.

NOTICE: When taken in combination with Pre/Post Advanced Processes (TR15221) and Pre/Post Solutions (TR15222), you will have effectively learned the topics from the former Advanced Simulation Processes and Solutions course (TR15032).

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

COURSE TOPICS

• Build and analyze a finite element model with Pre/Post
• Generate a mesh on the model
• Apply boundary conditions to the model
• Select materials and physical properties for the model
• Use fields and expressions to apply boundary conditions
• Post-process the model and generate reports

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Or
 • NX CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of NX modeling.

Other recommended courses:
 • Essentials for NX Designer (TR10051)

Course Description

Or
• [NX CAD Fundamental Processes](#) (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Simcenter 3D 11.0

Pre/Post Fundamentals

Course Code	TR15220
User Level	Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course introduces the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization. It covers the details of the FEA processes from model preparation, mesh generation and manipulation, material definition, boundary conditions, FEA model checking and solving, to post-processing the results.

NOTICE: When taken in combination with [Pre/Post Advanced Processes](#) (TR15221) and [Pre/Post Solutions](#) (TR15222), you will have effectively learned the topics from the former Advanced Simulation Processes and Solutions course ([TR15032](#)).

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

• Build and analyze a finite element model with Pre/Post
• Generate a mesh on the model
• Apply boundary conditions to the model
• Select materials and physical properties for the model
• Use fields and expressions to apply boundary conditions
• Post-process the model and generate reports

PREREQUISITES

Required courses:
• Basic Design (TR10053)

Or
• [NX CAD Basic Processes](#) (TRCT2215)

Or
 • Successful completion of the Basic Design Advisor in
Learning Advantage (score >70%). Learning Advantage
courses can also be used to prepare for the prerequisite
assessment.

Other requirements:
 • Participant needs to have a basic understanding of
finite element analysis principles and a working
knowledge of NX modeling.

Other recommended courses:
 • Essentials for NX Designer (TR10051)

Or
 • NX CAD Fundamental Processes (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 11.0

Pre/Post Fundamentals

Course Code	TR15220
User Level	Advanced
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> Este curso introduce el producto SimCenter Pre / Post (también llamado Engineering Desktop), que proporciona modelado de elementos finitos y visualización de resultados. Abarca los detalles de los procesos FEA desde la preparación del modelo, la generación y manipulación de la malla, la definición del material, las condiciones de los límites, la comprobación y resolución del modelo FEA, hasta el post-procesamiento de los resultados. </ P>

<B> AVISO: </ b> Cuando se toma en combinación con Pre / Post Advanced Procesos (TR15221) y Soluciones Pre / Post (TR15222), habrá aprendido los temas del antiguo curso de Procesos y soluciones avanzadas de simulación (<a href =

WHO SHOULD ATTEND	COURSE TOPICS

<P> Diseñe ingenieros y analistas que deseen aprender los detalles de cómo realizar análisis de elementos finitos usando este software. </ P>

- Build and analyze a finite element model with Pre/Post
- Generate a mesh on the model
- Apply boundary conditions to the model
- Select materials and physical properties for the model
- Use fields and expressions to apply boundary conditions
- Post-process the model and generate reports

PREREQUISITES

<P>Required courses:</P>
Basic Design (TR10053)
<P><! - <b> O </ b>
<Ul>
<Li> Conceptos básicos de NX (TRU10853) </ li>
</ Ul> ->
<B> O </ b>
<Ul>
<Li> Procesos Básicos NX CAD (TRCT2215)
</ li>
</ Ul>
<B> O </ b>
<Ul>

cursos de Learning Advantage también pueden usarse
para prepararse para la evaluación previa. </ Li>
</ Ul>
<B> Otros requisitos: </ b>
<Ul>
<Li> El participante necesita tener una comprensión
básica de los principios de análisis de elementos finitos
y un conocimiento práctico del modelado NX. </ Li>
</ Ul>
<B> Otros cursos recomendados: </ b>
<Ul>
<Li> <a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?c=TR10051"> Essentials for NX
Designer (TR10051) </ li>
</ Ul>
<B> O </ b>
<Ul>
<Li> <a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?pID=TRCT2205_____NX___11.0__
_5000"> Procesos fundamentales de NX CAD

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 12.0
Pre/Post Fundamentals

Course Code	TR15220
User Level	Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course introduces the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization. It covers the details of the FEA processes from model preparation, mesh generation and manipulation, material definition, boundary conditions, FEA model checking and solving, to post-processing the results.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

- Build and analyze a finite element model with Pre/Post
- Simplify a model in preparation for meshing
- Generate a mesh on the model
- Apply boundary conditions to the model
- Select materials and physical properties for the model
- Use fields and expressions to apply boundary conditions
- Post-process the model and generate reports

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or
 • NX Basics (TRU10853)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of NX modeling.

Other recommended courses:
 • NX CAD Fundamental Processes (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Simcenter 3D 12.0

Pre/Post Fundamentals

Course Code	TR15220
User Level	Advanced
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

 Este curso presenta el producto Simcenter Pre / Post (también llamado Engineering Desktop), que proporciona modelado de elementos finitos y visualización de resultados. Cubre los detalles de los procesos FEA desde la preparación del modelo, la generación y manipulación de mallas, la definición del material, las condiciones de contorno, la verificación y resolución del modelo FEA, hasta el procesamiento posterior de los resultados.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or
 • NX Basics (TRU10853)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of

• Build and analyze a finite element model with Pre/Post
• Simplify a model in preparation for meshing
• Generate a mesh on the model
• Apply boundary conditions to the model
• Select materials and physical properties for the model
• Use fields and expressions to apply boundary conditions
• Post-process the model and generate reports

Course Description

knowledge of NX modeling.

Other recommended courses:
• NX CAD Fundamental Processes (TRCT2205)

• Student Guide
• Activity Material

Simcenter 3D 11.0

Pre/Post Advanced Processes

Course Code	TR15221
User Level	Advanced
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

This course provides instruction on some of the more advanced capabilities of the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization.

WHO SHOULD ATTEND	**COURSE TOPICS**

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
• Pre/Post Fundamentals (TR15220)

Other requirements:
 • Basic understanding of finite element analysis principles and a working knowledge NX Modeling.

COURSE TOPICS

• Bolt modeling and pre-loading
• Connecting meshes
• Morphing a mesh
• Changing display of boundary conditions
• Working with coordinate systems
• Defining contact and glue
• Modeling symmetric structures
• Analyzing large assemblies
• Customizing results
• Nonlinear static analysis

Course Description

Simcenter 3D 11.0

Pre/Post Advanced Processes

Course Code	TR15221
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course provides instruction on some of the more advanced capabilities of the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

Other requirements:
 • Basic understanding of finite element analysis principles and a working knowledge NX Modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Bolt modeling and pre-loading
• Connecting meshes
• Morphing a mesh
• Changing display of boundary conditions
• Working with coordinate systems
• Defining contact and glue
• Modeling symmetric structures
• Analyzing large assemblies
• Customizing results
• Nonlinear static analysis

Course Description

Simcenter 3D 11.0

Pre/Post Advanced Processes

Course Code	TR15221
User Level	Advanced
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> Este curso proporciona instrucciones sobre algunas de las capacidades más avanzadas del producto Simcenter Pre / Post (también llamado Engineering Desktop), que proporciona modelado de elementos finitos y visualización de resultados. </p>

WHO SHOULD ATTEND	COURSE TOPICS

<p> Los ingenieros de diseño y los analistas que desean conocer los detalles de cómo realizar análisis de elementos finitos utilizando este software. </ p>

COURSE TOPICS

• Bolt modeling and pre-loading
• Connecting meshes
• Morphing a mesh
• Changing display of boundary conditions
• Working with coordinate systems
• Defining contact and glue
• Modeling symmetric structures
• Analyzing large assemblies
• Customizing results
• Nonlinear static analysis

PREREQUISITES

<P>Required courses:</P>
Pre/Post Fundamentals (TR15220)
<P><b> Otros requisitos: </ b>

 Comprensión básica de los principios de análisis de elementos finitos y un conocimiento práctico del modelado NX. </ li>
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PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 12.0

Pre/Post Advanced Processes

Course Code	TR15221
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course provides instruction on some of the more advanced capabilities of the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

Other requirements:
 • Basic understanding of finite element analysis principles and a working knowledge NX Modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Bolt modeling and pre-loading
• Connecting meshes
• Morphing a mesh
• Adaptive meshing
• Changing display of boundary conditions
• Working with coordinate systems
• Defining contact and glue
• Modeling symmetric structures
• Analyzing large assemblies
• Customizing results

Course Description

Simcenter 3D 11.0

Pre/Post Solutions

Course Code	TR15222
User Level	Advanced
Language	Portuguese
Price	R$ 1.416,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

This course introduces the specialized solutions and analysis types that are available with the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
 • Pre/Post Advanced Processes (TR15221)

Basic understanding of finite element analysis principles and a working knowledge NX Modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Modal, thermal, and buckling analysis
• Optimization
• Adaptive meshing
• Superelements
• Multiphysics
• Acoustic analysis
• Response dynamics
• Flexible body analysis
• Import and export of model data
• Templates

Course Description

Simcenter 3D 11.0

Pre/Post Solutions

Course Code	TR15222
User Level	Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course introduces the specialized solutions and analysis types that are available with the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
• Pre/Post Advanced Processes (TR15221)

Basic understanding of finite element analysis principles and a working knowledge NX Modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Modal, thermal, and buckling analysis
• Optimization
• Adaptive meshing
• Superelements
• Multiphysics
• Acoustic analysis
• Response dynamics
• Flexible body analysis
• Import and export of model data
• Templates

Course Description

Simcenter 3D 12.0

Pre/Post Solutions

Course Code	TR15222
User Level	Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course introduces the specialized solutions and analysis types that are available with the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
 • Pre/Post Advanced Processes (TR15221)

Basic understanding of finite element analysis principles and a working knowledge NX Modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Modal, thermal, and buckling analysis
• Response dynamics
• Flexible body analysis
• Superelements
• FEM and BEM acoustic and vibro-acoustic analysis
• Geometry and topology optimization
• Nonlinear analysis with SOL106, SOL401, and SOL402
• Multiphysics
• Import and export of model data
• Templates

Course Description

Simcenter 3D 11.0

Thermal Simulation (G2H)

Course Code	TR15223-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Simcenter Thermal Simulation** course introduces product simulation and analysis in Simcenter Pre/Post for heat transfer applications. Students will learn the skills necessary to carry out sophisticated thermal analysis quickly and easily. This course covers basic thermal topics such as conduction, convection, and radiation, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND

Design engineers and analysts who use Simcenter to model heat transfer.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to help prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Simcenter Thermal
• Meshing and material properties
• Heat transfer introduction
• Thermal initial conditions and boundary conditions
• Thermal couplings
• Radiation
• Thermal solution options and solving
• Post-processing specific for Simcenter Thermal
• Thermal mapping

Course Description

Simcenter 3D 12.0

Thermal Simulation (G2H)

Course Code	TR15223-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Simcenter Thermal Simulation** course introduces product simulation and analysis in Simcenter Pre/Post for heat transfer applications. Students will learn the skills necessary to carry out sophisticated thermal analysis quickly and easily. This course covers basic thermal topics such as conduction, convection, and radiation, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use Simcenter to model heat transfer.

COURSE TOPICS

• Overview of Simcenter Thermal
• Meshing and material properties
• Heat transfer introduction
• Thermal initial conditions and boundary conditions
• Thermal couplings
• Radiation
• Thermal solution options and solving
• Post-processing specific for Simcenter Thermal
• Thermal mapping

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to help prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 2019.1

Thermal Simulation (G2H)

Course Code	TR15223-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Simcenter Thermal Simulation** course introduces product simulation and analysis in Simcenter Pre/Post for heat transfer applications. Students will learn the skills necessary to carry out sophisticated thermal analysis quickly and easily. This course covers basic thermal topics such as conduction, convection, and radiation, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use Simcenter to model heat transfer.

COURSE TOPICS

• Overview of Simcenter Thermal
• Meshing and material properties
• Heat transfer introduction
• Thermal initial conditions and boundary conditions
• Thermal couplings
• Radiation
• Thermal solution options and solving
• Post-processing specific for Simcenter Thermal
• Thermal mapping

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to help prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 11.0

Flow Simulation (G2H)

Course Code	TR15224-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Simcenter Flow Simulation** course introduces product simulation and analysis in Simcenter Pre/Post for 3D fluid flow applications. Students will learn the skills necessary to carry out sophisticated computational fluid dynamics (CFD) analysis quickly and easily. This course covers basic flow topics and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use Simcenter to model fluid flow.

• Overview of Simcenter Flow
• Fluid volume creation and meshing
• Meshing and material properties
• Flow initial conditions and boundary conditions
• Flow solution options and solving
• Post-processing specific for Simcenter Flow
• Flow mapping

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Or successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 12.0

Flow Simulation (G2H)

Course Code	TR15224-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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- Fluid volume creation and meshing
- Meshing and material properties
- Flow initial conditions and boundary conditions
- Flow solution options and solving
- Post-processing specific for Simcenter Flow
- Flow mapping

PREREQUISITES

Required courses:
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 • Or successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 2019.1

Flow Simulation (G2H)

Course Code	TR15224-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
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WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use Simcenter 3D Pre/Post to model fluid flow.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Or successful completion of Simcenter 3D Pre/Post self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS:

• Overview of Simcenter Flow
• Fluid volume creation and meshing
• Meshing and material properties
• Flow initial conditions and boundary conditions
• Flow solution options and solving
• Post-processing specific for Simcenter Flow
• Flow mapping

Course Description

Simcenter 3D 11.0

Flow Simulation

Course Code	TR15224
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

 The **Simcenter Flow Simulation** course introduces product simulation and analysis in Simcenter Pre/Post for 3D fluid flow applications. Students will learn the skills necessary to carry out sophisticated computational fluid dynamics (CFD) analysis quickly and easily. This course covers basic flow topics and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND

Design engineers and analysts who use Simcenter to model fluid flow.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Or successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Simcenter Flow
• Fluid volume creation and meshing
• Meshing and material properties
• Flow initial conditions and boundary conditions
• Flow solution options and solving
• Post-processing specific for Simcenter Flow
• Flow mapping

Course Description

Simcenter 3D 11.0

Thermal and Flow Analysis (G2H)

Course Code	TR15225-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Thermal and Flow Analysis** course provides students with comprehensive instruction in the use of Simcenter Thermal and Flow to model heat transfer and 3D fluid flow problems. Students will learn the skills necessary to carry out sophisticated thermal and Computational Fluid Dynamics (CFD) analysis quickly and easily. The course covers both theoretical and practical aspects of how the software handles heat transfer and fluid flows. It also covers coupled thermal-flow analysis, and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model heat transfer and fluid flow

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Meshing for thermal analysis
• Meshing for flow analysis
• Thermal boundary conditions
• Thermal couplings
• Radiation to environment
• Flow boundary conditions
• Convection modeling
• Solution attributes and solving
• Coupled thermal-flow analysis
• Post processing
• Mapping

Course Description

Simcenter 3D 12.0

Thermal and Flow Analysis (G2H)

Course Code	TR15225-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
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WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model heat transfer and fluid flow

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

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Course Description

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Thermal and Flow Analysis (G2H)

Course Code	TR15225-GH
User Level	Intermediate
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WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers who use Simcenter 3D Pre/Post to model heat transfer and fluid flow

Course Topics:
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• Thermal couplings
• Radiation to environment
• Flow boundary conditions
• Convection modeling
• Solution attributes and solving
• Coupled thermal-flow analysis
• Post processing
• Mapping

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter 3D Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 11.0

Advanced Thermal and Flow Analysis (G2H)

Course Code	TR15226-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Advanced Thermal and Flow Analysis** course provides students with comprehensive instruction in the use of the Simcenter Advanced Thermal and Flow software to model heat transfer, radiation and 3D fluid flow problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, fully coupled with thermal and fluid flow analysis. Students learn how to apply advanced thermal and flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications

PREREQUISITES

Required courses:
 • Thermal and Flow Analysis (G2H) (TR15225)

 • Or successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and heat transfer.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Solar heating
• Radiative heating
• Advanced thermo-optical properties
• Duct networks
• Supersonic flow boundary condition
• Rotating frames of reference
• Rotational and translational periodicity
• Advanced thermal coupling types
• Articulating models
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Peltier cooler (TECs)
• Joule heating
• Ablation and charring
• Material libraries
• Phase change
• Particle tracking

Course Description

Simcenter 3D 12.0

Advanced Thermal and Flow Analysis (G2H)

Course Code	TR15226-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
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Course Description

Simcenter 3D 2019.1

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 • Thermal and Flow Analysis (G2H) (TR15225)

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 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and heat transfer.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Solar heating
• Radiative heating
• Advanced thermo-optical properties
• Duct networks
• Supersonic flow boundary condition
• Rotating frames of reference
• Rotational and translational periodicity
• Advanced thermal coupling types
• Articulating models
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Peltier cooler (TECs)
• Joule heating
• Ablation and charring
• Material libraries
• Phase change
• Particle tracking

Course Description

Simcenter 3D 11.0

Advanced Thermal and Flow Analysis

Course Code	TR15226
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Advanced Thermal and Flow Analysis** course provides students with comprehensive instruction in the use of the Simcenter Advanced Thermal and Flow software to model heat transfer, radiation and 3D fluid flow problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, fully coupled with thermal and fluid flow analysis. Students learn how to apply advanced thermal and flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications.

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Designers, engineers who use Simcenter Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications

PREREQUISITES

Required courses:
 • Thermal and Flow Analysis (TR15225)

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 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and heat transfer.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Solar heating
• Radiative heating
• Advanced thermo-optical properties
• Duct networks
• Supersonic flow boundary condition
• Rotating frames of reference
• Rotational and translational periodicity
• Advanced thermal coupling types
• Articulating models
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Peltier cooler (TECs)
• Joule heating
• Ablation and charring
• Material libraries
• Phase change
• Particle tracking

Course Description

Simcenter 3D 11.0

Space Systems Thermal (G2H)

Course Code	TR15227-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Simcenter Space Systems Thermal** course provides students with comprehensive instruction in the use of Simcenter Pre/Post to build spacecraft models, simulating orbital heating including solar and planet fluxes as well as conduction, radiation and convection within the model. Students will learn the skills necessary to build or modify geometry, create a finite element mesh, define orbits and articulation, and carry out sophisticated thermal analysis of spacecraft. The course covers both theoretical and practical aspects of how the software handles heat transfer and includes a variety of examples and tutorials addressing techniques for each step in the process.

WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers who use Simcenter Pre/Post to model heat transfer and radiation in aerospace applications

- Introduction to Simcenter
- Meshing and material properties for thermal analyses
- Creating models with primitives
- Heat transfer and space concepts
- Thermal initial and boundary conditions
- Thermal couplings and radiation
- Orbital and solar heating
- Solution options and solving
- Post processing
- Results mapping

PREREQUISITES

Required courses:
- Pre/Post Fundamentals (TR15220)

- Successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
- Working knowledge of NX modeling.
- Basic understanding of finite element analysis (FEA).

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

Simcenter 3D 12.0

Space Systems Thermal (G2H)

Course Code	TR15227-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model heat transfer and radiation in aerospace applications

PREREQUISITES

Required courses:
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 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA).

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Simcenter
•   Meshing and material properties for thermal analyses
• Creating models with primitives
• Heat transfer and space concepts
• Thermal initial and boundary conditions
• Thermal couplings and radiation
• Orbital and solar heating
• Solution options and solving
• Post processing
• Results mapping

Course Description

Simcenter 3D 2019.1

Space Systems Thermal (G2H)

Course Code	TR15227-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND

Designers, engineers who use Simcenter 3D Pre/Post to model heat transfer and radiation in aerospace applications

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter 3D Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA).

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Simcenter
• Meshing and material properties for thermal analyses
• Creating models with primitives
• Heat transfer and space concepts
• Thermal initial and boundary conditions
• Thermal couplings and radiation
• Orbital and solar heating
• Solution options and solving
• Post processing
• Results mapping

Course Description

Simcenter 3D 11.0

Electronic Systems Cooling (G2H)

Course Code	TR15228-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Electronic Systems Cooling** course provides students with comprehensive instruction in the use of Simcenter Pre/Post to build electronic systems cooling models, simulating heat transfer and 3D fluid flow in electronics applications. Students will learn the skills necessary to build or modify geometry, create a finite element mesh, and carry out sophisticated thermal and fluid flow analysis quickly and easily. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing techniques for each step in the process.

WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model heat transfer and fluid flow in electronics applications

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Simcenter Pre/Post
• Geometry idealization and fluid volume creation
• Meshing and material properties for thermal and flow analyses
• Heat transfer and electronics thermal management
• Computational fluid dynamics
• Thermal and flow boundary conditions
• Thermal couplings and radiation
• Solution options and solving
• Post processing
• Results mapping
• PCB Exchange introduction

Course Description

Simcenter 3D 12.0

Electronic Systems Cooling (G2H)

Course Code	TR15228-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model heat transfer and fluid flow in electronics applications

PREREQUISITES

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 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
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COURSE TOPICS

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Course Description

Simcenter 3D 2019.1

Electronic Systems Cooling (G2H)

Course Code	TR15228-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
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WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers who use Simcenter 3D Pre/Post to model heat transfer and fluid flow in electronics applications

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Successful completion of Simcenter 3D Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Introduction to Simcenter Pre/Post
 • Geometry idealization and fluid volume creation
 • Meshing and material properties for thermal and flow analyses
 • Heat transfer and electronics thermal management
 • Computational fluid dynamics
 • Thermal and flow boundary conditions
 • Thermal couplings and radiation
 • Solution options and solving
 • Post processing
 • Results mapping
 • PCB Exchange introduction

Course Description

Simcenter 3D 11.0

Laminate Composites (G2H)

Course Code	TR15229-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Laminate Composites** course is a comprehensive presentation of the composite laminates tools integrated in Simcenter Pre/Post. The course includes laminate simulation processes, draping, failure analysis, optimization, finite element model solution, pre and post-processing, as well as a review of the laminates theory. The hands-on activities and case studies are presented using Simcenter Laminate Composites and Simcenter Pre/Post.

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs a working knowledge of NX modeling, and a basic understanding of structural analysis and laminate composites.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Simcenter Laminate Composites
• Zone-based laminate process
• Ply-based laminate process
• Draping
• Materials and micromechanics
• Solution and post-processing
• Laminate theory
• Laminate failure
• Laminate dynamics analysis
• Laminate optimization

Course Description

Simcenter 3D 12.0

Laminate Composites (G2H)

Course Code	TR15229-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Laminate Composites** course is a comprehensive presentation of the composite laminates tools integrated in Simcenter Pre/Post. The course includes laminate simulation processes, draping, failure analysis, optimization, finite element model solution, pre and post-processing, as well as a review of the laminates theory. The hands-on activities and case studies are presented using Simcenter Laminate Composites and Simcenter Pre/Post.

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs a working knowledge of NX modeling, and a basic understanding of structural analysis and laminate composites.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against Simcenter 3D 12.0.1

COURSE TOPICS

• Overview of Simcenter Laminate Composites
• Zone-based laminate process
• Ply-based laminate process
• Draping
• Materials and micromechanics
• Solution and post-processing
• Laminate theory
• Laminate failure
• Laminate dynamics analysis
• Laminate optimization

Course Description

Simcenter 3D 2019.1

Laminate Composites (G2H)

Course Code	TR15229-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Completion of Simcenter 3D Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs a working knowledge of NX modeling, and a basic understanding of structural analysis and laminate composites.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Simcenter 3D Laminate Composites
• Zone-based laminate process
• Ply-based laminate process
• Draping
• Materials and micromechanics
• Solution and post-processing
• Laminate theory
• Laminate failure
• Laminate dynamics analysis
• Laminate optimization

Course Description

Simcenter 3D 12.0

Laminate Composites

Course Code	TR15229-IF
User Level	Intermediate
Language	English
Price	(Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

p>This event allows access to training files for approved instructors to use when teaching classes coordinated through Siemens PLM.</p>

WHO SHOULD ATTEND	**COURSE TOPICS**

WHO SHOULD ATTEND

Not Available

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs a working knowledge of NX modeling, and a basic understanding of structural analysis and laminate composites.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against Simcenter 3D 12.0.1

COURSE TOPICS

• Presentation file (if available) - HTML file
• Instructor Guide (if available) - HTML file
• Student Activities - HTML file
• Part files - ZIP file
• IF available

Course Description

Simcenter 3D 11.0

Laminate Composites

Course Code	TR15229
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Laminate Composites** course is a comprehensive presentation of the composite laminates tools integrated in Simcenter Pre/Post. The course includes laminate simulation processes, draping, failure analysis, optimization, finite element model solution, pre and post-processing, as well as a review of the laminates theory. The hands-on activities and case studies are presented using Simcenter Laminate Composites and Simcenter Pre/Post.

WHO SHOULD ATTEND

• Design engineers
• Analysts

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Completion of Simcenter Pre/Post self-paced courses on Learning Advantage can also be used to prepare for this course.
 • Participant needs a working knowledge of NX modeling, and a basic understanding of structural analysis and laminate composites.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Overview of Simcenter Laminate Composites
• Zone-based laminate process
• Ply-based laminate process
• Draping
• Materials and micromechanics
• Solution and post-processing
• Laminate theory
• Laminate failure
• Laminate dynamics analysis
• Laminate optimization

Course Description

Simcenter 3D 12.0

Response Dynamics (G2H)

Course Code	TR15230-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Response Dynamics** course offers training in the use of Response Simulation for analysis of mechanical components subjected to dynamic loads. In addition the course covers the general theory and methods behind the software and the consideration important to accurate results such as modal sufficiency. The course also provides opportunities for hands-on practice with NX Response Simulation software. A variety of examples will be used to demonstrate typical approaches for problems with transient, sinusoidal, shock and random excitations. Class participants are invited to submit examples of problems.

WHO SHOULD ATTEND	COURSE TOPICS

This course is intended for designers and engineers who need to characterize dynamic responses including transient, sinusoidal, random, and shock spectrum.

- Theory of single and multi-degree of freedom systems
- Function creation and manipulation
- Random vibration analysis
- Transient vibration analysis
- Response spectra analysis
- Base excitation methods
- Shock and drop analysis

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Basic understanding of finite element analysis principles, statics, solid mechanics, and basic dynamics.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

Simcenter 3D 11.0

Advanced Thermal Simulation (G2H)

Course Code	TR15242-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Advanced Thermal Simulation** course provides students with comprehensive instruction in the use of Simcenter Advanced Thermal to model heat transfer and radiation problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, and 1D duct flow networks. Students learn how to apply advanced thermal boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications

WHO SHOULD ATTEND	COURSE TOPICS

Designers and engineers who use Simcenter Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications.

• Advanced radiation
• Advanced thermal coupling types
• Articulating models
• Duct flow networks
• Joule heating and Peltier cooler
• Axisymmetric analysis
• Material transformation
• Parallel processing
• User subroutines

PREREQUISITES

Required courses:
 • Thermal Simulation (G2H) (TR15223)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 12.0

Advanced Thermal Simulation (G2H)

Course Code	TR15242-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND	COURSE TOPICS

Designers and engineers who use Simcenter Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications.

- Advanced radiation
- Advanced thermal coupling types
- Articulating models
- Duct flow networks
- Joule heating and Peltier cooler
- Axisymmetric analysis
- Material transformation
- Parallel processing
- User subroutines

PREREQUISITES

Required courses:
 • Thermal Simulation (G2H) (TR15223)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

Simcenter 3D 2019.1

Advanced Thermal Simulation (G2H)

Course Code	TR15242-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
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For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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• Advanced thermal coupling types
• Articulating models
• Duct flow networks
• Joule heating and Peltier cooler
• Axisymmetric analysis
• Material transformation
• Parallel processing
• User subroutines

PREREQUISITES

Required courses:
 • Thermal Simulation (G2H) (TR15223)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 11.0

Advanced Thermal Simulation

Course Code	TR15242
User Level	Advanced
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Advanced Thermal Simulation** course provides students with comprehensive instruction in the use of Simcenter Advanced Thermal to model heat transfer and radiation problems. Students will learn the skills necessary to incorporate comprehensive radiation modeling including solar and radiative heating, and 1D duct flow networks. Students learn how to apply advanced thermal boundary conditions. The course covers both theoretical and practical aspects of how the software handles heat transfer by conduction, convection and radiation and includes a variety of examples and tutorials addressing a wide range of applications

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PREREQUISITES

Required courses:
• Thermal Simulation (TR15223)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Advanced radiation
• Advanced thermal coupling types
• Articulating models
• Duct flow networks
• Joule heating and Peltier cooler
• Axisymmetric analysis
• Material transformation
• Parallel processing
• User subroutines

Course Description

Simcenter 3D 11.0

Advanced Flow Simulation (G2H)

Course Code	TR15243-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Advanced Flow Simulation** course provides students with comprehensive instruction in the use of Simcenter Advanced Flow Simulation - advanced software to model 3D fluid flow problems. Students learn how to apply advanced flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles complex 3D fluid flow problems and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications.

PREREQUISITES

Required courses:
 • Flow Simulation (G2H) (TR15224)

 • Or successful completion of Simcenter Pre/Post self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Parallel processing
• Two-phase flows
• Turbulent flows
• Supersonic flow boundary condition
• Moving frames of reference
• Periodic flow
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Particle tracking

Course Description

Simcenter 3D 12.0

Advanced Flow Simulation (G2H)

Course Code	TR15243-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

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WHO SHOULD ATTEND	COURSE TOPICS

Designers, engineers who use Simcenter Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications.

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Required courses:
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• Activity Material

COURSE TOPICS

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• Periodic flow
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• Humidity and scalar fluid mixtures
• Particle tracking

Course Description

Simcenter 3D 2019.1

Advanced Flow Simulation (G2H)

Course Code	TR15243-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

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WHO SHOULD ATTEND

Designers, engineers who use Simcenter 3D Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications.

PREREQUISITES

Required courses:
 • Flow Simulation (G2H) (TR15224)

 • Or successful completion of Simcenter 3D Pre/Post self-paced courses on Learning Advantage.
 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Parallel processing
• Two-phase flows
• Turbulent flows
• Supersonic flow boundary condition
• Moving frames of reference
• Periodic flow
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Particle tracking

Course Description

Simcenter 3D 11.0

Advanced Flow Simulation

Course Code	TR15243
User Level	Advanced
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Advanced Flow Simulation** course provides students with comprehensive instruction in the use of Simcenter Advanced Flow Simulation - advanced software to model 3D fluid flow problems. Students learn how to apply advanced flow boundary conditions. The course covers both theoretical and practical aspects of how the software handles complex 3D fluid flow problems and includes a variety of examples and tutorials addressing a wide range of applications.

WHO SHOULD ATTEND

Designers, engineers who use Simcenter Pre/Post to model complex heat transfer and fluid flow for challenging multi-physics applications.

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 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA) and computational fluid dynamics (CFD) principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Parallel processing
• Two-phase flows
• Turbulent flows
• Supersonic flow boundary condition
• Moving frames of reference
• Periodic flow
• Active fan controller
• Non-Newtonian fluids
• Humidity and scalar fluid mixtures
• Particle tracking

Course Description

Simcenter 3D 11.0

Durabilty Analysis (G2H)

Course Code	TR15244-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The Durability Analysis course introduces the Simcenter Durability product for strength and fatigue analysis.
This course covers applications of various fatigue analysis methodologies, with theoretical background and hands-on application with Simcenter Durability.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform fatigue and static strength analyses on Pre/Post models.

COURSE TOPICS

• Introduction
• Stress life
• Strain life
• Strain gage and function durability
• Random fatigue

PREREQUISITES

Required courses:
 • Pre/Post Solutions (TR15222)

 • Learning Advantage courses can also be used to prepare for this course (Simcenter Pre/Post)

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis (FEA) principles and a working knowledge of NX CAD modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 12.0

Durabilty Analysis (G2H)

Course Code	TR15244-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The Durability Analysis course introduces the Simcenter Durability product for strength and fatigue analysis.
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WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform fatigue and static strength analyses on Pre/Post models.

COURSE TOPICS

• Introduction
• Stress life
• Strain life
• Strain gage and function durability
• Random fatigue

PREREQUISITES

Required courses:
 • Pre/Post Solutions (TR15222)

 • Learning Advantage courses can also be used to prepare for this course (Simcenter Pre/Post)

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis (FEA) principles and a working knowledge of NX CAD modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 11.0

Durabilty Analysis

Course Code	TR15244
User Level	Advanced
Language	Portuguese
Price	R$ 472,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The Durability Analysis course introduces the Simcenter Durability product for strength and fatigue analysis.
This course covers applications of various fatigue analysis methodologies, with theoretical background and hands-on application with Simcenter Durability.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform fatigue and static strength analyses on Pre/Post models.

PREREQUISITES

Required courses:
 • Pre/Post Solutions (TR15222)

 • Learning Advantage courses can also be used to prepare for this course (Simcenter Pre/Post)

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis (FEA) principles and a working knowledge of NX CAD modeling.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction
• Stress life
• Strain life
• Strain gage and function durability
• Random fatigue

Course Description

Simcenter 3D 11.0

Advanced Fluid Modeling (G2H)

Course Code	TR15245-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Learn how to prepare a complex model for a computational fluid dynamics (CFD) analysis or acoustics analysis.
You will generate surface wrap bodies that can represent fluid domains inside or around models and create boundary layer
meshes in the fluid-wall vicinity to capture steep solution gradients in the fluid boundary layer region.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use Simcenter to model fluid flow or acoustics.

• Introduction to Advanced Fluid Modeling
• Surface wrapping complex models
• Boundary layer meshing
• Exporting flow models to CGNS

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA)
and computational fluid dynamics (CFD) principles.

Recommended self-paced courses on Learning
Advantage:

 • Essentials→NX Basics.
 • CAD-Foundation→Feature Modeling - Fundamentals.
 • CAD-Foundation→Assembly Modeling -
Fundamentals.
 • CAE-Simcenter Pre/Post→Fundamental workflows.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter 3D 12.0

Advanced Fluid Modeling (G2H)

Course Code	TR15245-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 Learn how to prepare a complex model for a computational fluid dynamics (CFD) analysis or acoustics analysis.
You will generate surface wrap bodies that can represent fluid domains inside or around models and create boundary layer
meshes in the fluid-wall vicinity to capture steep solution gradients in the fluid boundary layer region.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers and analysts who use Simcenter to
model fluid flow or acoustics.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA)
and computational fluid dynamics (CFD) principles.

Recommended self-paced courses on Learning
Advantage:

 • Essentials→NX Basics.
 • CAD-Foundation→Feature Modeling - Fundamentals.
 • CAD-Foundation→Assembly Modeling -

COURSE TOPICS

• Introduction to Advanced Fluid Modeling
• Surface wrapping complex models
• Boundary layer meshing
• Exporting flow models to CGNS

Course Description

• CAE-Simcenter Pre/Post→Fundamental workflows.

• Student Guide
• Activity Material

Simcenter 3D 2019.1

Advanced Fluid Modeling (G2H)

Course Code	TR15245-GH
User Level	Advanced
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 Learn how to prepare a complex model for a computational fluid dynamics (CFD) analysis or acoustics analysis.
You will generate surface wrap bodies and meshes that can represent fluid domains inside or around models and create
boundary layer meshes in the fluid-wall vicinity to capture steep solution gradients in the fluid boundary layer region.

WHO SHOULD ATTEND

Design engineers and analysts who use Simcenter to
model fluid flow or acoustics.

PREREQUISITES

Required courses:
 • Pre/Post Fundamentals (TR15220)

 • Working knowledge of NX modeling.
 • Basic understanding of finite element analysis (FEA)
and computational fluid dynamics (CFD) principles.

COURSE TOPICS

• Introduction to Advanced Fluid Modeling
• Surface wrapping complex models
• 3D hybrid meshing techniques
• Boundary layer meshing
• Exporting flow models to CGNS

Course Description

Recommended self-paced courses on Learning
Advantage:

 • Essentials→NX Basics.
 • CAD-Foundation→Feature Modeling - Fundamentals.
 • CAD-Foundation→Assembly Modeling -
Fundamentals.
 • CAE-Simcenter 3D Pre/Post→Fundamental workflows.

<div style="text-align:center">

PROVIDED COURSE MATERIAL

</div>

• Student Guide
• Activity Material

NX 10.0

NX Sheet Metal (G2H)

With Teamcenter Integration

Course Code	TR16020-TCGH
User Level	Intermediate
Language	English
Price	$2,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course is taught in the Teamcenter integration environment.

Learn how to use the Sheet Metal application for creating machinery, enclosures, brackets, and other parts normally manufactured with a brake press. You will learn how to create base features like tabs and contour flanges, and build on them with more advanced features such as gussets and louvers.

You will also learn about Advanced Sheet Metal and Aerospace Sheet Metal commands.

UPDATE: In newer versions, this course was renamed to CAD Sheet Metal Modeling Processes (TRCT2480). This updated course was designed by our US training experts.

Course Description

This course is suited for engineers, designers, and CAD/CAM managers who will use the Sheet Metal application.

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

Or
 • NX CAD Fundamental Processes (TRCT2205-TC)

Or
 • Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Working knowledge of:

 • Sketch Fundamentals
 • Basic sheet metal design

200 hours of experience with NX Modeling after course prerequisites.

Basic understanding of Teamcenter. Recommended self-paced course: Teamcenter, Using Teamcenter or Introduction to Teamcenter

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

COURSE TOPICS

 • Learning about sheet metal preferences
 •   Creating sheet metal parts using base features, bends, and flanges
 • Closing corners, creating cutouts and deform features
 • Creating advanced sheet metal features
 • Creating aerospace sheet metal features
 • Flattening sheet metal parts
 • Working with non-sheet metal parts imported from other CAD systems

Course Description

NX 9.0
NX Sheet Metal (G2H)
With Teamcenter Integration

Course Code	TR16020-TCGH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Class is taught in the Teamcenter integration environment.
The **NX Sheet Metal Design** course covers all the features and functions available in NX Sheet Metal, and is geared towards best practices and typical workflows. This course allows for actual hands-on lab time to allow students to learn by doing .

WHO SHOULD ATTEND

Designers, engineers, CAD/CAM managers

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)

Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Typical sheet metal workflow
 •   Preferences and defaults
 •   Base features: tabs, contour flanges, and lofted flanges
 •   Flanges, jogs, and hem flanges
 •   Converting non-sheet metal parts to NX Sheet Metal parts
 •   Bending sheet metal
 •   Flattening sheet metal parts
 •   Sheet metal corners
 • Sheet metal cutouts
 •   Punch type features: dimples, drawn cutouts, solid punches, and louvers
 • Stiffening features: beads and gussets
 • Advanced sheet metal features: bridge bends and advanced flanges
 •   Aerospace Sheet Metal, including aerospace-specific features such as flanges, joggles and lightening cutouts
 •   Workbook projects that allow for more independent work

Course Description

NX 10.0

Routing Electrical (G2H)

Course Code	TR16030-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Routing Electrical** course illustrates how to create connection and component lists, how to qualify parts for use in routing assemblies, how to place parts in a wiring assembly, or to create and edit wiring paths, how to assign components and connectors (manually and automatically), and how to create formboards.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or
Or
 • Essentials for NX Designers (TR10051-TC)

Or
 • Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

• Creating and using connection lists and component lists
• Qualifying parts
• Placing parts
• Routing wiring segments
• Assigning components, connectors and wire routing
• Adding overstock
• Creating formboards
• Synchronizing formboards

Course Description

NX 11.0

CAD Routing Electrical (G2H)

Course Code	TR16030-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Routing Electrical** course illustrates how to create connection and component lists, how to qualify parts for use in routing assemblies, how to place parts in a wiring assembly, or to create and edit wiring paths, how to assign components and connectors (manually and automatically), and how to create formboards.

WHO SHOULD ATTEND	**COURSE TOPICS**

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or
 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

• Creating and using connection lists and component lists
• Qualifying parts
• Placing parts
• Routing wiring segments
• Assigning components, connectors and wire routing
• Adding overstock
• Creating formboards
• Synchronizing formboards

Course Description

For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

NX 12.0

CAD Routing Electrical (G2H)

Course Code	TR16030-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select [Here](#) for more information about G2H courses.

The **Routing Electrical** course illustrates how to create connection and component lists, how to qualify parts for use in routing assemblies, how to place parts in a wiring assembly, or to create and edit wiring paths, how to assign components and connectors (manually and automatically), and how to create formboards.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or
 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Creating and using connection lists and component lists
• Qualifying parts
• Placing parts
• Routing wiring segments
• Assigning components, connectors and wire routing
• Adding overstock
• Creating formboards
• Synchronizing formboards

Course Description

For **LIVE!** classes, customers are required to have NX 12.0.0 installed.

NX 9.0

Routing Electrical (G2H)

Course Code	TR16030-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Routing Electrical** course illustrates how to create connection and component lists, how to qualify parts for use in routing assemblies, how to place parts in a wiring assembly, or to create and edit wiring paths, how to assign components and connectors (manually and automatically), and how to create formboards.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

COURSE TOPICS

• Creating and using connection lists and component lists
• Qualifying parts
• Placing parts
• Routing wiring segments
• Assigning components, connectors and wire routing
• Adding overstock
• Creating formboards
• Synchronizing formboards

PREREQUISITES

Required courses:
 • Intermediate NX Design and Assemblies (TR10056)

 • Or successful completion of Essentials for Designers and Intermediate Design and Assemblies prerequisite assessments on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.
 • The student should understand the logical connections of wiring diagrams
 • And have a working knowledge of the following: NX part file management and have a basic understanding of industrial wiring and harness applications

Course Description

NX 9.0

Routing Mechanical (G2H)

Course Code	TR16035-GH
User Level	Beginner to Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Routing Mechanical** course teaches you to utilize the tools used to quickly define piping paths placed around and through other NX assemblies, to assign NPS stock to these paths, and to qualify and place standard parts (for example, flanges valves, and pipe tees). These subassemblies typically define the systems that provide process piping, disposal of waste, and structural support. The course also includes a section on developing logical diagrams.

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
• Basic Design (TR10053)

• Or successful completion of Essentials for Designers prerequisite assessments on the Learning Advantage (score >70%). Learning Advantage courses can also be

COURSE TOPICS

• Linear paths
• Routings with Heal path
• Routings with Stock
• Routings with Parts
• Routings with Assembly Components
• Adding Parts
• Qualifying Parts
• Routing Systems Diagramming
• Runs and Spools

Course Description

• The student should have basic knowledge of defining and managing assemblies in NX.

• Student Guide
• Activity Material

NX 10.0

Designer Certified Professional (NX)

Course Code	TR18010
User Level	Intermediate
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In response to customer demand, Siemens PLM Software developed a certification program for NX professionals. This program has been designed and structured similar to professional certification programs in other industries that are in place to validate a user's professional qualifications. **NX Designer Certification** consists of three timed sections to measure an individual's understanding and application of NX design: 2 skill based sections and 1 knowledge based section

In **Skill Based Sections**, a test booklet is made available to the test taker. Tasks are completed by opening part and assembly files and then following the instructions for each task. The test taker then answers questions in regards to the task performed.

Knowledge Base sections are an online web based test. It consists of theory questions. The test consist of Multiple Choice, All That Apply, and some True/False questions. At the end of the section, the test takers submits their answers. During the Knowledge Based section, the NX application is not available.

As part of the NX Designer Certification program, Siemens PLM Software has developed an online assessment tool that is valid for all licensed NX users. This tool will help you evaluate your skills prior to the NX Designer Certification. Visit our Learning Advantage web site for your free assessment.

WHO SHOULD ATTEND	**COURSE TOPICS**
Any NX user	See the version specific **Certification Skills Requirements** on the NX Designer Certification page

PREREQUISITES

Course Description

Required courses:
 • Intermediate NX Design and Assemblies (TR10056-TC)

Or

 • NX CAD Advanced Processes (TRCT2220-TC)

Or

 • Successful completion of Intermediate Design and Assemblies Advisor assessments on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.

PROVIDED COURSE MATERIAL

None

Course Description

NX 11.0

Designer Certified Professional (NX)

Course Code	TR18010
User Level	Intermediate
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In response to customer demand, Siemens PLM Software developed a certification program for NX professionals. This program has been designed and structured similar to professional certification programs in other industries that are in place to validate a user's professional qualifications. **NX Designer Certification** consists of three timed sections to measure an individual's understanding and application of NX design: 2 skill based sections and 1 knowledge based section

In **Skill Based Sections**, a test booklet is made available to the test taker. Tasks are completed by opening part and assembly files and then following the instructions for each task. The test taker then answers questions in regards to the task performed.

Knowledge Base sections are an online web based test. It consists of theory questions. The test consist of Multiple Choice, All That Apply, and some True/False questions. At the end of the section, the test takers submits their answers. During the Knowledge Based section, the NX application is not available.

As part of the NX Designer Certification program, Siemens PLM Software has developed an online assessment tool that is valid for all licensed NX users. This tool will help you evaluate your skills prior to the NX Designer Certification. Visit our Learning Advantage web site for your free assessment.

WHO SHOULD ATTEND	COURSE TOPICS

Any NX user

See the version specific **Certification Skills Requirements** on the NX Designer Certification page

PREREQUISITES

Required courses:
 • Intermediate NX Design and Assemblies (TR10056-TC)

Or
 • NX CAD Advanced Processes (TRCT2220-TC)

Or
 • Successful completion of Intermediate Design and Assemblies Advisor assessments on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.

PROVIDED COURSE MATERIAL

None

NX 11

Designer Certified Professional (NX)

Course Code	TR18010
User Level	Intermediate
Language	Spanish
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

En respuesta a la demanda de los clientes, Siemens PLM Software desarrolló un programa de certificación para profesionales de NX. Este programa ha sido diseñado y estructurado de manera similar a los programas de certificación profesional en otras industrias que existen para validar las calificaciones profesionales de un usuario. **La Certificación de diseñador NX** consta de tres secciones cronometradas para medir la comprensión y la aplicación de un diseño NX por parte de una persona: 2 secciones basadas en habilidades y 1 sección basada en conocimiento

En **Secciones Basadas en Habilidades** , un folleto de prueba se pone a disposición del candidato. Las tareas se completan abriendo los archivos de pieza y ensamblaje y luego siguiendo las instrucciones para cada tarea. El examinador responde las preguntas en relación con la tarea realizada.

Las secciones **Base de conocimientos** son una prueba en línea basada en la web. Se compone de preguntas teóricas. La prueba consiste en Opción múltiple, Todo lo que se aplica y algunas preguntas de Verdadero / Falso. Al final de la sección, los examinados envían sus respuestas. Durante la sección de Knowledge Based, la aplicación NX no está disponible.

Como parte del programa de certificación NX Designer, Siemens PLM Software ha desarrollado una herramienta de evaluación en línea que es válida para todos los usuarios de NX con licencia. Esta herramienta le ayudará a evaluar sus habilidades antes de la Certificación de diseñador NX. Visite nuestro sitio web de Learning Advantage para obtener una evaluación gratuita .

WHO SHOULD ATTEND	COURSE TOPICS
Any NX user	See the version specific **Certification Skills Requirements** on the NX Designer Certification page

PREREQUISITES

Required courses:

Course Description

 • Intermediate NX Design and Assemblies (TR10056-TC)

Or

 • [NX CAD Advanced Processes](#) (TRCT2220-TC)

Or

 • Successful completion of Intermediate Design and Assemblies Advisor assessments on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.

PROVIDED COURSE MATERIAL

None

Course Description

NX 12.0

Designer Certified Professional (NX)

Course Code	TR18010
User Level	Intermediate
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In response to customer demand, Siemens PLM Software developed a certification program for NX professionals. This program has been designed and structured similar to professional certification programs in other industries that are in place to validate a user's professional qualifications. **NX Designer Certification** consists of three timed sections to measure an individual's understanding and application of NX design: 2 skill based sections and 1 knowledge based section

In **Skill Based Sections**, a test booklet is made available to the test taker. Tasks are completed by opening part and assembly files and then following the instructions for each task. The test taker then answers questions in regards to the task performed.

Knowledge Base sections are an online web based test. It consists of theory questions. The test consist of Multiple Choice, All That Apply, and some True/False questions. At the end of the section, the test takers submits their answers. During the Knowledge Based section, the NX application is not available.

As part of the NX Designer Certification program, Siemens PLM Software has developed an online assessment tool that is valid for all licensed NX users. This tool will help you evaluate your skills prior to the NX Designer Certification. Visit our Learning Advantage web site for your free assessment.

WHO SHOULD ATTEND	COURSE TOPICS

Any NX user

See the version specific **Certification Skills Requirements** on the NX Designer Certification page

PREREQUISITES

Required courses:
• CAD Advanced Processes (TRCT2220-TC)

Or
• Successful completion of Intermediate Design and Assemblies Advisor assessments on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.

PROVIDED COURSE MATERIAL

None

NX 12

Designer Certified Professional (NX)

Course Code	TR18010
User Level	Intermediate
Language	Spanish
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

En respuesta a la demanda de los clientes, Siemens PLM Software desarrolló un programa de certificación para profesionales de NX. Este programa ha sido diseñado y estructurado de manera similar a los programas de certificación profesional en otras industrias que existen para validar las calificaciones profesionales de un usuario. **La Certificación de diseñador NX** consta de tres secciones cronometradas para medir la comprensión y la aplicación de un diseño NX por parte de una persona: 2 secciones basadas en habilidades y 1 sección basada en conocimiento

En **Secciones Basadas en Habilidades**, un folleto de prueba se pone a disposición del candidato. Las tareas se completan abriendo los archivos de pieza y ensamblaje y luego siguiendo las instrucciones para cada tarea. El examinador responde las preguntas en relación con la tarea realizada.

Las secciones **Base de conocimientos** son una prueba en línea basada en la web. Se compone de preguntas teóricas. La prueba consiste en Opción múltiple, Todo lo que se aplica y algunas preguntas de Verdadero / Falso. Al final de la sección, los examinados envían sus respuestas. Durante la sección de Knowledge Based, la aplicación NX no está disponible.

Como parte del programa de certificación NX Designer, Siemens PLM Software ha desarrollado una herramienta de evaluación en línea que es válida para todos los usuarios de NX con licencia. Esta herramienta le ayudará a evaluar sus habilidades antes de la Certificación de diseñador NX. Visite nuestro sitio web de Learning Advantage para obtener una evaluación gratuita .

WHO SHOULD ATTEND	**COURSE TOPICS**
Any NX user	See the version specific **Certification Skills Requirements** on the NX Designer Certification page

PREREQUISITES	

Required courses:
 • CAD Advanced Processes (TRCT2220-TC)

Or

Course Description

Assemblies Advisor assessments on the Learning
Advantage (score >70%). Learning Advantage courses
can also be used to prepare for the prerequisite
assessments.

<div style="border:1px solid #666; background:#cfe0e8; text-align:center; font-weight:bold; color:#666;">PROVIDED COURSE MATERIAL</div>

None

NX 9.0
Designer Certified Professional (NX)

Course Code	TR18010
User Level	Intermediate
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In response to customer demand, Siemens PLM Software developed a certification program for NX professionals. This program has been designed and structured similar to professional certification programs in other industries that are in place to validate a user's professional qualifications. **NX Designer Certification** consists of three timed sections to measure an individual's understanding and application of NX design: 2 skill based sections and 1 knowledge based section

In **Skill Based Sections**, a test booklet is made available to the test taker. Tasks are completed by opening part and assembly files and then following the instructions for each task. The test taker then answers questions in regards to the task performed.

Knowledge Base sections are an online web based test. It consists of theory questions. The test consist of Multiple Choice, All That Apply, and some True/False questions. At the end of the section, the test takers submits their answers. During the Knowledge Based section, the NX application is not available.

As part of the NX Designer Certification program, Siemens PLM Software has developed an online assessment tool that is valid for all licensed NX users. This tool will help you evaluate your skills prior to the NX Designer Certification. Visit our Learning Advantage web site for your free assessment.

<div style="border:1px solid #666; background:#cfe0e8; text-align:center; font-weight:bold; color:#666;">WHO SHOULD ATTEND</div>

Any NX user

<div style="border:1px solid #666; background:#cfe0e8; text-align:center; font-weight:bold; color:#666;">COURSE TOPICS</div>

See the version specific **Certification Skills Requirements** on the NX Designer Certification page

<div style="border:1px solid #666; background:#cfe0e8; text-align:center; font-weight:bold; color:#666;">PREREQUISITES</div>

Course Description

Required courses:
 • Essentials for NX Designers (TR10051-TC)
 • Intermediate NX Design and Assemblies (TR10056-TC)

 • Or successful completion of Essentials for Designers and Intermediate Design and Assemblies prerequisite assessments on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.
 • To assess your skill level you can take the Learning Advantage NX Pre-Certification Assessment.

PROVIDED COURSE MATERIAL

None

Course Description

Teamcenter 10.1

Teamcenter Certification

Course Code	TR18070
User Level	Intermediate
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The Teamcenter certification is a measurement of an individual's basic understanding and application of Teamcenter in the areas of Usage, Installation and Administration.

The certification will be executed online and can be taken from any Siemens facility where a Siemens employee will act as proctor.

As part of the Teamcenter Certification program, Siemens PLM Software has developed an online assessment tool that is valid for all licensed Teamcenter users. This tool will help you evaluate your skills prior to the Teamcenter Certification. Visit our

Learning Advantage web site for your free assessment.

WHO SHOULD ATTEND	COURSE TOPICS
This certification is intended for any Teamcenter user who desires to validate their understanding of Teamcenter in the areas of Usage, Installation and Administration.	See skills requirements specific for Teamcenter 10.1

PREREQUISITES

 • Or skill level to match the topics taught in the courses listed above. The test taker should be familiar with all topics listed in the Skills Requirements document
 • Or completion of Teamcenter 10.1 Pre-Certification Advisor on the Learning Advantage website with a score greater than 80%.

PROVIDED COURSE MATERIAL

None

Course Description

Teamcenter 11.2

Teamcenter Certification

Course Code	TR18070
User Level	Intermediate
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1/2 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The Teamcenter certification is a measurement of an individual's basic understanding and application of Teamcenter in the areas of Usage, Installation and Administration.

The certification will be executed online and can be taken from any Siemens facility where a Siemens employee will act as proctor.

As part of the Teamcenter Certification program, Siemens PLM Software has developed an online assessment tool that is valid for all licensed Teamcenter users. This tool will help you evaluate your skills prior to the Teamcenter Certification. Visit our

Learning Advantage web site for your free assessment.

WHO SHOULD ATTEND	COURSE TOPICS

This certification is intended for any Teamcenter user who desires to validate their understanding of Teamcenter in the areas of Usage, Installation and Administration.

See skills requirements specific for Teamcenter 11.2

PREREQUISITES

 • Have a working knowledge of the all tasks in the Skills Requirements list.
 • Take the Pre-Certification Advisor in Learning Advantage. Please consider your individual ability to perform the tasks covered in the advisor when evaluating your results.
 • Although the timeframe may vary per individual, we recommend 3-6 months of hands-on experience prior to taking the certification.

PROVIDED COURSE MATERIAL

Course Description

None

NX 8.5

Progressive Die Wizard

Course Code	TR19010
User Level	Intermediate to Advanced
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

Los diseñadores expertos en herramientales en NX adquirirán las habilidades necesarias para reducir significativamente el tiempo de ejecución del diseño de troquel progresivo a través de la automatización **Progresive Die Wizard** . El plan de estudios imita tareas comunes usadas en la construcción del molde y se refuerza usando actividades prácticas. Además, los estudiantes son introducidos a las técnicas de personalización necesarias para realizar plenamente el potencial de las bibliotecas Progressive Die Wizard.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 Diseñador de moldes de dado progresivo e ingenieros de diseño de productos que crearon herramientas de troquel progresivo usando la aplicación de software Progressive Die Wizard

PREREQUISITES

Required courses:
 • Essentials for NX Designers (TR10051-TC)
 • Intermediate NX Design and Assemblies (TR10056-TC)

Or

 • Introduction to NX for Experienced Users (TR13155-TC)

 • Tener entendimiento básico de diseño de troqueles progresivos

COURSE TOPICS

Process Planning:
• Direct unfolding
• Assign material
• Blank nesting/layout
• Strip layout
• One-step Unforming to create free form blanks
• Assign stations
• Simulate process
• Manual simulation process for free form parts
• Calculate force
• Punch and Die insert design
• Die Base and Standard Part additions
• Drawing automation

Course Description

• O la finalización exitosa de las evaluaciones previas de Essentials for Designers y Intermediate Design y Assemblies en Learning Advantage (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para las evaluaciones previas.
• Sería útil tomar el curso NX Sheet Metal, pero no es necesario
• Entender estos conceptos: modelado en NX y conceptos de ensamblaje de NX.
• Conocimiento práctico de la interfaz NX, creación de bocetos y ensamblajes NX

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 10.1

Custom Workflow Handlers

Course Code	TR200ES02L
User Level	Intermediate to Advanced
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This session will cover the creation of custom workflow handlers within the Business Modeler IDE. You will learn how to set up the Business Modeler IDE for codeful customization support, create new releases, libraries, and extensions; as well as how to generate C++ implementation code to insert your custom definitions. A moderate amount of time will be spent reviewing ITK API's that are important for custom handler writing, as well as API's for working with argument values that are specified by the administrator during workflow creation.

Code examples will be provided as well.

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter Application Administrators, and Customizers

PREREQUISITES

Required courses:
 • Application and Data Model Administration (TR25460)

Or

 • Successful completion of the Application and Data Model Administration Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Experience with XML

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

 • Custom Workflow Handlers Course Overview
 • Exploring online Teamcenter help pertaining to EPM Handler customization
 • Introduction to Custom (EPM) workflow Handlers (Types, Definitions, Tasks)
 • Setting up the BMIDE for codeful customization
 • Registering custom handlers
 • Writing custom handle
 • Testing custom handler functionality in a workflow process

Course Description

For this **LIVE!** class, customers will use our cloud
training environment, so no local software is needed.

Teamcenter 10.1

Classification Administration

Course Code	TR200ES06L
User Level	Intermediate to Advanced
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> Esta sesión cubrirá la creación y modificación de la Jerarquía de clasificación, incluidos los grupos, las clases, las vistas, los LOV clave y el diccionario de atributos. Los temas adicionales cubiertos en la clase son los métodos de importación y exportación para los objetos de la jerarquía Clasificación y la personalización de símbolos / iconos para cada uno de los objetos creados. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

<p> Administradores de Teamcenter </ p>

• Introduction to Classification Administration and its interface components
• Creating, modifying, & deleting Classification Groups, Classes, key-LOVs, & View objects
• Creating and managing the attribute dictionary
• Associating attributes to class structures
• Importing and Exporting hierarchy data

PREREQUISITES

<P>Required courses:</P>
Using Teamcenter (TR25150)
<P><b> O </ b>

 Finalización exitosa del uso de Teamcenter Advisor en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden utilizar para prepararse para la evaluación de requisitos previos. </ Li>
</ ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 11.4

Managing Organization and Access Rules
For Application Administrators

Course Code	TR200ES10L
User Level	Intermediate
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Managing Organization & Access Rules is a lesson extracted from the *Managing Administration Data* course, which addresses configuration of the Teamcenter Organizational components within a Teamcenter site; as well as, how to establish access permissions against the organization.

In this course, you will learn how to create and maintain your company's organization within Teamcenter by organizing user accounts, their respective permissions and user groups; as well as, how to view, create and modify Access Permissions using both Object based and Rules based access rules.

This course is compatible with Teamcenter 9, 10 and 11 at all point releases.

WHO SHOULD ATTEND

Teamcenter Application Administrators

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

Day 01

 • Introduction & Course Overview
 • Introduction to Organization Administration
 • Understanding Organization Components
 • Creating Groups, Roles, Users, & Persons
 • Using the make_user utility

Day 02

 • Getting started with Access Manager
 • Access Manager Rule Tree
 • Rule creation process
 • Verifying Access Rules

Course Description

For this **LIVE!** class, customers will use our cloud
training environment, so no local software is needed.

A Learning Advantage account will be provided to each
student for access to training materials.

Teamcenter 11.4

Rich Client Style Sheets

For Application Administrators, and Developers

Course Code	TR200ES11L
User Level	Intermediate to Advanced
Language	English
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Rich Client Style Sheets is a lesson extracted from the *Managing Administration Data* and *Teamcenter Customization* courses, which addresses configuration of the Teamcenter user interface style sheets to display / control how properties are displayed to the user. in the Teamcenter Rich Client.

In this course, you will learn how to work with, modify, create and register Style Sheets to control the display of properties for Users to interact with. This technique can simplify the user interface, decreasing the number of click it takes to perform a task. .

This course is compatible with Teamcenter 9, 10, and 11 at all point releases.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Application Administrators
• Developers

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

COURSE TOPICS

Day 01

• Introduction & Course Overview
• Introduction to style sheets
• Overview of style sheet types
• Search for style sheets
• Register a style sheet

Day 02

• Building style sheets using elements
• Rendering Hints

Course Description

• Experience with XML

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For this **LIVE!** class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for access to training materials.

Teamcenter 11.4

Administering Workflows

For Application Administrators

Course Code	TR200ES12L
User Level	Intermediate
Language	English
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Administering Workflows is a lesson extracted from the *Managing Administration Data* course, which addresses configuration of workflow process templates in Teamcenter.

In this course, you will learn how to build and modify Workflow Process Templates using the Workflow Designer application. An emphasis on the various tasks, workflow handlers, and importing and exporting templates will be a major portion of the lesson. .

This course is compatible with Teamcenter 9.1, 10.1, and all 11.* releases.

WHO SHOULD ATTEND

Teamcenter Application Administrators

PREREQUISITES

Required courses:
• Using Teamcenter Basics (TRCT2440)

COURSE TOPICS

Day 01

• Introduction & Course Overview
• Overview of Workflows in Teamcenter
• Understanding the Workflow Designer Application
• Building Process Templates and Task Templates

Course Description

Day 02

• Working with Tasks
• Working with Workflow Handlers
• Importing and Exporting Process Templates

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For this **LIVE!** class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for access to training materials.

Course Description

Teamcenter 11.4

Administering Workflows

For Application Administrators

Course Code	TR200ES12L
User Level	Intermediate
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

Administrar flujos de trabajo es una lección extraída del curso *Administración de datos de administración* , que aborda la configuración de plantillas de procesos de flujo de trabajo en Teamcenter.

En este curso, aprenderá cómo crear y modificar plantillas de procesos de flujo de trabajo utilizando la aplicación Diseñador de flujo de trabajo. Una parte importante de la lección será un énfasis en las diversas tareas, los controladores de flujo de trabajo y la importación y exportación de plantillas. .

Este curso es compatible con Teamcenter 9.1, 10.1 y todas las versiones 11. *.

WHO SHOULD ATTEND

Teamcenter Application Administrators

PREREQUISITES

Required courses:
 • (TRCT2440)

Or

 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For this **LIVE!** class, customers will use our cloud

COURSE TOPICS

Day 01

• Introduction & Course Overview
• Overview of Workflows in Teamcenter
• Understanding the Workflow Designer Application
• Building Process Templates and Task Templates

Day 02

• Working with Tasks
• Working with Workflow Handlers
• Importing and Exporting Process Templates

training environment, so no local software is needed.

A Learning Advantage account will be provided to each
student for access to training materials.

Teamcenter 11.4

Managing Teamcenter Preferences

For Application Administrators

Course Code	TR200ES13L
User Level	Intermediate
Language	English
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 Hours
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Managing Preferences is a lesson extracted from the *Managing Administration Data* course, which addresses configuration of preferences in Teamcenter.

In this course, you will learn how to view, modify, and create Preferences in the system for various Groups, Roles, Users or the entire site; as well as, understand how to import / export preferences between sites.

This course is compatible with Teamcenter 9, 10, and 11 at all point releases.

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter Application Administrators

Day 01

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)

• Introduction & Course Overview
• Preferences and Options Overview
• Creating / Modifying Preferences
• Importing / Exporting Preferences
• Generating Preference Reports

Or
 • Successful completion of the Introduction to
Teamcenter Advisor in Learning Advantage (score
>70%). Learning Advantage courses can also be used
to prepare for the prerequisite advisor. (**Introduction to
Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

Course Description

• Student Guide
• Activity Material

For this **LIVE!** class, customers will use our cloud
training environment, so no local software is needed.

A Learning Advantage account will be provided to each
student for access to training materials.

Teamcenter 11.4

Administering Queries & Reports

For Application Administrators

Course Code	TR200ES14L
User Level	Intermediate
Language	English
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Administering Queries & Reports is a lesson extracted from the *Managing Administration Data* course, which addresses building and administering Saved Searches (queries) and Reports in Teamcenter.

In this course, you will learn how to configure the administration data in Teamcenter to build Saved Queries and Reports to effectively locate and process data against their attributes.

This course is compatible with Teamcenter 9.1, 10.1, and all 11.* releases.

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter Application Administrators

Day 01

PREREQUISITES

• Introduction & Course Overview
• Saved Queries: Overview
• Saved Queries: Query Builder Application
• Saved Queries: Creating and Managing Saved Queries

Required courses:
 • Using Teamcenter Basics (TRCT2440)

Day 02

Or
 • Successful completion of the Introduction to
Teamcenter Advisor in Learning Advantage (score
>70%). Learning Advantage courses can also be used

 • Saved Queries: Creating and Managing Saved Queries
continued...
 • Saved Queries: Importing and Exporting Query Definitions

- Building Reports: Overview
- Building Reports: Report Builder Application
- Building Reports: Creating and Managing Reports
- Building Reports: Importing / Exporting Reports

Teamcenter self-paced course)

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

ATTENDANCE REQUIREMENTS

For this **LIVE!** class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for access to training materials.

Course Description

Teamcenter 11.4

Migrating Administration Data

For Application Administrators

Course Code	TR200ES15L
User Level	Intermediate to Advanced
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Migrating Administration Data is a lesson extracted from the *Managing Administration Data* course, which addresses the migration and reporting of Administration data between Teamcenter sites.

In this course, you will learn how to utilize the Administration Data Tools functionality, both through the Teamcenter Environment Manager and through the use of utilities to export and import administration data such as, Access Rules, Organization Components, Saved Queries, Preferences, etc. This course also provides a look into executing reports against the administrative data.

This course is compatible with Teamcenter 11 releases.

WHO SHOULD ATTEND

Teamcenter Application Administrators

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

Day 01

 • Introduction & Course Overview
 • Exporting Administration Data using the Teamcenter Environment Manager
 • Exporting Administration Data using a Utility.
 • Performing a Partial Export of Administration Data.

Day 02

 • Running reports against exported data.
 • Importing Administration Data using both the Teamcenter Environment Manager and Utilities.

Course Description

For this **LIVE!** class, customers will use our cloud
training environment, so no local software is needed.

A Learning Advantage account will be provided to each
student for access to training materials.

Teamcenter 11.4

Managing PLMXML/TCXML Transfer Modes
For Application Administrators

Course Code	TR200ES16L
User Level	Intermediate to Advanced
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Managing PLMXML/TCXML Transfer Modes is a lesson extracted from the *Managing Administration Data* course, which addresses configuration of Transfer Mode objects in the Teamcenter Rich Client.

In this course, you will learn the fundamentals and use cases regarding Transfer Mode objects in Teamcenter, and how to locate, modify, create the various components that make up a Transfer Mode. These include Closure Rules, Property Sets, Action Rules, and Filter Rules. Though this class does not involve customizing additional components, some information pertaining to Action Rules and Filter rules will be addressed.

This course is compatible with Teamcenter 9, 10, and 11 at all point releases.

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter Application Administrators

Day 01

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)

 • Introduction & Course Overview
 • Review the Export / Import Process and Use Cases
 • Navigate the PLMXML / TCXML Export Import Administration Application
 • Review Data Model Basics

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Day 02

 • Create a Transfer Mode and its Components
 • Review the XML Definitions

Course Description

Teamcenter 10.1

Introduction to Teamcenter

Course Code	TR25100
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Teamcenter course** introduces the concept of product lifecycle management. You will become familiar with
the rich client user interface and learn the basics of using Teamcenter.

WHO SHOULD ATTEND	**COURSE TOPICS**

Consumers

<table>
<tr><td>**PREREQUISITES**</td></tr>
</table>

Not Available

<table>
<tr><td>**PROVIDED COURSE MATERIAL**</td></tr>
</table>

• Student Guide
• Activity Material

<table>
<tr><td>**ATTENDANCE REQUIREMENTS**</td></tr>
</table>

When this class is delivered via cloud technology in the
LIVE! Online Training environment, there are no local
software installation requirements.

COURSE TOPICS:

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data

Teamcenter 10.1

Introduction to Teamcenter

Course Code	TR25100
User Level	Beginner
Language	Spanish
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Introducción al Teamcenter </ strong> introduce el concepto de gestión del ciclo de vida del producto. Usted se familiarizará con la interfaz de usuario del cliente enriquecido y aprenderá los conceptos básicos de usar Teamcenter. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

<P> Consumidores </ p>

COURSE TOPICS

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Cuando esta clase se entrega a través de la tecnología de la nube en el LIVE! En el entorno de formación en línea, no hay requisitos de instalación de software local. </ P>

Course Description

Teamcenter 11.2

Introduction to Teamcenter

Course Code	TR25100
User Level	Beginner
Language	Portuguese
Price	R$ 472,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Introduction to Teamcenter course** introduces the concept of product lifecycle management. You will become familiar with the rich client user interface and learn the basics of using Teamcenter.

NOTE: This course is also applicable to version 11.4 of Teamcenter.

• Using Teamcenter Basics (TRCT2440)

WHO SHOULD ATTEND	COURSE TOPICS

Consumers

| | COURSE TOPICS |

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data

| PREREQUISITES |

There are no prerequisites for this course.

| PROVIDED COURSE MATERIAL |

• Student Guide
• Activity Material

| ATTENDANCE REQUIREMENTS |

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Course Description

Teamcenter 11.2

Introduction to Teamcenter

Course Code	TR25100
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Introduction to Teamcenter course** introduces the concept of product lifecycle management. You will become familiar with the rich client user interface and learn the basics of using Teamcenter.

NOTE: This course is also applicable to version 11.4 of Teamcenter.

• Using Teamcenter Basics (TRCT2440)

WHO SHOULD ATTEND	COURSE TOPICS

Consumers

COURSE TOPICS
• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data

PREREQUISITES

There are no prerequisites for this course.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Course Description

Teamcenter 11.2

Introduction to Teamcenter

Course Code	TR25100
User Level	Beginner
Language	Spanish
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Introducción al Teamcenter </ strong> introduce el concepto de gestión del ciclo de vida del producto. Usted se familiarizará con la interfaz de usuario del cliente enriquecido y aprenderá los conceptos básicos de usar Teamcenter. </ P>

WHO SHOULD ATTEND

<P> Consumidores </ p>

PREREQUISITES

<P><P> No hay requisitos previos para este curso. </ P></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Cuando esta clase se entrega a través de la tecnología de la nube en el LIVE! En el entorno de formación en línea, no hay requisitos de instalación de software local. </ P>

COURSE TOPICS

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data

Course Description

Teamcenter 10.1

Using Teamcenter

Course Code	TR25150
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Using Teamcenter** course introduces the concept of product lifecycle management. It provides instruction on working in the rich client interface and the basics of using a suite of Teamcenter applications, including My Teamcenter, Structure Manager, embedded viewer, Classification, Workflow Viewer, and Change Manager.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

The primary audience for this course are users who design, configure and release data using Teamcenter.

PREREQUISITES

There are no prerequisites for this course.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

COURSE TOPICS

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data
• Work in projects
• View, build, and edit product structure
• Use standard product data in product structures
• Configure product structure with variants
• Locate and view visualization data and perform basic markup and measurement functions
• Assign tasks, perform tasks, and track the completion of tasks in a workflow process
• Find, interrogate, and create change objects
• Verify the change configuration
• Create, edit and analyze data using Microsoft Office integration
• Overview of thin client

Course Description

Teamcenter 10.1

Using Teamcenter

Course Code	TR25150
User Level	Beginner
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

The **Using Teamcenter** course introduces the concept of product lifecycle management. It provides instruction on working in the rich client interface and the basics of using a suite of Teamcenter applications, including My Teamcenter, Structure Manager, embedded viewer, Classification, Workflow Viewer, and Change Manager.

WHO SHOULD ATTEND

<P> El público principal de este curso son los usuarios que diseñan, configuran y liberan datos con Teamcenter. </ P>

PREREQUISITES

<P><P> No hay requisitos previos para este curso. </ P></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Cuando esta clase se entrega a través de la tecnología de la nube en el LIVE! En el entorno de formación en línea, no hay requisitos de instalación de software locales. </ P>

COURSE TOPICS

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data
• Work in projects
• View, build, and edit product structure
• Use standard product data in product structures
• Configure product structure with variants
• Locate and view visualization data and perform basic markup and measurement functions
• Assign tasks, perform tasks, and track the completion of tasks in a workflow process
• Find, interrogate, and create change objects
• Verify the change configuration
• Create, edit and analyze data using Microsoft Office integration
• Overview of thin client

Course Description

Teamcenter 11.2

Using Teamcenter

Course Code	TR25150
User Level	Beginner
Language	Portuguese
Price	R$ 1.888,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Using Teamcenter** course introduces the concept of product lifecycle management. It provides instruction on working in the rich client interface and the basics of using a suite of Teamcenter applications, including My Teamcenter, Structure Manager, embedded viewer, Classification, Workflow Viewer, and Change Manager.

NOTE: This course is also applicable to version 11.4 of Teamcenter.

WHO SHOULD ATTEND	COURSE TOPICS

The primary audience for this course are users who design, configure and release data using Teamcenter.

PREREQUISITES

There are no prerequisites for this course.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

COURSE TOPICS

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data
• Work in projects
• View, build, and edit product structure
• Use standard product data in product structures
• Locate and view visualization data and perform basic markup and measurement functions
• Assign tasks, perform tasks, and track the completion of tasks in a workflow process
• Find, interrogate, and create change objects
• Verify the change configuration
• Create, edit and analyze data using Microsoft Office integration

Course Description

Teamcenter 11.2

Using Teamcenter

Course Code	TR25150
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Using Teamcenter** course introduces the concept of product lifecycle management. It provides instruction on working in the rich client interface and the basics of using a suite of Teamcenter applications, including My Teamcenter, Structure Manager, embedded viewer, Classification, Workflow Viewer, and Change Manager.

NOTE: This course is also applicable to version 11.4 of Teamcenter.

WHO SHOULD ATTEND

The primary audience for this course are users who design, configure and release data using Teamcenter.

PREREQUISITES

There are no prerequisites for this course.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

COURSE TOPICS

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data
• Work in projects
• View, build, and edit product structure
• Use standard product data in product structures
• Locate and view visualization data and perform basic markup and measurement functions
• Assign tasks, perform tasks, and track the completion of tasks in a workflow process
• Find, interrogate, and create change objects
• Verify the change configuration
• Create, edit and analyze data using Microsoft Office integration

Course Description

Teamcenter 11.2

Using Teamcenter

Course Code	TR25150
User Level	Beginner
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Uso de Teamcenter </ strong> introduce el concepto de gestión del ciclo de vida del producto. Ofrece instrucciones sobre cómo trabajar en la interfaz de Rich Client y los conceptos básicos de usar una suite de aplicaciones de Teamcenter, como My Teamcenter, Structure Manager, Visor incorporado, Classification, Workflow Viewer y Change Manager.

WHO SHOULD ATTEND

<P> El público principal de este curso son los usuarios que diseñan, configuran y liberan datos con Teamcenter. </ P>

PREREQUISITES

<P><P> No hay requisitos previos para este curso. </ P></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Cuando esta clase se entrega a través de la tecnología de la nube en el LIVE! En el entorno de formación en línea, no hay requisitos de instalación de software locales. </ P>

COURSE TOPICS

• Overview of Teamcenter terms and concepts
• Use rich client user interface to perform basic tasks
• Locate, view, and report on product data
• Create Teamcenter items and update properties
• Protect and access product data
• Work in projects
• View, build, and edit product structure
• Use standard product data in product structures
 • Locate and view visualization data and perform basic markup and measurement functions
 • Assign tasks, perform tasks, and track the completion of tasks in a workflow process
 • Find, interrogate, and create change objects
 • Verify the change configuration
 • Create, edit and analyze data using Microsoft Office integration

Course Description

Product Costing Basics

Course Code	TR25180
User Level	Beginner to Intermediate
Language	Portuguese
Price	R$ 1.416,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Product Costing Basics** course provides instructions on working in the Teamcenter Product Cost Management interface and the basics of creating cost estimates.

In the course, you will learn about the key features of Teamcenter Product Cost Management and about the structure and components of a calculation. You calculate costs for a variety of products offering you an overview of different aspects of the estimation process. Specifically, you create estimates for several types of parts, import a bill of materials for an assembly, change parameters within the assembly, and learn to adapt the user interface to suit your needs.

Notes:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class. Siemens can provide TcPCM temporary licenses as needed.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• OEMs
• Suppliers
• Cost Engineers
• Cost Estimators

COURSE TOPICS

• Introduction to Product Costing
• Product Cost Management Interface
• Searching for parts, calculations, and data
• Introduction to master data
• Creating an initial calculation
• Modifying calculation settings
• Working with projects
• Importing a BOM from an Excel file
• Performing a mass data change
• Calculating an injection molding part
• Calculating a stamping part
• Calculating a turning part

PREREQUISITES

• Basic knowledge of cost engineering
 • General manufacturing knowledge of the parts whose costs you want to calculate
 • Familiarity with the basics of using software, such as drag and drop, right and left mouse button behavior, and context menus

PROVIDED COURSE MATERIAL

Course Description

• Student Guide
• Activity Material

Teamcenter Product Costing 8.1

Product Costing Basics

Course Code	TR25180
User Level	Beginner to Intermediate
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Product Costing Basics** course provides instructions on working in the Teamcenter Product Cost Management interface and the basics of creating cost estimates.

In the course, you will learn about the key features of Teamcenter Product Cost Management and about the structure and components of a calculation. You calculate costs for a variety of products offering you an overview of different aspects of the estimation process. Specifically, you create estimates for several types of parts, import a bill of materials for an assembly, change parameters within the assembly, and learn to adapt the user interface to suit your needs.

Notes:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class. Siemens can provide TcPCM temporary licenses as needed.

WHO SHOULD ATTEND

• OEMs
• Suppliers
• Cost Engineers
• Cost Estimators

PREREQUISITES

COURSE TOPICS

• Introduction to Product Costing
• Product Cost Management Interface
• Searching for parts, calculations, and data
• Introduction to master data
• Creating an initial calculation
• Modifying calculation settings
• Working with projects

Course Description

• Importing a BOM from an Excel file
• Performing a mass data change
• Calculating an injection molding part
• Calculating a stamping part
• Calculating a turning part

• Basic knowledge of cost engineering
• General manufacturing knowledge of the parts whose costs you want to calculate
• Familiarity with the basics of using software, such as drag and drop, right and left mouse button behavior, and context menus

• Student Guide
• Activity Material

Requires use of customer's hardware with software and license loaded. Siemens can provide TcPCM temporary licenses as needed.

Course Description

Teamcenter Product Costing 8.2

Product Costing Basics

Course Code	TR25180
User Level	Beginner to Intermediate
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Product Costing Basics** course provides instructions on working in the Teamcenter Product Cost Management interface and the basics of creating cost estimates.

In the course, you will learn about the key features of Teamcenter Product Cost Management and about the structure and components of a calculation. You calculate costs for a variety of products offering you an overview of different aspects of the estimation process. Specifically, you create estimates for several types of parts, import a bill of materials for an assembly, change parameters within the assembly, and learn to adapt the user interface to suit your needs.

Notes:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class. Siemens can provide TcPCM temporary licenses as needed.

WHO SHOULD ATTEND	COURSE TOPICS

The primary audience for this course includes users who make cost decisions for new products and evaluate costs associated with existing products, such as cost engineers and cost estimators.

• Introduction to Product Costing
• Product Cost Management Interface
• Searching for parts, calculations, and data
• Introduction to master data
• Creating a calculation
• Modifying a calculation

PREREQUISITES

• Configuring your environment
• Working with projects
• Importing a BOM from an Excel file

 • Basic knowledge of cost engineering
 • General manufacturing knowledge of the parts whose costs you want to calculate
 • Familiarity with the basics of computer interactions, such as drag and drop, mouse button behavior, and accessing context menus.

• Changing data throughout a bill of materials
• Calculating an injection molding part
• Calculating a stamping part
• Calculating a turning part

PROVIDED COURSE MATERIAL

Course Description

- Student Guide
- Activity Material

Teamcenter Tool Costing 8.2

Tool Costing Basics

Course Code	TR25181
User Level	Beginner to Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Tool Costing Basics provides instructions on working in the Teamcenter Product Cost Management interface and the basics of creating tool cost estimates.

In the course, you will learn about the key features of Teamcenter Product Cost Management and about the structure and components of a calculation. You calculate costs for a variety of tools offering you an overview of the different aspects of the estimation process. Specifically, you create estimates for several types of parts, at differing levels of complexity. You learn to create output that you can use as a basis for your price negotiations. Additionally, you learn to adapt the user interface to suit your needs.

WHO SHOULD ATTEND	COURSE TOPICS

The primary audience for this course includes users who make cost decisions for new tools and evaluate costs associated with existing tools, such as cost engineers and cost estimators.

- Introduction to Tool Costing
- Teamcenter Product Cost Management interface
- Quick estimates: Level one calculations
- Going deeper: Level two calculations
- Verified estimates: Level three calculations
- Negotiating with the supplier

PREREQUISITES

- Basic knowledge of cost engineering.
- General manufacturing knowledge of the tools whose costs you want to calculate.
- Familiarity with the basics of computer interactions, such as drag and drop, mouse button behavior, and accessing context menus.

Course Description

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware with software and license loaded. Siemens can provide TcPCM temporary licenses as needed.

Teamcenter 10.1
Installation (G2H)

Course Code	TR25350-GH
User Level	Intermediate
Language	English
Price	$5,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Teamcenter Installation** course defines the two-tier and the four-tier architectures and demonstrates how to install the components of these architectures. This includes database server, corporate server, two-tier rich client, the Business Modeler IDE, Web application server, Server Manager, thin client, distribution server, distribution server instance, four-tier rich client, the embedded viewer, NX Integration, FSC cache server, Dispatcher, Store and Forward, and creation of an additional site.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Teamcenter installers, system administrators, database administrators

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score

COURSE TOPICS

• Overview of two-tier and four-tier architectures
• Teamcenter database creation (Oracle, MSSQL)
• Common Licensing Server
• Corporate server installation
• File Management System (FMS) overview
• Two-tier rich client installation
• Teamcenter J2EE Web tier and server manager
• Teamcenter .NET Web tier and server manager
 • Installation of the four-tier rich client using the Over-the-Web Install and TEM
 • Installation of the Business Modeler IDE
 • Administering the in-production system

Course Description

• FCS performance cache server
• Dispatcher
• Store and Forward
• Teamcenter integrations for Microsoft Office
• Embedded visualization for the two-tier and four-tier rich clients
• NX Integration for the two-tier and four-tier rich clients
• Installing and accessing Teamcenter online help

prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

• System administration experience
• Understanding of network planning
• General understanding of relational databases
• General understanding of Teamcenter functionality

Other recommendations:

• Using Teamcenter (TR25150)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 11.2
Installation (G2H)

Course Code	TR25350-GH
User Level	Intermediate
Language	English
Price	$5,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Teamcenter Installation** course defines the two-tier and the four-tier architectures and demonstrates how to install the components of these architectures. This includes database server, corporate server, two-tier rich client, the Business Modeler IDE, Web application server, Server Manager, thin client, distribution server, distribution server instance, four-tier rich client, the embedded viewer, NX Integration, FCS cache server, Dispatcher, Store and Forward, and creation of an additional site.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Teamcenter installers, system administrators, database administrators

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

 • System administration experience
 • Understanding of network planning
 • General understanding of relational databases
 • General understanding of Teamcenter functionality

Other recommendations:

 • Using Teamcenter (TR25150)

COURSE TOPICS

• Overview of two-tier and four-tier architectures
• Teamcenter database creation (Oracle, MSSQL)
• Common Licensing Server
• Corporate server installation
• File Management System (FMS) overview
• Two-tier rich client installation
• Teamcenter J2EE Web tier and server manager
• Teamcenter .NET Web tier and server manager
 • Installation of the four-tier rich client using the Over-the-Web Install and TEM
 • Installation of the Business Modeler IDE
 • Administering the in-production system
 • FCS performance cache server
 • Dispatcher
 • Store and Forward
 • Teamcenter integrations for Microsoft Office
 • Embedded visualization for the two-tier and four-tier rich clients
 • NX Integration for the two-tier and four-tier rich clients
 • Installing and accessing Teamcenter online help

Course Description

• Student Guide
• Activity Material

Teamcenter 11.2

Installation

Course Code	TR25350-GH
User Level	Intermediate
Language	Spanish
Price	$5,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

 El curso **Instalación de Teamcenter** define las arquitecturas de dos y cuatro niveles y muestra cómo instalar los componentes de estas arquitecturas. Esto incluye el servidor de base de datos, el servidor corporativo, el cliente enriquecido de dos niveles, el IDE de Business Modeler, el servidor de aplicaciones web, el Administrador de servidores, el cliente ligero, el servidor de distribución, la instancia del servidor de distribución, el cliente enriquecido de cuatro niveles, el visor integrado, la Integración NX, el FSC servidor de caché, Dispatcher, Store and Forward y creación de un sitio adicional.

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter installers, system administrators, database administrators

• Overview of two-tier and four-tier architectures
• Teamcenter database creation (Oracle, MSSQL)
• Common Licensing Server
• Corporate server installation
• File Management System (FMS) overview
• Two-tier rich client installation
• Teamcenter J2EE Web tier and server manager
• Teamcenter .NET Web tier and server manager
• Installation of the four-tier rich client using the Over-the-Web Install and TEM
• Installation of the Business Modeler IDE
• Administering the in-production system
• FCS performance cache server
• Dispatcher
• Store and Forward
• Teamcenter integrations for Microsoft Office

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or

 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Course Description

• Embedded visualization for the two-tier and four-tier rich clients
• NX Integration for the two-tier and four-tier rich clients
• Installing and accessing Teamcenter online help

Other requirements:

• System administration experience
• Understanding of network planning
• General understanding of relational databases
• General understanding of Teamcenter functionality

Other recommendations:

• Using Teamcenter (TR25150)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 10.1

Data Model Administration

Course Code	TR25450
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Data Model Administration** course addresses configuration of the Teamcenter data model to meet your company's needs through the Business Modeler IDE. You will learn how to configure the Business Modeler IDE to extend the data model. Data model extensions covered in this course include creating business objects, properties, options, list of values, constants and rules.

• Business Modeler Administration (TRCT2455)

WHO SHOULD ATTEND	**COURSE TOPICS**

Teamcenter Data Model administrators

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

 • Familiarity with basic Windows operating system commands.

Other recommendations:

 • Using Teamcenter (TR25150)

PROVIDED COURSE MATERIAL

COURSE TOPICS:
• Business Modeler IDE process
• Business objects and properties
• Lists of values
• Options, constants, and rules
• Project templates
• Live updates

• Student Guide
• Activity Material

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Teamcenter 10.1

Data Model Administration

Course Code	TR25450
User Level	Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Administración de modelos de datos de Teamcenter </ strong> trata la configuración del modelo de datos de Teamcenter para satisfacer las necesidades de su empresa mediante el Business Modeler IDE. Aprenderá a configurar el Business Modeler IDE para ampliar el modelo de datos. Las extensiones de modelos de datos cubiertas en este curso incluyen la creación de objetos de negocio, propiedades, opciones, lista de valores, constantes y reglas. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<P> Administradores del Modelo de datos de Teamcenter </ p>

PREREQUISITES

<P>Required courses:</P>
Introduction to Teamcenter (TR25100)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria de la Introducción a Teamcenter Advisor en Learning Advantage (puntuación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para el asesor previo. (<Strong> Introducción a Teamcenter </ strong> curso a su propio ritmo) </ li>
</ Ul>
<P> Otros requisitos: </ p>
<Ul>
<Li> Familiaridad con los comandos básicos del sistema operativo Windows. </ Li>
</ Ul>

COURSE TOPICS

• Business Modeler IDE process
• Business objects and properties
• Lists of values
• Options, constants, and rules
• Project templates
• Live updates

<P> Otras recomendaciones: </ p>
<Ul>
<Li> <a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?pID=TR25150_____TC___10.1___
5000" target="_blank"> Uso de Teamcenter
(TR25150) < Li

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Cuando esta clase se entrega a través de la
tecnología de la nube en el LIVE! En el entorno de
formación en línea, no hay requisitos de instalación de
software local. </ P>

Teamcenter 11.2

Data Model Administration

Course Code	TR25450
User Level	Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Administración de modelos de datos de Teamcenter </ strong> trata la configuración del modelo de datos de Teamcenter para satisfacer las necesidades de su empresa mediante el Business Modeler IDE. Aprenderá a configurar el Business Modeler IDE para ampliar el modelo de datos. Las extensiones de modelos de datos cubiertas en este curso incluyen la creación de objetos de negocio, propiedades, opciones, lista de valores, constantes y reglas. </ P>

WHO SHOULD ATTEND

<P> Administradores del Modelo de datos de
Teamcenter </ p>

PREREQUISITES

<P>Required courses:</P>
Introduction to
Teamcenter (TR25100)
<P><B> O
</ b>
<Ul>
<Li> Finalización satisfactoria de la Introducción a
Teamcenter Advisor en Learning Advantage
(puntuación> 70%). Los cursos de Learning Advantage

COURSE TOPICS

• Business Modeler IDE process
• Business objects and properties
• Lists of values
• Options, constants, and rules
• Project templates
• Live updates

también pueden usarse para prepararse para el asesor previo. (<Strong> Introducción a Teamcenter </ strong> curso a su propio ritmo) </ li>

</ Ul>

<P> Otros requisitos: </ p>

<Ul>

<Li> Familiaridad con los comandos básicos del sistema operativo Windows. </ Li>

</ Ul>

<P> Otras recomendaciones: </ p>

<Ul>

<Li> Uso de Teamcenter (TR25150) < Li

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Cuando esta clase se entrega a través de la tecnología de la nube en el LIVE! En el entorno de formación en línea, no hay requisitos de instalación de software local. </ P>

Course Description

Teamcenter 10.1

Application Administration

Course Code	TR25455
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Application Administration** course covers Rich Client administration and associated processes. You will learn how to maintain and configure the Teamcenter Rich Client for end users.

• Managing Administration Data ([TRCT2450](#))

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Teamcenter Application Administrators

Teamcenter Data Model Administrators

Teamcenter System Administrators

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

 • Familiarity with basic Windows operating system commands.

Other recommendations:

• [Using Teamcenter](#)(TR25150)

COURSE TOPICS

• Application Administration Processes
• Managing the Teamcenter Organization
• Data Security Implementation and Best Practices
• Managing Projects to Control Access to Data
• Managing Preferences
• Custom Query Definitions
• Managing Custom Report Definitions
• PLM XML Import Export
• Workflow Process Development and Administration
• Rich Client Interface Configuration Using Stylesheets

Course Description

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Teamcenter 10.1

Application Administration

Course Code	TR25455
User Level	Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Administración de aplicaciones de Teamcenter </ strong> cubre la administración de Rich Client y los procesos asociados. Aprenderá a mantener y configurar el Cliente en equipo de Teamcenter para los usuarios finales. </ P>

WHO SHOULD ATTEND

<P> Administradores de aplicaciones de Teamcenter </ p>
<P> Administradores del modelo de datos de Teamcenter </ p>
<P> Administradores de sistema de Teamcenter </ p>

PREREQUISITES

<P>Required courses:</P>
Introduction to Teamcenter (TR25100)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria de la Introducción a Teamcenter Advisor en Learning Advantage (puntuación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para el asesor previo. (<Strong> Introducción a Teamcenter </ strong> curso a su propio ritmo) </ li>
</ Ul>
<P> Otros requisitos: </ p>
<Ul>

COURSE TOPICS

• Application Administration Processes
• Managing the Teamcenter Organization
• Data Security Implementation and Best Practices
• Managing Projects to Control Access to Data
• Managing Preferences
• Custom Query Definitions
• Managing Custom Report Definitions
• PLM XML Import Export
• Workflow Process Development and Administration
• Rich Client Interface Configuration Using Stylesheets

Course Description

<Li> Familiaridad con los comandos básicos del sistema operativo Windows. </ Li>
</ Ul>
<P> Otras recomendaciones: </ p>
<Ul>
<Li> Uso de Teamcenter (TR25150) < Li

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Cuando esta clase se entrega a través de la tecnología de la nube en el LIVE! En el entorno de formación en línea, no hay requisitos de instalación de software local. </ P>

Course Description

Teamcenter 11.2

Application Administration

Course Code	TR25455
User Level	Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Administración de aplicaciones de Teamcenter </ strong> cubre la administración de Rich Client y los procesos asociados. Aprenderá a mantener y configurar el Cliente en equipo de Teamcenter para los usuarios finales. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<P> Administradores de aplicaciones de Teamcenter </ p>
<P> Administradores del modelo de datos de Teamcenter </ p>
<P> Administradores de sistema de Teamcenter </ p>

PREREQUISITES

<P>Required courses:</P>
Introduction to Teamcenter (TR25100)
<P><B> O </ b>
<Ul>
<Li> Finalización satisfactoria de la Introducción a Teamcenter Advisor en Learning Advantage (puntuación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para el asesor previo. (<Strong> Introducción a Teamcenter </ strong> curso a su propio ritmo) </ li>
</ Ul>
<P> Otros requisitos: </ p>
<Ul>
<Li> Familiaridad con los comandos básicos del sistema operativo Windows. </ Li>
</ Ul>
<P> Otras recomendaciones: </ p>
<Ul>
<Li> Uso de Teamcenter (TR25150) < Li

PROVIDED COURSE MATERIAL

COURSE TOPICS

• Application Administration Processes
• Managing the Teamcenter Organization
• Data Security Implementation and Best Practices
• Managing Projects to Control Access to Data
• Managing Preferences
• Custom Query Definitions
• Managing Custom Report Definitions
• PLM XML Import Export
• Workflow Process Development and Administration
• Rich Client Interface Configuration Using Stylesheets

• Student Guide
• Activity Material

<P> Cuando esta clase se entrega a través de la tecnología de la nube en el LIVE! En el entorno de formación en línea, no hay requisitos de instalación de software local. </ P>

Teamcenter 10.1

Application and Data Model Administration

Course Code	TR25460
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Application and Data Model Administration** course addresses how to configure business data and set up secure organizational process models in a Teamcenter environment. Implementation style business scenarios are taught for both data model configuration with the Business Modeler IDE (for business objects, properties, options, list of values, conditions and rules) and best practices for Teamcenter applications including organization, processes, and data security.

• Managing Administration Data (TRCT2450)
• Business Modeler Administration (TRCT2455)

WHO SHOULD ATTEND	COURSE TOPICS

Application and Data Model administrators, System administrators

PREREQUISITES

Required courses:
 • Using Teamcenter (TR25150)

Or
 • Successful completion of the Using Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Using Teamcenter** self-paced

• Business Modeler IDE process
• Business objects and properties
• Lists of values
• Options, constants, and rules
• Project templates
• Live updates
• Users, groups, and roles
• Preferences
• Organizations
• Data security
• Process templates

Other requirements:

• Familiarity with basic Windows operating system commands.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Teamcenter 10.1

Application and Data Model Administration

Course Code	TR25460
User Level	Intermediate
Language	Spanish
Price	$2,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> El curso <strong> Administración de modelos de datos y aplicaciones de Teamcenter </ strong> trata sobre cómo configurar datos empresariales seguros y establecer modelos de procesos de organización seguros en un entorno de Teamcenter. Los escenarios empresariales del estilo de implementación se enseñan para la configuración del modelo de datos con Business Modeler IDE (para objetos comerciales, propiedades, opciones, lista de valores, condiciones y reglas) y las mejores prácticas para aplicaciones de Teamcenter, incluida organización, procesos y seguridad de datos. </ p>

WHO SHOULD ATTEND

<p> Administradores del modelo de aplicaciones y datos, administradores del sistema </ p>

PREREQUISITES

<P>Required courses:</P>
Using Teamcenter (TR25150)
<P><b> O </ b>

 Finalización exitosa del uso de Teamcenter Advisor en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden utilizar para

COURSE TOPICS

• Business Modeler IDE process
• Business objects and properties
• Lists of values
• Options, constants, and rules
• Project templates
• Live updates
• Users, groups, and roles
• Preferences
• Organizations
• Data security

• Process templates

prepararse para el asesor de requisitos previos.
(<strong> Uso de Teamcenter </ strong> curso a su
propio ritmo) </ li>
</ ul>
<p> Otros requisitos: </ p>

 Familiaridad con los comandos básicos del sistema
operativo de Windows. </ li>
</ ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<p> ¡Cuando esta clase se entrega a través de la
tecnología de la nube en vivo! Entorno de capacitación
en línea, no hay requisitos de instalación de software
local. </ P>

Course Description

Teamcenter 10.1

Customization

Course Code	TR25540
User Level	Advanced
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Customization**   course covers a wide swath of functionality that enables customers to customize their data model, behaviors, and look and feel of their Teamcenter installation

WHO SHOULD ATTEND	COURSE TOPICS

System architects, data model administrators,
customizers (programmers)

- Visual Studio environment setup
- Eclipse environment setup
- ITK framework
- BMIDE data model customization (used, not taught)
- Teamcenter Services
- Rich Client customization

PREREQUISITES

Required courses:
 • Application and Data Model Administration (TR25460)

Or
 • Successful completion of the Application and Data
Model Administration Advisor in Learning Advantage
(score >70%). Learning Advantage courses can also be
used to prepare for the prerequisite advisor. (**Application
Administration** and **Data Model Administration** self-
paced course)

Other requirements:

 • Application development (programming) experience
for compiling, executing programs
 • Working knowledge of either C, C++, Java, NET
 • Familiar with the Eclipse framework, especially Rich
Client Platform

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 11.2

Customization

Course Code	TR25540
User Level	Advanced
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Customization** course covers creating customizations within the Teamcenter server, clients, and standalone utilities to be called via command line; from which developers will be able to customize utilities to interact with the server, develop extensions to their data model to provide automation and/or additional behaviors against their objects, and create a responsive and tuned user interface for their users.

WHO SHOULD ATTEND

• System Administrators
• Developers
• Data Model Administrators

PREREQUISITES

Required courses:
 • Business Modeler Administration (TRCT2455)

Or

 • Successful completion of the Application and Data Model Administration Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Application Administration** and **Data Model Administration** self-paced course)

Other requirements:

 • Application development (programming) experience

COURSE TOPICS

 • Customization Overview: Basic concepts and architecture
 • Integrated Toolkit (ITK) Overview and API documentation review
 • Creating custom command line utilities with ITK
 • Microsoft Visual Studio environment setup with Teamcenter
 • ITK sample batch programs: common functions review (creating objects, searching, creating relationships, modifying objects, etc...
 • Services Orientated Architecture (SOA) Overview
 • Eclipse environment setup with Teamcenter
 • SOA sample batch programs: calling services to create objects, search, delete, and perform other common functionalities.
 • Customizing Data Model elements Overview
 • Business Modeler IDE (BMIDE) Environment Setup for Customization
 • Creating custom workflow handlers via ITK
 • Creating custom error messages to extend error definitions
 • Creating Operations and Property Operations to extend data model functionality
 • Creating custom Services and Service Operations to be

Course Description

invoked through a client user interface
 • Testing processes for custom Service validation and debugging
 • Creating custom plug-ins to invoke service calls in the rich client
 • Customizing Style sheets

 • Working knowledge of core programming techniques in either C, C++, Java, or .NET is recommended.
 • Familiarity with Microsoft Visual Studio and Eclipse frameworks is also recommended

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Course Description

Teamcenter Manufacturing 11.4

Manufacturing (Assembly) Process Planning (G2H)

Course Code	TR25630-GH
User Level	Intermediate
Language	English
Price	$4,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In the **Manufacturing Process Planning** course, students learn to define a manufacturing process plan for a product assembly using Teamcenter Manufacturing Process Planner. This includes the definition and management of product, process and plant structures and their relationships to each other, and to modify multiple manufacturing related structure data to produce work instructions.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Manufacturing process engineers and assembly process planners

PREREQUISITES

Required courses:
 • Using Teamcenter (TR25150)

Or
 • Successful completion of the Using Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Introduction to manufacturing concepts
Create and use collaboration context objects
Manage engineering data (EBOM)
Manufacturing part list creation (MBOM)
Authoring features
Create a manufacturing part list (MBOM)
Validate EBOM to MBOM
Use product BOPs
Setup an initial plant BOP
Sequence and optimize the plant BOP
Perform operation time analysis
<il>Balance operator workloads
Analyze variants of operations
Manage classic and dynamic IPAs
Validate MBOM to plant BOP
Manage studies
Perform alternative planning
Manage plant resources (BOE)
Use classified objects
Classify standard objects
Adding product views to operations
Manage reference documents
Process plan approval and release
Manage manufacturing changes
View work instructions in EWI

Use a Custom Process View
Repair broken links

Teamcenter Manufacturing 10.1

Assembly Process Planning (G2H)

Course Code	TR25630
User Level	Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <b> (G2H) garantizado para mantener </ b>. Seleccione Aquí para obtener más información acerca de los cursos G2H. </ P>

<p> El curso <strong> Planificación del proceso de ensamblaje </ strong> aborda una amplia gama de aplicaciones de fabricación utilizadas en planificación de procesos y gestión de datos para reducir el tiempo de producción, reducir los gastos

WHO SHOULD ATTEND	COURSE TOPICS

<p> Ingenieros de procesos de fabricación y planificadores de procesos de ensamblaje </ p>

PREREQUISITES

<P>Required courses:</P>
Using Teamcenter (TR25150)
&#10;&#13;<P><b> O </ b>

 Finalización exitosa del uso de Teamcenter Advisor en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden utilizar para prepararse para la evaluación de requisitos previos. </ Li>
</ ul></P>

Students learn to define a process plan for assembly manufacturing operations. This includes the definition and management of product, process and plant structures and their relationships to each other, and to modify multiple manufacturing related structure data.

- Introduction to Manufacturing Concepts
- Implementing Teamcenter structures for manufacturing
- Engineering data management (eBOM)
- Manufacturing part list creation (MBOM)
- Manufacturing data management EBOM to MBOM
- Manufacturing Process Plan Authoring
- Plant Resource Management
- Using Classification

• Adding product views to operations
• Work Instructions
• Process plan approval and release

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Teamcenter 10.1.1

Teamcenter 9.0

Managing Requirements using Teamcenter (G2H)

Course Code	TR25770-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Managing Requirements using Teamcenter** course describes the concepts associated with requirements management. The course includes instruction on creating specifications, requirements, derived requirements, and associating requirements and system components using trace links.

WHO SHOULD ATTEND

Product Managers, Business Analysts, Solution Architects, and Design Engineers

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (tr25100)

 • or Using Teamcenter Fundamental self-paced courses on Learning Advantage

COURSE TOPICS

 • Use various methods to create requirements
 • Import and export requirements using Microsoft Word and Excel
 • View and modify requirement properties
 • Create custom notes
 • Create relationships between requirements and structures using trace links
 • Create trace links on occurrences in context of an assembly structure
 • Manage requirement and architecture configurations using revision rules

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• Integrate requirements with schedules and workflows

• Student Guide
• Activity Material

Teamcenter 10.1

Integration for NX 10.0 Users

Course Code	TR25910-10
User Level	Beginner
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Integration for NX Users** course addresses using the integration of NX CAD software and Teamcenter product data management to create and manage NX parts and other engineering data. Hands-on activities demonstrate various methods of creating, revising, finding, viewing and managing product data. This course is NX CAD Data Management training. You work with simplified geometric items in order to focus on the aspect of managing the development and life cycle of those items. Effective use of the NX Teamcenter Navigator resource bar and other Teamcenter interfaces is emphasized.

WHO SHOULD ATTEND

Workflow contributors, Authors and Power users

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used

COURSE TOPICS

• Start Teamcenter Integration for NX
• NX data creation, storage, access, edit, and sharing
• Teamcenter capabilities in NX
• NX data structure and management
• Sharing data and working in a shared assignment

Course Description

Teamcenter self-paced course)

Other requirements:

 • Familiarity with basic Windows operating system
commands.
 • Basic experience with NX part, assembly, and
drawing creation.

Other recommendations:

• [Using Teamcenter](#) (TR25150)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 10.1

Integration for NX 10.0 Users

Course Code	TR25910-10
User Level	Beginner
Language	Spanish
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

Las direcciones de curso <strong> Integración de Teamcenter para usuarios de NX </ strong> que utilizan la integración del software NX CAD y la administración de datos de productos de Teamcenter para crear y administrar partes de NX y otros datos de ingeniería. Las actividades prácticas demuestran varios métodos para crear, revisar, encontrar, ver y administrar datos de productos. Este curso es un entrenamiento de gestión de datos NX CAD. Trabaja con elementos geométricos simplificados para centrarse en el aspecto de administrar el desarrollo y el ciclo de vida de esos elementos. Se enfatiza el uso eficaz de la barra de recursos de NX Teamcenter Navigator y otras interfaces de Teamcenter. </ p>

WHO SHOULD ATTEND	COURSE TOPICS

<p> Colaboradores de flujo de trabajo, autores y usuarios avanzados </ p>

- Start Teamcenter Integration for NX
- NX data creation, storage, access, edit, and sharing
- Teamcenter capabilities in NX
- NX data structure and management
- Sharing data and working in a shared assignment

PREREQUISITES

<P>Required courses:</P>
Introduction to Teamcenter (TR25100)
<P><b> O </ b>

 Finalización exitosa de la Introducción a Teamcenter Advisor en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden usar para prepararse para el asesor de requisitos previos. (<strong> Introducción a Teamcenter </ strong> curso autodidáctico) </ li>
</ ul>
<p> Otros requisitos: </ p>

 Familiaridad con los comandos básicos del sistema operativo Windows. </ li>
 Experiencia básica con creación de partes, ensamblaje y dibujo de NX. </ li>
</ ul>
<p> Otras recomendaciones: </ p>

  Uso de Teamcenter (TR25150) < / li>

Course Description

• Student Guide
• Activity Material

Teamcenter 11.2

Integration for NX 11.0 Users

Course Code	TR25910-11
User Level	Beginner
Language	Portuguese
Price	R$ 472,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Teamcenter Integration for NX** course addresses using the integration of NX CAD software and Teamcenter product data management to create and manage NX parts and other engineering data. Hands-on activities demonstrate various methods of creating, revising, finding, viewing and managing product data. This course is NX CAD Data Management training. You work with simplified geometric items in order to focus on the aspect of managing the development and life cycle of those items. Effective use of Active Workspace and other Teamcenter interfaces is emphasized.

WHO SHOULD ATTEND	COURSE TOPICS

Workflow contributors, Authors and Power users

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

• NX data structure and management
• Teamcenter capabilities in NX
• Active Workspace overview and functionality
• NX data creation, storage, access, and revising
• Exporting and importing data
• Sharing data and working in a shared environment
• Creating part families
• Working with JT data

commands.
• Basic experience with NX part, assembly, and
drawing creation.

Other recommendations:

• [Using Teamcenter](#) (TR25150)

<div align="center">

PROVIDED COURSE MATERIAL

</div>

• Student Guide
• Activity Material

Teamcenter 11.2

Integration for NX 11.0 Users

Course Code	TR25910-11
User Level	Beginner
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Integration for NX** course addresses using the integration of NX CAD software and Teamcenter product data management to create and manage NX parts and other engineering data. Hands-on activities demonstrate various methods of creating, revising, finding, viewing and managing product data. This course is NX CAD Data Management training. You work with simplified geometric items in order to focus on the aspect of managing the development and life cycle of those items. Effective use of Active Workspace and other Teamcenter interfaces is emphasized.

<div align="center">

WHO SHOULD ATTEND

</div>

Workflow contributors, Authors and Power users

<div align="center">

PREREQUISITES

</div>

Required courses:
• Introduction to Teamcenter (TR25100)

<div align="center">

COURSE TOPICS

</div>

• NX data structure and management
• Teamcenter capabilities in NX
• Active Workspace overview and functionality
• NX data creation, storage, access, and revising
• Exporting and importing data
• Sharing data and working in a shared environment
• Creating part families
• Working with JT data

Course Description

 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

 • Familiarity with basic Windows operating system commands.
 • Basic experience with NX part, assembly, and drawing creation.

Other recommendations:

• [Using Teamcenter](#) (TR25150)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 11.2
Integration for NX 11.0 Users

Course Code	TR25910-11
User Level	Beginner
Language	Spanish
Price	$300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

El curso **Integración de Teamcenter para NX** aborda el uso de la integración del software NX CAD y la gestión de datos del producto Teamcenter para crear y administrar piezas de NX y otros datos de ingeniería. Las actividades prácticas demuestran varios métodos de creación, revisión, búsqueda, visualización y gestión de datos de productos. Este curso es NX CAD Data Management Training. Trabaja con elementos geométricos simplificados para centrarse en el aspecto de administrar el desarrollo y el ciclo de vida de esos elementos. Se enfatiza el uso efectivo de Active Workspace y otras interfaces de Teamcenter.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Workflow contributors, Authors and Power users

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

 • Familiarity with basic Windows operating system commands.
 • Basic experience with NX part, assembly, and drawing creation.

Other recommendations:

 • [Using Teamcenter](TR25150)

COURSE TOPICS

• NX data structure and management
• Teamcenter capabilities in NX
• Active Workspace overview and functionality
• NX data creation, storage, access, and revising
• Exporting and importing data
• Sharing data and working in a shared environment
• Creating part families
• Working with JT data

Course Description

Teamcenter 10.1

Integration for NX 9.0 Users

Course Code	TR25910
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Integration for NX Users** course addresses using the integration of NX CAD software and Teamcenter product data management to create and manage NX parts and other engineering data. Hands-on activities demonstrate various methods of creating, revising, finding, viewing and managing product data. This course is NX CAD Data Management training. You work with simplified geometric items in order to focus on the aspect of managing the development and life cycle of those items. Effective use of the NX Teamcenter Navigator resource bar and other Teamcenter interfaces is emphasized.

WHO SHOULD ATTEND	COURSE TOPICS

Workflow contributors, Authors and Power users

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

• Start Teamcenter Integration for NX
• NX data creation, storage, access, edit, and sharing
• Teamcenter capabilities in NX
• NX data structure and management
• Sharing data and working in a shared assignment

Course Description

commands.
 • Basic experience with NX part, assembly, and drawing creation.

Other recommendations:

• Using Teamcenter (TR25150)

• Student Guide
• Activity Material

Teamcenter 11.4

Integration for NX 12.0 Users

Course Code	TR25910
User Level	Beginner
Language	Portuguese
Price	R$ 472,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Teamcenter Integration for NX** course addresses using the integration of NX CAD software and Teamcenter product data management to create and manage NX parts and other engineering data. Hands-on activities demonstrate various methods of creating, revising, finding, viewing and managing product data. This course is NX CAD Data Management training. You work with simplified geometric items in order to focus on the aspect of managing the development and life cycle of those items. Effective use of Active Workspace and other Teamcenter interfaces is emphasized.

WHO SHOULD ATTEND	**COURSE TOPICS**

Workflow contributors, Authors and Power users

PREREQUISITES

Required courses:
• Using Teamcenter Basics (TRCT2440)

• NX data structure and management
• Teamcenter capabilities in NX
• Active Workspace overview and functionality
• NX data creation, storage, access, and revising
• Exporting and importing data
• Sharing data and working in a shared environment
• Creating part families
• Working with JT data

Course Description

• Introduction to Teamcenter (TR25100)

Or

• Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

• Familiarity with basic Windows operating system commands.
• Basic experience with NX part, assembly, and drawing creation.

Other recommendations:

• Using Teamcenter (TR25150)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 11.4

Integration for NX 12.0 Users

Course Code	TR25910
User Level	Beginner
Language	English
Price	$500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Teamcenter Integration for NX** course addresses using the integration of NX CAD software and Teamcenter product data management to create and manage NX parts and other engineering data. Hands-on activities demonstrate various methods of creating, revising, finding, viewing and managing product data. This course is NX CAD Data Management training. You work with simplified geometric items in order to focus on the aspect of managing the development and life cycle of those items. Effective use of Active Workspace and other Teamcenter interfaces is emphasized.

WHO SHOULD ATTEND	COURSE TOPICS

Workflow contributors, Authors and Power users

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)

Or
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

 • Familiarity with basic Windows operating system commands.
 • Basic experience with NX part, assembly, and drawing creation.

Other recommendations:

 • Using Teamcenter (TR25150)

COURSE TOPICS
• NX data structure and management
• Teamcenter capabilities in NX
• Active Workspace overview and functionality
• NX data creation, storage, access, and revising
• Exporting and importing data
• Sharing data and working in a shared environment
• Creating part families
• Working with JT data

| **PROVIDED COURSE MATERIAL** |

• Student Guide
• Activity Material

Teamcenter 10.1

Integration for Catia V5 Users

Course Code	TR25940
User Level	Beginner
Language	Spanish
Price	call for more info (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> Las direcciones del curso <strong> Integración de Teamcenter para usuarios de Catia V5 </ strong> utilizan la integración de CATIA V5 y Teamcenter. El curso enfatiza cómo se administran varios tipos de datos en Teamcenter. Las actividades prácticas demuestran los conceptos y procedimientos que se enseñan en esta clase. </ P>
<p> Notas:
 Este no es un curso de reemplazo para la capacitación en software de CATIA </ li>
 Este curso solo se puede impartir en el sitio en las instalaciones de un cliente y requerirá el software CATIA. </ li> </ ul>
</ p>

| **WHO SHOULD ATTEND** | **COURSE TOPICS** |

<p> Autores </ p>

| **PREREQUISITES** |

<P>Required courses:</P>
Introduction to Teamcenter (TR25100)
<P><b> O </ b>

 Finalización exitosa de la Introducción a Teamcenter Advisor en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden usar para prepararse para el asesor de requisitos previos. (<strong> Introducción a Teamcenter </ strong> curso autodidáctico) </ li>
</ ul>
<p> Otros requisitos: </ p>

• How CATIA and Teamcenter communicate in an integrated environment
• Managing CATIA parts in Teamcenter
• Understanding Teamcenter product structure using Structure Manager
• Managing CATIA assemblies in Teamcenter
• Managing CATIA drawings in Teamcenter
• Managing CATIA multi-model links in Teamcenter

Course Description

 Familiaridad con los comandos básicos del sistema
operativo Windows. </ li>
 Experiencia básica con el software CATIA V5. </ li>
</ ul>
<p> Otras recomendaciones: </ p>

 <a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?pID=TR25150_____TC___10.1___
5000" target="_blank"> Uso de Teamcenter
(TR25150) < / li>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 10.1

Teamcenter As-Built Manager (G2H)

Course Code	TR28150-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Teamcenter As-Built Manager** course covers the creation and management of an as-built physical structure. The course will includes the fundamentals of Teamcenter MRO to ensure that customers can successfully use and administer the system.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Engineers that support administrative and end user functions.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction and Overview
• Installing As-Built Manager
• Configuring As-Built Manager
• Creating Neutral Structure
• Creating Physical Structures
• Setting up As-Built Physical Structures
• Visualizing As-Built Structures
• Comparing As-Built Structures
• Importing and Exporting as-built Structures

Course Description

Teamcenter 10.1

Teamcenter Service Manager (G2H)

Course Code	TR28200-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Teamcenter Service Manager** course covers: the creation and management of an as-maintained physical structure, interoperability between as-maintained and as-built structures, creation and management of service events related to the as-maintained structure. The course will includes the fundamentals of Teamcenter MRO to ensure that customers can successfully use and administer the system.

WHO SHOULD ATTEND	COURSE TOPICS

Engineers that support administrative and end user functions.

• Introduction and Overview
• Installing Service Manager
• Configuring Service Manager

PREREQUISITES

• Creating Neutral Structure
• Creating As-Maintained Physical Structures
• Setting up As-Maintained Physical Structures
• Viewing As-Maintained Physical Structures
• Managing Service Data
• Managing As-Maintained Physical Structures
• Visualizing As-Maintained Structures
• Comparing As-Maintained Structures
• Importing As-Maintained Structures and Multi-Site Collaboration for Service Manager

Required courses:
 • Introduction to Teamcenter (TR25100)

Or

 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

Other requirements:

 • Familiarity with basic Windows operating system commands.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Active Workspace 3.4

Active Workspace Declarative Customization

For Developers

Course Code	TR300ES01L
User Level	Intermediate to Advanced
Language	English
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	4 hours each day for 3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Active Workspace Declarative Customization** course is a lesson extracted from the *Active Workspace Customization & Configuration* course, which will help Active Workspace developers understand the Declarative framework in Active Workspace, as well as learn how to build custom interface components using the Declarative framework. Students will setup a development environment and create custom components to deploy and test with the client.

The course walks students through a review of the installation directory for the Active Workspace Client installation directory and the required scripts / files needed to perform customization. Then the course progresses into setting up a development environment to allow for easy development cycles and testing. Finally, the course dives into the Declarative Framework and examples of developing in the framework utilizing the development environment.

This class is compatible with the following version(s) of Active Workspace: 3.3, 3.4

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter Customizers

• Course Overview & Introduction

PREREQUISITES

Required courses:
 • Using Active Workspace (TRCT2360)

• Environment Review

• Setup a Development Environment

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

• Create a Basic Command

• Create a Global Command

ATTENDANCE REQUIREMENTS

Course Description

- CTX Service Review and Utilization

- Create a Global Command to Use Data from CTX

- Additional Demos: Visual Indicators, CSS overrides, Locations

For this **LIVE!** class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for access to training materials.

Course Description

Active Workspace 3.4

Active Workspace Style Sheets

For Application Administrators, and Developers

Course Code	TR300ES02L
User Level	Intermediate to Advanced
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Active Workspace Style Sheets** course is a lesson extracted from the *Active Workspace Customization & Configuration* course, which will help Active Workspace administrators and developers learn how to customize and configure Style Sheets to control the display of content to users in the Active Workspace interface.

Students will learn how to register style sheets for Active Workspace and utilize the embedded location to modify or locate existing style sheets. They will also learn about the available tags and work with HTML panel elements and modular style sheets.

This course is compatible with Active Workspace versions 3.3 and 3.4

WHO SHOULD ATTEND	COURSE TOPICS

• Teamcenter Application Administrators
• Customizers

• Course Overview & Introduction

PREREQUISITES

• Create & Register a Style Sheet

<P>Required courses:</P>
Using Active Workspace (TRCT2360)
Rich Client Style Sheets (TR200ES11L)
<P>Or

• Edit a Style Sheet with XRT Editor

Students can replace the <I>TR200ES11L - Rich Client Style Sheets</I>course requirement with a successful completion of the <I>TRCT2450 - Managing Administration Data</I> course or the <I>TR200ES01L - Customizing UI Stylesheets</I> course. </P>

• Add HTML Panels

• Add a Modular Style Sheet

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For this **LIVE!** class, customers will use our cloud

training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for access to training materials.

Active Workspace 3.4

Active Workspace Configuring Gateway Tiles

For Application Administrators

Course Code	TR300ES03L
User Level	Intermediate
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Active Workspace Customization and Configuration** course is a lesson extracted from the *Active Workspace Customization & Configuration* course, which will help Active Workspace administrators learning how to configure the Gateway page in the Active Workspace client.

Students will learn how to hide, protect, and modify attributes to recover hidden tiles; as well as, how to create new Tiles to open external web pages, link to internal documents, and route the application to various locations. An emphasis will also be on migrating tiles to other environments.

This course is compatible with the following versions of Active Workspace: 3.0, 3.1, 3.2, 3.3, 3.4

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter Application Administrators

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)
 • Using Active Workspace (TRCT2360)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

• Course Overview & Introduction

• Tile Overview

• Tile Types

• Hiding / Protecting Tiles

• Adding Tiles to Collections

• Creating Tiles, Tile Templates, and Collections

Course Description

- Student Guide
- Activity Material

For this **LIVE!** class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for access to training materials.

Active Workspace 3.4

Active Workspace Indexing Data for Searching
For Data Model Administrators & Developers

Course Code	TR300ES04L
User Level	Intermediate to Advanced
Language	English
Price	$450.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	3 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>The Active Workspace Indexing Data for Searching course is a lesson extracted from the <I>Active Workspace Customization & Configuration</I> and <I>Active Workspace Installation and System Administration courses, which will address the configuration of the Indexing Utility / Engine to Index data to display for searching. This course also addresses the configuration of preferences, and Business Modeler IDE constants to configure Filters, PreFilters and other configurable options.</p>

<p>Students will learn how execute indexes of data using the TcFTSIndexer utility, as well as how to make changes to a data model element and ensure that element is indexed correctly for searching. Various preferences and options will also be discussed to optimise and provide additional Filtering / Prefiltering options and other search related mechanisms.</p>
<p>This course is compatible with the following versions of Active Workspace: 3.3, 3.4</p>

WHO SHOULD ATTEND	COURSE TOPICS

Teamcenter Application Administrators, and Customizers

- Course Overview & Introduction

PREREQUISITES

- Indexer Introduction

Required courses:
- Business Modeler Administration (TRCT2455)

- Indexing Utilities

- Data Indexing / Syncing

Or
- Successful completion of the Application and Data Model Administration Advisor in Learning Advantage

- Data Model Changes and Indexing

Course Description

be used to prepare for the prerequisite assessment.

• Data Model Changes and Indexing continued...

• Configuration Tasks

• Troubleshooting

• Student Guide
• Activity Material

For this LIVE! class, customers will use our cloud training environment, so no local software is needed.

A Learning Advantage account will be provided to each student for access to training materials.

Course Description

Process Designer 13.1

Process Designer Basics

Course Code	TR41127
User Level	Beginner
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this course, you learn how to do basic processing planning using Process Designer.

WHO SHOULD ATTEND

Individuals who wish to become proficient in using Process Designer. No knowledge of Process Designer is assumed.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to the Process Designer interface
• Working with nodes and creating links
• Productivity Tools
• Introduction to the Process Designer environment
• Searching, querying, and filtering
• Placement commands
• Creating and saving engineering data
• Additional topics
• Putting it all together

Course Description

Process Designer 14.1

Process Designer Basics

Course Code	TR41127
User Level	Beginner
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In this course, you learn how to do basic processing planning using Process Designer.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become proficient in using Process Designer. No knowledge of Process Designer is assumed.

- Introduction to the Process Designer interface
- Working with nodes and creating links
- Productivity Tools
- Introduction to the Process Designer environment
- Searching, querying, and filtering
- Placement commands
- Creating and saving engineering data
- Additional topics
- Putting it all together

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Process Designer 13.1

Process Designer for Body-In-White Processing (G2H)

Course Code	TR41228-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In this course, you build on what you learned in Process Designer Basics course. You also complete a project that includes designing an underbody line, operation allocation, part allocation, weld spot allocation, datum allocation and more.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become Process Designer users. This introductory course enables novice users to become familiar with Process Designer and its body-in-white processes

• Basic Body-In-White tools
• Welds and datums
• Putting it all together

PREREQUISITES

Required courses:
 • Process Designer Basics (TR41127)

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Process Designer 14.1

Process Designer for Body-In-White Processing (G2H)

Course Code	TR41228-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In this course, you build on what you learned in Process Designer Basics course. You also complete a project that includes designing an underbody line, operation allocation, part allocation, weld spot allocation, datum allocation and more.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become Process Designer users. This introductory course enables novice users to become familiar with Process Designer and its body-in-white processes

• Basic Body-In-White tools
• Welds and datums
• Putting it all together

PREREQUISITES

Required courses:
 • Process Designer Basics (TR41127)

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Process Designer 13.1

Process Designer for General Assembly (G2H)

Course Code	TR41229-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In this course, you build on what you learned in the Process Designer Basics course, by completing a project that includes designing an assembly line's station layout, assembly flow, operation allocation, part allocation, and more.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who will be using the Automotive Assembly workflow of Process Designer

COURSE TOPICS

• Assembly workflow
• Using variants
• Manual and automatic line balancing
• Time data cards
• Schematic view
• Quotation

PREREQUISITES

Required courses:
• Process Designer Basics (TR41127)

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Process Designer 14.1

Process Designer for General Assembly (G2H)

Course Code	TR41229-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In this course, you build on what you learned in the Process Designer Basics course, by completing a project that includes designing an assembly line's station layout, assembly flow, operation allocation, part allocation, and more.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who will be using the Automotive Assembly workflow of Process Designer

• Assembly workflow
• Using variants
• Manual and automatic line balancing
• Time data cards
• Schematic view
• Quotation

PREREQUISITES

Required courses:
 • Process Designer Basics (TR41127)

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Process Simulate on eMS 12.1

Process Simulate on eMS Part Flow Simulation

Course Code	TR42101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of part flow simulations using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

Course Description

Process Simulate on eMS 13.1

Process Simulate on eMS Part Flow Simulation

Course Code	TR42101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of part flow simulations using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

Course Description

Process Simulate on eMS 14.1

Process Simulate on eMS Part Flow Simulation

Course Code	TR42101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of part flow simulations using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

Course Description

Process Simulate on eMS 12.1

Process Simulate on eMS Human Simulation

Course Code	TR42106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on creating human simulations, checking ergonomics, and performing reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Grasping and releasing objects
• Working on moving lines
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Task Simulation Builder and other tools
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
• Introduction to custom reports
• Assigning a duration to human operations using several methods

Course Description

Process Simulate on eMS 13.1

Process Simulate on eMS Human Simulation

Course Code	TR42106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on creating human simulations, checking ergonomics, and performing reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Grasping and releasing objects
• Working on moving lines
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Task Simulation Builder and other tools
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
• Introduction to custom reports
• Assigning a duration to human operations using several methods

Course Description

Process Simulate on eMS 14.1

Process Simulate on eMS Human Simulation

Course Code	TR42106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on creating human simulations, checking ergonomics, and performing reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Grasping and releasing objects
• Working on moving lines
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Task Simulation Builder and other tools
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
• Introduction to custom reports
• Assigning a duration to human operations using several methods

Course Description

Process Simulate on eMS 12.1

Process Simulate on eMS Basic Robotic Simulation

Course Code	TR42115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.
• A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
  • Pneumatic and servo gun definition and usage
  • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

Process Simulate on eMS 13.1

Process Simulate on eMS Basic Robotic Simulation

Course Code	TR42115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.
• A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
  • Pneumatic and servo gun definition and usage
  • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

Process Simulate on eMS 14.1

Process Simulate on eMS Basic Robotic Simulation

Course Code	TR42115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on eMS Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.
• A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
  • Pneumatic and servo gun definition and usage
  • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

Process Simulate on eMS 12.1

Process Simulate on eMS Intermediate Robotics (CEE)

Course Code	TR42215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate on eMS Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • Process Simulate on eMS Basic Robotic Simulation (TR42115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate on eMS 13.1

Process Simulate on eMS Intermediate Robotics (CEE)

Course Code	TR42215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate on eMS Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • Process Simulate on eMS Basic Robotic Simulation (TR42115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate on eMS 14.1

Process Simulate on eMS Intermediate Robotics (CEE)

Course Code	TR42215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate on eMS Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • Process Simulate on eMS Basic Robotic Simulation (TR42115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate on eMS 12.1

Process Simulate on eMS Advanced Robotics (OLP)

Course Code	TR42315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (OLP) using MOP, realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (OLP) using realistic robot simulation (RRS/RCS) or MOP, and use ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • Process Simulate on eMS Basic Robotic Simulation (TR42115)
 • Process Simulate on eMS Intermediate Robotics (CEE) (TR42215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Epson, Duerr, Fanuc, Kawasaki, Kuka, Nachi, NC machining, Reis, Staubli, (ABB) Trallfa, Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
• Introduction to MOP, RCS, RRS, and ESRC
• Setting up the RCS, RRS, and ESRC
• Creating Robot Programs
• Inverse Kinematics Solution Selections (Robot Configurations)
• Robot Controller Selection and Setup
• Testing the Teach Pendant and Fixing Setup Problems
• RCS Management
• Robot Controller Specific Signals, Commands, Frames, Setup, and Motion Attributes
• Templates, Uploading, and Downloading
• ESRC OLP Commands
• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• Other Related OLP Topics

Course Description

Process Simulate on eMS 13.1

Process Simulate on eMS Advanced Robotics (OLP)

Course Code	TR42315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (OLP) using MOP, realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (OLP) using realistic robot simulation (RRS/RCS) or MOP, and use ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • Process Simulate on eMS Basic Robotic Simulation (TR42115)
 • Process Simulate on eMS Intermediate Robotics (CEE) (TR42215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Epson, Denso, Duerr, Fanuc, Kawasaki, Kuka, Nachi, NC machining, NC Riveting, Panasonic, Reis, Staubli, (ABB) Trallfa, Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
• Introduction to MOP, RCS, RRS, and ESRC
• Setting up the RCS, RRS, and ESRC
• Creating Robot Programs
• Inverse Kinematics Solution Selections (Robot Configurations)
• Robot Controller Selection and Setup
• Testing the Teach Pendant and Fixing Setup Problems
• RCS Management
• Robot Controller Specific Signals, Commands, Frames, Setup, and Motion Attributes
• Templates, Uploading, and Downloading
• ESRC OLP Commands
• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• Other Related OLP Topics

Course Description

Process Simulate on eMS 14.1

Process Simulate on eMS Advanced Robotics (OLP)

Course Code	TR42315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

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WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (OLP) using realistic robot simulation (RRS/RCS) or MOP, and use ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • Process Simulate on eMS Basic Robotic Simulation (TR42115)
 • Process Simulate on eMS Intermediate Robotics (CEE) (TR42215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Epson, Denso, Duerr, Fanuc, Kawasaki, Kuka, Nachi, NC machining, NC Riveting, Panasonic, Reis, Staubli, (ABB) Trallfa, Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
• Introduction to MOP, RCS, RRS, and ESRC
• Setting up the RCS, RRS, and ESRC
• Creating Robot Programs
• Inverse Kinematics Solution Selections (Robot Configurations)
• Robot Controller Selection and Setup
• Testing the Teach Pendant and Fixing Setup Problems
• RCS Management
• Robot Controller Specific Signals, Commands, Frames, Setup, and Motion Attributes
• Templates, Uploading, and Downloading
• ESRC OLP Commands
• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• Other Related OLP Topics

Course Description

Process Simulate on Teamcenter Part Flow Simulation

Teamcenter Version 10.1.5

Course Code	TR43101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on creation of part flow simulations using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

Course Description

The **Process Simulate on Teamcenter Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on creation of part flow simulations using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

Course Description

Process Simulate on Teamcenter 14.1

Process Simulate on Teamcenter Part Flow Simulation

Teamcenter Version 11.4

Course Code	TR43101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on creation of part flow simulations using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

Course Description

Process Simulate on Teamcenter 12.1

Process Simulate on Teamcenter Human Simulation

Teamcenter Version 10.1.5

Course Code	TR43106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of human simulations, checking ergonomics, and perform reach studies using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Joint limitation library
• Grasping and releasing objects
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
 • Introduction to custom reports
 • Assigning a duration to human operations using several methods

Course Description

Process Simulate on Teamcenter 13.1

Process Simulate on Teamcenter Human Simulation

Teamcenter Version 10.1.5

Course Code	TR43106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of human simulations, checking ergonomics, and perform reach studies using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Joint limitation library
• Grasping and releasing objects
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
• Introduction to custom reports
• Assigning a duration to human operations using several methods

Course Description

Process Simulate on Teamcenter 14.1

Process Simulate on Teamcenter Human Simulation

Teamcenter Version 11.4

Course Code	TR43106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of human simulations, checking ergonomics, and perform reach studies using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Joint limitation library
• Grasping and releasing objects
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
 • Introduction to custom reports
 • Assigning a duration to human operations using several methods

Course Description

Process Simulate on Teamcenter 12.1

Process Simulate on Teamcenter Basic Robotic Simulation

Teamcenter Version 10.1.5

Course Code	TR43115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND	**COURSE TOPICS**

Individuals who want to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.
 • A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
 • Pneumatic and servo gun definition and usage
 • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
 • Arc welding and grinding path development
• **Defining and simulating robotic material handling**
 • Gripper definition and usage
 • Pick and place path development
• **And More**
 • Multi-robot simulation (i.e. interference zones)
 • Swept volumes, 7th axis, etc.

Course Description

Process Simulate on Teamcenter 13.1

Process Simulate on Teamcenter Basic Robotic Simulation

Teamcenter Version 10.1.5

Course Code	TR43115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who want to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.
 • A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
 • Pneumatic and servo gun definition and usage
 • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
 • Arc welding and grinding path development
• **Defining and simulating robotic material handling**
 • Gripper definition and usage
 • Pick and place path development
• **And More**
 • Multi-robot simulation (i.e. interference zones)
 • Swept volumes, 7th axis, etc.

Course Description

Process Simulate on Teamcenter 14.1

Process Simulate on Teamcenter Basic Robotic Simulation

Teamcenter Version 11.4

Course Code	TR43115
User Level	Beginner
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Process Simulate on Teamcenter Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who want to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.
 • A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
 • Pneumatic and servo gun definition and usage
 • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
 • Arc welding and grinding path development
• **Defining and simulating robotic material handling**
 • Gripper definition and usage
 • Pick and place path development
• **And More**
 • Multi-robot simulation (i.e. interference zones)
 • Swept volumes, 7th axis, etc.

Course Description

Process Simulate on Teamcenter 14.1

Process Simulate on Teamcenter Basic Robotic Simulation

Teamcenter Version 11.4

Course Code	TR43115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate on Teamcenter Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who want to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate on Teamcenter.

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

 • Suggested, but not required: **Assembly Process Planning** (TR25630) or **Using Teamcenter** (TR25150)
 • Previous experience with a 3D system is recommended.
 • A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
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 • Arc welding and grinding path development
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 • Gripper definition and usage
 • Pick and place path development
• **And More**
 • Multi-robot simulation (i.e. interference zones)
 • Swept volumes, 7th axis, etc.

Course Description

Process Simulate on Teamcenter 12.1

Process Simulate on Teamcenter Intermediate Robotics (CEE)

Teamcenter Version 10.1.5

Course Code	TR43215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate on Teamcenter Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • Process Simulate on Teamcenter Basic Robotic Simulation (TR43115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate on Teamcenter 13.1

Process Simulate on Teamcenter Intermediate Robotics (CEE)

Teamcenter Version 10.1.5

Course Code	TR43215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate on Teamcenter Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

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Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • Process Simulate on Teamcenter Basic Robotic Simulation (TR43115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate on Teamcenter 14.1

Process Simulate on Teamcenter Intermediate Robotics (CEE)

Teamcenter Version 11.4

Course Code	TR43215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate on Teamcenter Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • Process Simulate on Teamcenter Basic Robotic Simulation (TR43115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate on Teamcenter 12.1

Process Simulate on Teamcenter Advanced Robotics (OLP)

Teamcenter Version 10.1.5

Course Code	TR43315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers)..

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • Process Simulate on Teamcenter Basic Robotic Simulation (TR43115)
 • Process Simulate on Teamcenter Intermediate Robotics (CEE) (TR43215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Duerr, Epson, Fanuc, IGM, Kawasaki, Kuka, Nachi, NC, Reis, Staubli, (ABB) Trallfa, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Introduction to Robotic Off-Line Programming (OLP)
 • Introduction to RCS, RRS, and ESRC
 • Setting up the RCS, RRS, and ESRC
 • Creating Robot Programs
 • Inverse Kinematics Solution Selections (Robot Configurations)
 • Robot Controller Selection and Setup
 • Testing the Teach Pendant and Fixing Setup Problems
 • RCS Management
 • Robot Controller Specific Frames, Setup, and Motion Attributes
 • Templates, Uploading, and Downloading
 • ESRC OLP Commands
 • OLP Command XML Customization
 • Motion XML Customization
 • Robotic Path Template XML Customization
 • Other XML Customization Topics
 • OLP Add-ons and Tools

Course Description

Process Simulate on Teamcenter 13.1

Process Simulate on Teamcenter Advanced Robotics (OLP)

Teamcenter Version 10.1.5

Course Code	TR43315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers)..

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • Process Simulate on Teamcenter Basic Robotic Simulation (TR43115)
 • Process Simulate on Teamcenter Intermediate Robotics (CEE) (TR43215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Duerr, Epson, Fanuc, IGM, Kawasaki, Kuka, Nachi, NC, Reis, Staubli, (ABB) Trallfa, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Introduction to Robotic Off-Line Programming (OLP)
 • Introduction to RCS, RRS, and ESRC
 • Setting up the RCS, RRS, and ESRC
 • Creating Robot Programs
 • Inverse Kinematics Solution Selections (Robot Configurations)
 • Robot Controller Selection and Setup
 • Testing the Teach Pendant and Fixing Setup Problems
 • RCS Management
 • Robot Controller Specific Frames, Setup, and Motion Attributes
 • Templates, Uploading, and Downloading
 • ESRC OLP Commands
 • OLP Command XML Customization
 • Motion XML Customization
 • Robotic Path Template XML Customization
 • Other XML Customization Topics
 • OLP Add-ons and Tools

Course Description

Process Simulate on Teamcenter 14.1

Process Simulate on Teamcenter Advanced Robotics (OLP)

Teamcenter Version 11.4

Course Code	TR43315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers)..

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • Process Simulate on Teamcenter Basic Robotic Simulation (TR43115)
 • Process Simulate on Teamcenter Intermediate Robotics (CEE) (TR43215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Duerr, Epson, Fanuc, IGM, Kawasaki, Kuka, Nachi, NC, Reis, Staubli, (ABB) Trallfa, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Introduction to Robotic Off-Line Programming (OLP)
 • Introduction to RCS, RRS, and ESRC
 • Setting up the RCS, RRS, and ESRC
 • Creating Robot Programs
 • Inverse Kinematics Solution Selections (Robot Configurations)
 • Robot Controller Selection and Setup
 • Testing the Teach Pendant and Fixing Setup Problems
 • RCS Management
 • Robot Controller Specific Frames, Setup, and Motion Attributes
 • Templates, Uploading, and Downloading
 • ESRC OLP Commands
 • OLP Command XML Customization
 • Motion XML Customization
 • Robotic Path Template XML Customization
 • Other XML Customization Topics
 • OLP Add-ons and Tools

Course Description

RobotExpert 12.1

RobotExpert Basic Robotic Simulation (G2H)

Course Code	TR44115-GH
User Level	Beginner
Language	English
Price	$4,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **RobotExpert Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using RobotExpert.

PREREQUISITES

 • Previous experience with a 3D system is recommended.
 • A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

RobotExpert 13.1

RobotExpert Basic Robotic Simulation (G2H)

Course Code	TR44115-GH
User Level	Beginner
Language	English
Price	$4,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **RobotExpert Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using RobotExpert.

PREREQUISITES

• Previous experience with a 3D system is recommended.
• A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

RobotExpert 11.1

RobotExpert Basic Robotic Simulation

Course Code	TR44115
User Level	Beginner
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Robot Expert Basic Robotic Simulation </ strong> proporciona instrucciones paso a paso sobre cómo crear simulaciones robóticas básicas y llegar a estudios.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<P> Este curso está dirigido a personas que quieren hacerse expertos en la creación de simulaciones robóticas básicas y llegar a estudios utilizando RobotExpert. </ P>

PREREQUISITES

<P><Ul>
<Li> Los estudiantes deben ser expertos en el uso de un ratón en Windows
Sistemas. </ Li>
<Li> Se recomienda la experiencia previa con un sistema 3D. </ Li>
<Li> Se sugiere un conocimiento básico de la robótica. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

RobotExpert 12.1

RobotExpert Basic Robotic Simulation

Course Code	TR44115
User Level	Beginner
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Robot Expert Basic Robotic Simulation </ strong> proporciona instrucciones paso a paso sobre cómo crear simulaciones robóticas básicas y llegar a estudios.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<P> Los individuos que desean tener conocimiento sobre la creación de simulaciones robóticas básicas y llegar a estudios utilizando RobotExpert. </ P>

PREREQUISITES

<P><Ul>
<Li> Se recomienda la experiencia previa con un sistema 3D. </ Li>
<Li> Se sugiere un conocimiento básico de la robótica. </ Li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

RobotExpert 12.1
RobotExpert Advanced Robotics (OLP) (G2H)

Course Code	TR44315-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **RobotExpert Advanced Robotics** course provides step-by-step instruction on how to use RobotExpert to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers)..

WHO SHOULD ATTEND

Individuals who wish to use RobotExpert to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • RobotExpert Basic Robotic Simulation (G2H) (TR44115)

Knowledge of a robot language: such as those from ABB, Cloos, Epson, Fanuc, IGM, Kawasaki, Kuka, NC machining, Staubli, , Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
• Introduction to RCS, RRS, and ESRC
• Setting up the RCS, RRS, and ESRC
• Creating Robot Programs
• Inverse Kinematics Solution Selections (Robot Configurations)
• Robot Controller Selection and Setup
• Testing the Teach Pendant and Fixing Setup Problems
• RCS Management
• Robot Controller Specific Frames, Setup, and Motion Attributes
• Templates, Uploading, and Downloading
• ESRC OLP Commands
• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• OLP Add-ons and Tools

Course Description

RobotExpert 13.1

RobotExpert Advanced Robotics (OLP) (G2H)

Course Code	TR44315-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **RobotExpert Advanced Robotics** course provides step-by-step instruction on how to use RobotExpert to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers)..

WHO SHOULD ATTEND

Individuals who wish to use RobotExpert to configure, simulate, and upload/download (i.e. OLP) using realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • RobotExpert Basic Robotic Simulation (G2H) (TR44115)

Knowledge of a robot language: such as those from ABB, Cloos, Denso, Epson, Fanuc, IGM, Kawasaki, Kuka, NC machining, Panasonic, Staubli, , Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
• Introduction to RCS, RRS, and ESRC
• Setting up the RCS, RRS, and ESRC
• Creating Robot Programs
• Inverse Kinematics Solution Selections (Robot Configurations)
• Robot Controller Selection and Setup
• Testing the Teach Pendant and Fixing Setup Problems
• RCS Management
• Robot Controller Specific Frames, Setup, and Motion Attributes
• Templates, Uploading, and Downloading
• ESRC OLP Commands
• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• OLP Add-ons and Tools

Course Description

Process Simulate Standalone 12.1

eMS Compatible Standalone Part Flow Simulation

Course Code	TR45101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become knowledgeable on the creation of part and resource flow simulations using Process Simulate Standalone.

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Process Simulate Standalone 13.1

eMS Compatible Standalone Part Flow Simulation

Course Code	TR45101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become knowledgeable on the creation of part and resource flow simulations using Process Simulate Standalone.

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Process Simulate Standalone 14.1

eMS Compatible Standalone Part Flow Simulation

Course Code	TR45101
User Level	Beginner
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create part flow simulations.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of part and resource flow simulations using Process Simulate Standalone.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices
• Path creation and modification
• Sequence of operations

Course Description

Process Simulate Standalone 12.1

eMS Compatible Standalone Human Simulation

Course Code	TR45106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND

Individuals who want to become knowledgeable on creating human simulations, checking ergonomics, and performing reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Grasping and releasing objects
• Working on moving lines
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Task Simulation Builder and other tools
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
• Introduction to custom reports
• Assigning a duration to human operations using several methods

Course Description

Process Simulate Standalone 13.1

eMS Compatible Standalone Human Simulation

Course Code	TR45106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND

Individuals who want to become knowledgeable on creating human simulations, checking ergonomics, and performing reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Grasping and releasing objects
• Working on moving lines
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Task Simulation Builder and other tools
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
• Introduction to custom reports
• Assigning a duration to human operations using several methods

Course Description

Process Simulate Standalone 14.1

eMS Compatible Standalone Human Simulation

Course Code	TR45106
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Human Simulation** course provides step-by-step instruction on how to use Process Simulate to create human simulations, check ergonomics, and perform reach studies.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who want to become knowledgeable on creating human simulations, checking ergonomics, and performing reach studies using Process Simulate on eMS.

PREREQUISITES

• Previous experience with a 3D system is recommended.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• Defining kinematic devices such as lift assists and levers
• Introduction to the human task simulation
• Positioning and walking
• Human operation modification
• Human envelopes and vision window
• Postures, Posture library, and kinematic jogging
• Grasping and releasing objects
• Working on moving lines
• Operating levers, lift assists and manual spot welding
• Picking up, carrying, following, and setting down objects
• Task Simulation Builder and other tools
• Using hand tools
• Assigning object weight, forces, and lift frequency
• Ergonomics report viewer
• Applying various ergonomic standards to a human simulation
• Introduction to custom reports
• Assigning a duration to human operations using several methods

Course Description

Process Simulate Standalone 12.1

eMS Compatible Standalone Basic Robotic Simulation

Course Code	TR45115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate.

PREREQUISITES

 • Previous experience with a 3D system is recommended.
 • A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
  • Pneumatic and servo gun definition and usage
  • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

Process Simulate Standalone 13.1

Process Simulate Standalone Basic Robotic Simulation

Course Code	TR45115
User Level	Beginner
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Process Simulate Standalone Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate.

PREREQUISITES

• Previous experience with a 3D system is recommended.
• A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
  • Pneumatic and servo gun definition and usage
  • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

Process Simulate Standalone 13.1

eMS Compatible Standalone Basic Robotic Simulation

Course Code	TR45115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate.

PREREQUISITES

• Previous experience with a 3D system is recommended.
• A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
 • Pneumatic and servo gun definition and usage
 • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
 • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
 • Gripper definition and usage
 • Pick and place path development
• **And More**
 • Multi-robot simulation (i.e. interference zones)
 • Swept volumes, 7th axis, etc.

Course Description

Process Simulate Standalone 13.1

Process Simulate Standalone Basic Robotic Simulation

Course Code	TR45115
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> El curso de <strong> Simulación de Simulación de Robótica Básica Autónoma </ strong> proporciona instrucciones paso a paso sobre cómo crear simulaciones robóticas básicas y llegar a estudios. </ p>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<p> Individuos que desean estar informados sobre la creación de simulaciones robóticas básicas y alcanzar estudios usando Simulación de Procesos. </ p>

PREREQUISITES

<P>
 Se recomienda la experiencia previa con un sistema 3D. </ li>
 Se sugiere un conocimiento básico de la robótica. </ li>
</ ul></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
  • Study creation
  • Creating sequences of simulative operations
  • Collision detection
  • Section cutting
  • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
  • Pneumatic and servo gun definition and usage
  • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
  • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
  • Gripper definition and usage
  • Pick and place path development
• **And More**
  • Multi-robot simulation (i.e. interference zones)
  • Swept volumes, 7th axis, etc.

Course Description

Process Simulate Standalone 14.1

eMS Compatible Standalone Basic Robotic Simulation

Course Code	TR45115
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Basic Robotic Simulation** course provides step-by-step instruction on how to create basic robotic simulations and reach studies.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable on the creation of basic robotic simulations and reach studies using Process Simulate.

PREREQUISITES

 • Previous experience with a 3D system is recommended.
 • A basic knowledge of robotics is suggested.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• **Basic Environment**
 • Study creation
 • Creating sequences of simulative operations
 • Collision detection
 • Section cutting
 • Video and picture output
• **Defining kinematic devices**
• **Defining and simulating robotic spot welding**
 • Pneumatic and servo gun definition and usage
 • Ped. welding and Gun on robot path development
• **Defining and simulating robotic continuous applications**
 • Painting, arc welding, and grinding path development
• **Defining and simulating robotic material handling**
 • Gripper definition and usage
 • Pick and place path development
• **And More**
 • Multi-robot simulation (i.e. interference zones)
 • Swept volumes, 7th axis, etc.

Course Description

Process Simulate Standalone 12.1

eMS Compatible Standalone Intermediate Robotics (CEE)

Course Code	TR45215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate (eMS Compatible) Standalone Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • eMS Compatible Standalone Basic Robotic Simulation (TR45115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate Standalone 13.1

eMS Compatible Standalone Intermediate Robotics (CEE)

Course Code	TR45215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate (eMS Compatible) Standalone Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

- Project preparation
- Concept of event-based simulation
- Device operations basics
- Common and differential transitions
- Part appearances and material flow
- Sensors
- Logic blocks and smart components
- Process logic management (modules)
- Defining and simulating conveyors
- Event-based robotic signals
- And more

PREREQUISITES

Required courses:
- eMS Compatible Standalone Basic Robotic Simulation (TR45115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

- Student Guide

Course Description

Process Simulate Standalone 13.1

eMS Compatible Standalone Intermediate Robotics (CEE)

Course Code	TR45215
User Level	Intermediate
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

 En el curso **Simulación de procesos (compatible con eMS) de robótica intermedia independiente (CEE)** , se exploran las características básicas de la simulación basada en eventos robóticos utilizando el Evaluador de eventos cíclicos (CEE). El CEE, que funciona como un PLC, se usa para controlar cómo una simulación robótica típica progresa usando la lógica.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

PREREQUISITES

Required courses:
 • Process Simulate Standalone Basic Robotic Simulation (TR45115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Process Simulate Standalone 14.1

eMS Compatible Standalone Intermediate Robotics (CEE)

Course Code	TR45215
User Level	Intermediate
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

In the **Process Simulate (eMS Compatible) Standalone Intermediate Robotics (CEE)** course, basic features of robotic event-based simulation are explored using the Cyclic Event Evaluator (CEE). The CEE, which functions like a PLC, is used to control how a typical robotics simulation progresses using logic.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who wish to become knowledgeable in creating event-based simulations using the Cyclic Event Evaluator (CEE).

PREREQUISITES

Required courses:
 • eMS Compatible Standalone Basic Robotic Simulation (TR45115)

Knowledge of controls and robotics helpful.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Project preparation
• Concept of event-based simulation
• Device operations basics
• Common and differential transitions
• Part appearances and material flow
• Sensors
• Logic blocks and smart components
• Process logic management (modules)
• Defining and simulating conveyors
• Event-based robotic signals
• And more

Course Description

Process Simulate Standalone 12.1

eMS Compatible Standalone Advanced Robotics (OLP)

Course Code	TR45315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (OLP) using MOP, realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (OLP) using realistic robot simulation (RRS/RCS) or MOP, and use ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • eMS Compatible Standalone Basic Robotic Simulation (TR45115)
 • (TR45215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Epson, Duerr, Fanuc, Kawasaki, Kuka, Nachi, NC machining, Reis, Staubli, (ABB) Trallfa, Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
• Introduction to MOP, RCS, RRS, and ESRC
• Setting up the RCS, RRS, and ESRC
• Creating Robot Programs
• Inverse Kinematics Solution Selections (Robot Configurations)
• Robot Controller Selection and Setup
• Testing the Teach Pendant and Fixing Setup Problems
• RCS Management
• Robot Controller Specific Signals, Commands, Frames, Setup, and Motion Attributes
• Templates, Uploading, and Downloading
• ESRC OLP Commands
• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• Other Related OLP Topics

Course Description

Process Simulate Standalone 13.1

eMS Compatible Standalone Advanced Robotics (OLP)

Course Code	TR45315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (OLP) using MOP, realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (OLP) using realistic robot simulation (RRS/RCS) or MOP, and use ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • eMS Compatible Standalone Basic Robotic Simulation (TR45115)
 • (TR45215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Epson, Duerr, Fanuc, Kawasaki, Kuka, Nachi, NC machining, Reis, Staubli, (ABB) Trallfa, Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
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• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• Other Related OLP Topics

Course Description

Process Simulate Standalone 13.1

eMS Compatible Standalone Advanced Robotics (OLP)

Course Code	TR45315
User Level	Advanced
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

El curso **Process Simulate (compatible con eMS) Advanced Robotics** proporciona instrucciones paso a paso sobre cómo usar Process Simulate para configurar, simular y cargar / descargar (OLP) usando MOP, realista simulación de robot (RRS), RCS (software de controlador de robot) y ESRC (controladores específicos de robot emulado).

WHO SHOULD ATTEND

Individuals who wish to use Process Simulate to configure, simulate, and upload/download (OLP) using realistic robot simulation (RRS/RCS) or MOP, and use ESRC (Emulated Robot Specific Controllers).

PREREQUISITES

Required courses:
 • Process Simulate Standalone Basic Robotic Simulation (TR45115)
 • (TR45215)

Knowledge of a robot language: such as those from ABB, Cloos, Comau, Epson, Duerr, Fanuc, Kawasaki, Kuka, Nachi, NC machining, Reis, Staubli, (ABB) Trallfa, Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Introduction to Robotic Off-Line Programming (OLP)
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• Other Related OLP Topics

Course Description

Process Simulate Standalone 14.1

eMS Compatible Standalone Advanced Robotics (OLP)

Course Code	TR45315
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
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PROVIDED COURSE MATERIAL

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COURSE TOPICS

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Course Description

Process Simulate Standalone 14.1

eMS Compatible Standalone Advanced Robotics (OLP)

Course Code	TR45315
User Level	Advanced
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

The **Process Simulate (eMS Compatible) Standalone Advanced Robotics** course provides step-by-step instruction on how to use Process Simulate to configure, simulate, and upload/download (OLP) using MOP, realistic robot simulation (RRS), RCS (Robot Controller Software), and ESRC (Emulated Robot Specific Controllers).

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Knowledge of a robot language: such as those from ABB, Cloos, Comau, Epson, Duerr, Fanuc, Kawasaki, Kuka, Nachi, NC machining, Reis, Staubli, (ABB) Trallfa, Universal, or Yaskawa/Motoman. Please specify two desired robot languages when signing up for this course.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

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• Introduction to MOP, RCS, RRS, and ESRC
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• Creating Robot Programs
• Inverse Kinematics Solution Selections (Robot Configurations)
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• Robot Controller Specific Signals, Commands, Frames, Setup, and Motion Attributes
• Templates, Uploading, and Downloading
• ESRC OLP Commands
• OLP Command XML Customization
• Motion XML Customization
• Robotic Path Template XML Customization
• Other XML Customization Topics
• Other Related OLP Topics

Course Description

Plant Simulation 11.0

Plant Simulation Basics, Methods, and Strategies

Course Code	TR46101
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Simulaciones, métodos y estrategias sobre la simulación de plantas </ strong> introduce a los usuarios de las licencias profesionales, estándar o de aplicación de Plant Simulation a Plant Simulation y su funcionalidad básica. Los estudiantes aprenderán cómo construir, ejecutar y evaluar modelos de simulación. También se discutirá la definición de lógica personalizada (métodos). </ P>

WHO SHOULD ATTEND	**COURSE TOPICS**

<P> Individuos que deseen convertirse en usuarios de Plant Simulation </ p>

PREREQUISITES

<P><Ul>
<Li> Familiaridad con el entorno de Windows </ li>
<Li> Conocimiento de la simulación de eventos discretos sugerida </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Basic Plant Simulation Interface
• Object Oriented Modeling Strategies
• Basics of Material Flow Objects
• Hierarchy, Icons, and Inheritance
• Modeling Buffers, Assembly Lines and Failures
• Resource objects (i.e. workers and shift calendars)
• Resource objects (i.e. workers and shift calendars)
• Basic conveying systems (length-oriented objects)
• Other Objects (i.e. Information objects, User Interface object, mobile units)
• Sankey, bottleneck analyzer, and experiment manager basics
• Customizing Object Logic (Method creation)
• Methods for Data collection and evaluation
• Methods for Interfaces (Excel, DDE, basics of other interfaces)
• Data Acquisition

Course Description

Plant Simulation 12.0

Plant Simulation Basics, Methods, and Strategies

Course Code	TR46101
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Simulaciones, métodos y estrategias sobre la simulación de plantas </ strong> introduce a los usuarios de las licencias profesionales, estándar o de aplicación de Plant Simulation a Plant Simulation y su funcionalidad básica. Los estudiantes aprenderán cómo construir, ejecutar y evaluar modelos de simulación. También se discutirá la definición de lógica personalizada (métodos). </ P>

WHO SHOULD ATTEND

<P> Individuos que deseen convertirse en usuarios de Plant Simulation </ p>

PREREQUISITES

<P><Ul>
<Li> Familiaridad con el entorno de Windows </ li>
<Li> Conocimiento de la simulación de eventos discretos sugerida </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Basic Plant Simulation interface
• Object-oriented modeling strategies
• Basics of material flow objects
• Hierarchy, icons, and inheritance
• Modeling buffers, assembly lines and roads, Kanban, and failures
• Resource objects (i.e. workers and shift calendars)
• Resource objects (i.e. workers, shift calendars, foot paths, etc.)
• Basic conveying systems (length-oriented objects)
• Other objects (i.e. Information objects, User Interface object, mobile units)
• Sankey, bottleneck analyzer, and experiment manager basics
• Customizing object logic (Method creation)
• Methods for data collection and evaluation
• Methods for interfaces (Excel, DDE, basics of other interfaces)
• Data acquisition from external files and systems

Course Description

Plant Simulation 13.0

Plant Simulation Basics, Methods, and Strategies

Course Code	TR46101
User Level	Beginner
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Plant Simulation Basics, Methods, and Strategies** course introduces users of Plant Simulation professional, standard, or application licenses to Plant Simulation and its basic functionality. Students will learn how to build, run and evaluate simulation models. The definition of custom logic (methods) will also be discussed.

WHO SHOULD ATTEND

Individuals who would like to become Plant Simulation users

PREREQUISITES

• Familiarity with Windows environment
• Knowledge of discrete event simulation suggested

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Basic Plant Simulation interface
• Object-oriented modeling strategies
• Basics of material flow objects
• Hierarchy, icons, and inheritance
• Modeling buffers, assembly lines and roads, Kanban, and failures
• Resource objects (i.e. workers, shift calendars, foot paths, etc.)
• Basic conveying systems (length-oriented objects)
• Other objects (i.e. Information objects, User Interface object, mobile units)
• Sankey, bottleneck analyzer, and experiment manager basics
• Customizing object logic (Method creation)
• Methods for data collection and evaluation
• Methods for interfaces (Excel, DDE, basics of other interfaces)
• Data acquisition from external files and systems

Course Description

Plant Simulation 13.0

Plant Simulation Basics, Methods, and Strategies

Course Code	TR46101
User Level	Beginner
Language	Portuguese
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Plant Simulation Basics, Methods, and Strategies** course introduces users of Plant Simulation professional, standard, or application licenses to Plant Simulation and its basic functionality. Students will learn how to build, run and evaluate simulation models. The definition of custom logic (methods) will also be discussed.

WHO SHOULD ATTEND

Individuals who would like to become Plant Simulation users

PREREQUISITES

• Familiarity with Windows environment
• Knowledge of discrete event simulation suggested

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Basic Plant Simulation interface
• Object-oriented modeling strategies
• Basics of material flow objects
• Hierarchy, icons, and inheritance
• Modeling buffers, assembly lines and roads, Kanban, and failures
• Resource objects (i.e. workers, shift calendars, foot paths, etc.)
• Basic conveying systems (length-oriented objects)
• Other objects (i.e. Information objects, User Interface object, mobile units)
• Sankey, bottleneck analyzer, and experiment manager basics
• Customizing object logic (Method creation)
• Methods for data collection and evaluation
• Methods for interfaces (Excel, DDE, basics of other interfaces)
• Data acquisition from external files and systems

Course Description

Plant Simulation 13.0

Plant Simulation Basics, Methods, and Strategies

Course Code TR46101
User Level Beginner
Language Spanish
Price $1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration 5 Days

For More Information Learning Services, Mexico (training.mx.plm@siemens.com)

<P> El curso <strong> Simulaciones, métodos y estrategias sobre la simulación de plantas </ strong> introduce a los usuarios de las licencias profesionales, estándar o de aplicación de Plant Simulation a Plant Simulation y su funcionalidad básica. Los estudiantes aprenderán cómo construir, ejecutar y evaluar modelos de simulación. También se discutirá la definición de lógica personalizada (métodos). </ P>

WHO SHOULD ATTEND	COURSE TOPICS

<P> Individuos que deseen convertirse en usuarios de Plant Simulation </ p>

PREREQUISITES

<P><Ul>
<Li> Familiaridad con el entorno de Windows </ li>
<Li> Conocimiento de la simulación de eventos discretos sugerida </ li>
</ Ul></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Basic Plant Simulation interface
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• Basics of material flow objects
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• Other objects (i.e. Information objects, User Interface object, mobile units)
• Sankey, bottleneck analyzer, and experiment manager basics
• Customizing object logic (Method creation)
• Methods for data collection and evaluation
• Methods for interfaces (Excel, DDE, basics of other interfaces)
• Data acquisition from external files and systems

Course Description

Plant Simulation 14.0

Plant Simulation Basics

Course Code	TR46101
User Level	Beginner
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Plant Simulation Basics** course introduces users of Plant Simulation professional, standard, or application licenses to Plant Simulation and its basic functionality. Students will learn how to build, run and evaluate simulation models. The definition of custom logic (methods) will also be discussed.

WHO SHOULD ATTEND

Individuals who would like to become Plant Simulation users

PREREQUISITES

• Familiarity with Windows environment
• Knowledge of discrete event simulation suggested

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Basic Plant Simulation interface
• Object-oriented modeling strategies
• Basics of material flow objects
• Hierarchy and inheritance
• Navigation and structure of the 3D Window
• Modeling buffers, assembly lines, roads, Kanban, and failures
• Resource objects (i.e. workers, shift calendars, foot paths, etc.)
• Basic conveying systems (length-oriented objects)
• Other objects (i.e. Information objects, User Interface object, mobile units)
• Sankey, bottleneck analyzer, and experiment manager basics
• Creating videos and printing the scene
• Techniques for creating frame backgrounds in 3D
• Customizing object logic (Method creation)
• Methods for 3D, data collection, and evaluation
• Methods for interfaces (read and write to Excel and text files)

Course Description

Plant Simulation 14.0

Plant Simulation Basics

Course Code	TR46101
User Level	Beginner
Language	Spanish
Price	$2,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

 El curso **Plant Simulation Basics** introduce a los usuarios de licencias profesionales, estándar o de licencias de Plant Simulation a Plant Simulation y su funcionalidad básica. Los estudiantes aprenderán cómo construir, ejecutar y evaluar modelos de simulación. También se discutirá la definición de lógica personalizada (métodos).

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who would like to become Plant Simulation users

PREREQUISITES

• Familiarity with Windows environment
• Knowledge of discrete event simulation suggested

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Basic Plant Simulation interface
• Object-oriented modeling strategies
• Basics of material flow objects
• Hierarchy and inheritance
• Navigation and structure of the 3D Window
• Modeling buffers, assembly lines, roads, Kanban, and failures
• Resource objects (i.e. workers, shift calendars, foot paths, etc.)
• Basic conveying systems (length-oriented objects)
• Other objects (i.e. Information objects, User Interface object, mobile units)
• Sankey, bottleneck analyzer, and experiment manager basics
• Creating videos and printing the scene
• Techniques for creating frame backgrounds in 3D
• Customizing object logic (Method creation)
• Methods for 3D, data collection, and evaluation
• Methods for interfaces (read and write to Excel and text files)

Course Description

Plant Simulation 13.0

Plant Simulation Advanced Modeling and Optimization

Course Code	TR46300
User Level	Advanced
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Plant Simulation Advanced Modeling and Optimization** course introduces a Plant Simulation professional user to advanced methods of building simulation models, including building simulation applications, using Plant Simulation optimization tools, and improving the performance of existing simulation models.

WHO SHOULD ATTEND

Individuals who would like to become advanced Plant Simulation users

PREREQUISITES

Required courses:
• Plant Simulation Basics (TR46101)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Advanced Transportation Techniques (Automatic Routing, Tugger Trains, Cranes, Stores, etc.)
 • Other Advanced Modeling Techniques (i.e. Attribute Explorer, Profiler, Observers, etc.)
 • Model Optimization Techniques and Random Numbers (Distributions, Data Fit Tools, Confidence Intervals, Sequential Sampler, Variants Generator, Custom States, etc.)
 • Experiment Manager (Multi-Level, Random, Two-Level, Rules Setup, etc.)
 • Analysis of Variance, Variance Reduction, Neural Networks, Distributed Simulation, Fuzzy Logic
 • Genetic Algorithms (optimization with Stochastic simulation, sequential optimization, combined optimization, batch)
 • Scheduling and Layout optimization, etc.
 • Customized user dialogs
 • Custom libraries

Course Description

Plant Simulation 13.0

Plant Simulation Advanced Modeling and Optimization

Course Code	TR46300
User Level	Advanced
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Plant Simulation Advanced Modeling and Optimization** course introduces a Plant Simulation professional user to advanced methods of building simulation models, including building simulation applications, using Plant Simulation optimization tools, and improving the performance of existing simulation models.

WHO SHOULD ATTEND

Individuals who would like to become advanced Plant Simulation users

PREREQUISITES

Required courses:
 • Plant Simulation Basics (TR46101)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Advanced Transportation Techniques (Automatic Routing, Tugger Trains, Cranes, Stores, etc.)
 • Other Advanced Modeling Techniques (i.e. Attribute Explorer, Profiler, Observers, etc.)
 • Model Optimization Techniques and Random Numbers (Distributions, Data Fit Tools, Confidence Intervals, Sequential Sampler, Variants Generator, Custom States, etc.)
 • Experiment Manager (Multi-Level, Random, Two-Level, Rules Setup, etc.)
 • Analysis of Variance, Variance Reduction, Neural Networks, Distributed Simulation, Fuzzy Logic
 • Genetic Algorithms (optimization with Stochastic simulation, sequential optimization, combined optimization, batch)
 • Scheduling and Layout optimization, etc.
 • Customized user dialogs
 • Custom libraries

Course Description

Plant Simulation 14.0

Plant Simulation Advanced Modeling and Optimization

Course Code	TR46300
User Level	Advanced
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Plant Simulation Advanced Modeling and Optimization** course introduces a Plant Simulation professional user to advanced methods of building simulation models, including building simulation applications, using Plant Simulation optimization tools, and improving the performance of existing simulation models.

WHO SHOULD ATTEND

Individuals who would like to become advanced Plant Simulation users

PREREQUISITES

Required courses:
 • Plant Simulation Basics (TR46101)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

 • Advanced Transportation Techniques (Automatic Routing, Tugger Trains, Cranes, Stores, etc.)
 • Other Advanced Modeling Techniques (i.e. Attribute Explorer, Profiler, Observers, etc.)
 • Model Optimization Techniques and Random Numbers (Distributions, Data Fit Tools, Confidence Intervals, Sequential Sampler, Variants Generator, Custom States, etc.)
 • Experiment Manager (Multi-Level, Random, Two-Level, Rules Setup, etc.)
 • Analysis of Variance, Variance Reduction, Neural Networks, Distributed Simulation, Fuzzy Logic
 • Genetic Algorithms (optimization with Stochastic simulation, sequential optimization, combined optimization, batch)
 • Scheduling and Layout optimization, etc.
 • Customized user dialogs
 • Custom libraries

Course Description

Robcad 11.0

Robcad Basics (G2H)

Course Code   TR47100-GH
User Level   Beginner
Language   English
Price $2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration   2 Days

For More Information   Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In the **Robcad Bascis** course the basic Robcad interface and features are explored. This class prepares users to attend more advanced training on Robcad applications

WHO SHOULD ATTEND

Individuals who would like to become Robcad users

PREREQUISITES

Familiarity with Windows environment and experience with a CAD system

COURSE TOPICS

• Introduction to the Robcad environment
• Workcell layout
• Modeling and kinematics
• Process design and simulation
• CAD integration and translation

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Robcad 11.0

Robcad Spot (G2H)

Course Code	TR47202-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In the **Robcad Spot** course the Robcad Spot application will be used to design several welding scenarios.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who would like to become Robcad Spot users

PREREQUISITES

Required courses:
• Robcad Basics (G2H) (TR47100)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Defining and using spot-weld gun kinematics
• Placing and orienting the gun at a weldspot (location)
• Creating and editing weld paths
• Using multi-sections for gun shank validation
• Testing robot reach
• Identifying and removing collisions
• Signal (I/O) definition, simulation, and work balance
• Pedestal (external TCP) and gun on robot welding
• Gun search and smart search
• Cables
• Servo guns
• Other selected topics

Course Description

Robcad 11.0

Robcad Paint (G2H)

Course Code	TR47203-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In the **Robcad Paint** course the Robcad Paint application will be used to design several painting scenarios.

WHO SHOULD ATTEND

Individuals who would like to become Robcad Paint users

PREREQUISITES

Required courses:
 • Robcad Basics (G2H) (TR47100)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Preparation of the workspace and paint gun in Robcad Paint
• Creating, editing, and simulating robotic paint paths
• Creating, editing, and using paint databases
• Detecting collisions and robot reach
• Setting robot motion parameters
• Other paint path creation techniques
• Using conveyors & rails
• Paint coverage analysis

Course Description

Robcad 11.0

Robcad Arc (G2H)

Course Code	TR47204-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In the **Robcad Arc** course the Robcad Arc application will be used to design several arc-welding scenarios.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who would like to become Robcad Arc users

PREREQUISITES

Required courses:
 • Robcad Basics (G2H) (TR47100)

COURSE TOPICS

• Creating, editing, and simulating weld seams (arc-weld paths)
• Manipulating torch orientation
• Defining, editing, and simulating gantries and positioners
• Arc sessions, arc layers, welding groups, and welding tables
• Using searches to locate a part
• Groove structure and layers tables

PROVIDED COURSE MATERIAL

• Student Guide

Course Description

Robcad 11.0

Robcad Advanced Modeling and Kinematics (G2H)

Course Code	TR47209-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In the **Robcad Advanced Modeling and Kinematics** course students will be exposed to specific features of Robcad (advanced modeling license for sections) that can be used to design more complex kinematic structures such as robots, guns, fixtures, etc.

WHO SHOULD ATTEND	COURSE TOPICS

Individuals who would like to become advanced Robcad users that will have a better idea how to setup more complex kinematic structures

 • Modeling icons and functionality
 • 2D and 3D sketcher tools, as well as other surface tools available in eM-Workplace

 • Exact solid creation
 • Support element creation
 • Get part and search tool

PREREQUISITES

Required courses:
 • Robcad Basics (G2H) (TR47100)

 • Slider and four bar linkages
 • Mechanism coupling

 • Kinematic looping
 • Defining variable joint limits
 • Drawing the kinematic tree
 • Gun kinematic definition
 • Defining the training and CAM joint
 • CAD integration in eM-Workplace
 • Smart search, set editor, gun search, and gun define tools
 • Variable and constraint limits

PROVIDED COURSE MATERIAL

 • Student Guide

Course Description

Robcad 11.0

Robcad OLP (G2H)

Course Code	TR47211-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

In the **Robcad OLP** course students will be exposed to the basics of Robcad robot controllers and off-line programming (OLP).

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Individuals who would like to become Robcad OLP users

PREREQUISITES

Required courses:
 • Robcad Basics (G2H) (TR47100)

And choose any one of the alternative courses

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Robot Models & MOP (RRS, .e files, etc)
• Robcad Robot controller (teach pendant) setup
• Motion attributes
• Process generation
• Process to program
• OLP in process design
• Workcell preparation
• Error sources

• Calibrating tools, externals, and workcells

• Workcell setup for OLP
• Robcad Robot controller (teach pendant) usage
• Process Simulation, uploading, and downloading

Course Description

Teamcenter Visualization 11.2

Visualization (Vis) Professional (G2H)

Course Code	TR5001-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Learn to view, measure, markup, manipulate, and analyze 3D models and 2D images in **Vis Professional**. Learn how to share your analysis through the enterprise.

WHO SHOULD ATTEND	COURSE TOPICS

Engineers, designers, and others who need to view 3D models and 2D images, add markups, perform analysis, and communicate with others

- Navigate around 3D models
- Select parts and control part visibility
- View assembly structure and part attributes
- Modify part appearance
- Move, rotate, and scale parts
- Create visual reports
- Section 3D models
- Mark up, measure, and compare 3D models
- Play motion files and record movies
- Capture 2D images of 3D models
- Annotate, measure, and compare 2D images

PREREQUISITES

Familiarity with basic Windows operating system commands

PROVIDED COURSE MATERIAL

- Student Guide

Course Description

Teamcenter Visualization 11.2

Visualization (Vis) Professional (G2H)

Course Code	TR5001
User Level	Beginner
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <b> (G2H) garantizado para mantener </ b>. Seleccione Aquí para obtener más información acerca de los cursos G2H. </ P>

<p> Aprenda a ver, medir, marcar, manipular y analizar modelos 3D e imágenes 2D en <strong> Vis Professional </ strong>.

WHO SHOULD ATTEND

<p> Ingenieros, diseñadores y otros que necesitan ver modelos en 3D e imágenes en 2D, agregar marcas, realizar análisis y comunicarse con otros </ p>

PREREQUISITES

<P><p> Familiaridad con los comandos básicos del sistema operativo de Windows </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Navigate around 3D models
• Select parts and control part visibility
• View assembly structure and part attributes
• Modify part appearance
• Move, rotate, and scale parts
• Create visual reports
• Section 3D models
• Mark up, measure, and compare 3D models
• Play motion files and record movies
• Capture 2D images of 3D models
• Annotate, measure, and compare 2D images

Course Description

Teamcenter Visualization 11.2

Visualization (Vis) Mockup (G2H)

Course Code	TR5002-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Learn to view, measure, markup, manipulate, and analyze 3D models and 2D images in **Vis Mockup**. Learn how to share your analysis through the enterprise.

The first two days of this course are identical to the Lifecycle Visualization Professional course. This course adds a third day of Mockup-only advanced features and advanced exercises.

WHO SHOULD ATTEND

Engineers, designers, and others who need to view 3D models and 2D images, add markups, perform analysis, and communicate with others

PREREQUISITES

Familiarity with basic Windows operating system commands

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Navigate around 3D models
• Select parts and control part visibility
• View assembly structure and part attributes
• Modify part appearance
• Move, rotate, and scale parts
• Create visual reports
• Section 3D models
• Mark up, measure, and compare 3D models
• Play motion files and record movies
• Capture 2D images of 3D models
• Annotate, measure, and compare 2D images
• Hide obscuring parts and clip areas from models
• Group parts, align parts, and use filters
• Generate part extraction paths
• Check clearances
• Constrain parts

Course Description

Teamcenter Visualization 10.1

Visualization (Vis) Mockup (G2H)

Course Code	TR5002
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <b> (G2H) garantizado para mantener </ b>. Seleccione Aquí para obtener más información acerca de los cursos G2H. </ P>

<p> <strong> Vis Mockup </ strong> permite a los usuarios interactuar fácilmente con los datos digitales del producto y ver los últimos modelos en 3D e imágenes en 2D en un único entorno visual. Mockup es una poderosa solución de creación de prototipos digitales en tiempo real que incluye visualización 3D interactiva y análisis avanzado robusto de grandes conjuntos de productos. La arquitectura de renderizado de alto rendimiento de Teamcenter Visualization permite a los usuarios ver e interactuar con componentes individuales o grandes ensambles digitales. </ p> <p> Los estudiantes aprenderán cómo ver y navegar a través de los datos y la geometría del ensamblaje del modelo CAD, y cómo manipular y analizar ambos. El alumno aprenderá a compartir su análisis en toda la empresa. El curso está estructurado de manera que se introducen datos simples y se los utiliza durante la exploración práctica de las muchas y poderosas funciones del software. Todos los ejercicios de clase incorporan varias habilidades y herramientas para fomentar el desarrollo del aprendizaje integrado y la aplicación del software. </ P>

<p> Los dos primeros días de este curso son idénticos al nuevo curso de Teamcenter Visualization Professional. Este curso de

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<p> Cualquier persona de toda la compañía que tenga la necesidad de ver y analizar modelos en 3D e imágenes en 2D </ p>

PREREQUISITES

<P><p> Se supone conocimiento básico de la computadora. </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

• Open 3D models and 2D images
• Select parts and control part visibility
• Navigate around 3D models
• View assembly structure and part attributes
• Create alternate assembly hierarchies
• Modify part appearance
• Move, rotate, and scale parts
• Create and apply snapshots
• Create visual reports
• Section 3D models
• Mark up, measure, and compare 3D models
• Play motion files and record movies
• Capture 2D images of 3D models
• Annotate, measure, and compare 2D images
• Save your work
• Hide obscuring parts and clip areas from models
• Group parts, align parts, and use filters
• Generate part extraction paths
• Check clearances

Course Description

Teamcenter Visualization 9.1

Teamcenter Visualization Animation (G2H)

Course Code	TR5003-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Teamcenter Visualization Animation expands Professional and Mockup by adding 3D animation authoring. Students learn to create, edit, and review animations. Animations allow you to communicate design concepts and to show assembly sequences and processes better than with static images alone.

WHO SHOULD ATTEND

Engineers and designers who have the need to perform animations for analysis, prototyping or process documentation and demonstration.

PREREQUISITES

Required courses:
 • Teamcenter Visualization Professional (G2H) (TR5001)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Interface
• Running sample animations
• Creating new animation
• Selecting assembly for animation
• Start animation
• Animation properties
• Action wizard
• Template actions
• Adding events
• Adding actions
 • Camera
 • Visibility
 • Linear Path
 • VFM
 • Text
 • URL
 • Sound
 • Camera tracking
• Validation
• Executing events and actions
• Saving animations (.van)
• Adding child events
• Start and record movie
• Diagnostics
• Create new animation

Course Description

Teamcenter Visualization 9.1

Teamcenter Visualization Illustration (G2H)
(formerly Publish)

Course Code	TR5004-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Teamcenter Visualization Illustration enables the student to author, distribute and visualize the most current product and process data in a controlled, multi-media environment by leveraging enterprise visualization software, repurposing existing product and process data, integrating 2D and 3D environments, automating the maintenance of data and allowing exportation of information as HTML pages.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Engineers, designers and technical writers who are responsible for technical illustrations, creating work instructions or other production documentation

PREREQUISITES

Required courses:
 • Teamcenter Visualization Professional (G2H) (TR5001)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Working with 3D geometry assets
 • Page extents
• Technical illustrations
 • Working with stencils & shapes
 • Save as web page
• Technical portfolios
 • Publishing contents
• Callouts and symbols
 • Re-sequencing
 • Adding symbols
• Thrustlines
 • Part-aligned
• Inserting
 • Tables
 • Hypertext
• Change management
 • Detecting changes

Course Description

Classic Jack 9.0

Classic Jack (G2H)

Course Code TR60010-GH
User Level Beginner
Language English
Price $3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration 3 Days

For More Information Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Classic Jack is designed to teach students how to use Classic Jack for human modeling and simulation. The student will learn how to create a virtual human and analyze performance in a number of situations.

WHO SHOULD ATTEND	COURSE TOPICS

• Engineers
• Designers
• And ergonomists who have the need to place digital workers into an environment and perform critical analysis.

PREREQUISITES

Basic computer knowledge is assumed.

• Building a virtual environment
• Creating a virtual human
• Defining your human's size and shape
• Positioning the human in your environment
• Assigning your human tasks
• Analyzing how your human performs

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Classic Jack 8.3

Classic Jack

Course Code	TR60010
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Classic Jack </ strong> está diseñado para enseñar a los estudiantes cómo usar Classic Jack para modelado y simulación humana. El alumno aprenderá cómo crear un ser humano virtual y analizar el desempeño en una serie de situaciones. </ P>

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros </ li>
<Li> Diseñadores </ li>
<Li> Y los ergonomistas que tienen la necesidad de colocar a los trabajadores digitales en un entorno y realizar análisis críticos. </ Li>
</ Ul>

PREREQUISITES

<P><P> Se asume el conocimiento básico de la informática. </ P></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Building a virtual environment
• Creating a virtual human
• Defining your human's size and shape
• Positioning the human in your environment
• Assigning your human tasks
• Analyzing how your human performs

Course Description

FactoryCAD 2016.0

FactoryCAD (G2H)

Course Code	TR7001-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **FactoryCAD** course teaches students to create a basic 3D factory layout drawing using FactoryCAD drawing and editing tools. Students will develop skills to organize drawing objects on layers, add conveyors, equipment, building columns, cranes, furniture, platforms, and mezzanines. They will learn to build their own custom objects and systems. Students will also organize symbols and objects in libraries.

Class can either be taught on-site or in a Siemens PLM classroom. If taught in a Siemens PLM classroom, the following conditions apply:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class.
 • Siemens cannot provide AutoCAD licenses, but can provide FactoryCAD temporary licenses as needed.

WHO SHOULD ATTEND	COURSE TOPICS

Industrial engineers, manufacturing engineers, material handling engineers, factory layout specialists, architects involved in industrial facilities

PREREQUISITES

 • Basic AutoCAD drawing and editing skills
 • Basic computer knowledge is assumed
 • Basic AutoCAD 3D viewing and modeling is recommended

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

COURSE TOPICS

• Smart factory objects
• Creating an new facility layout
• Exporting a layout to a visualization program
• Layer organization and standards
• Creating generic tool objects
• Using the Factory Explorer and Factory libraries
• Importing tooling and product geometry
• Analyzing and documenting space use
• Animating within FactoryCAD
• Building custom parametric objects
• Converting 2D outlines to 3D objects
• Building systems from custom objects
• Querying drawing objects

Course Description

FactoryCAD 2017.0

FactoryCAD (G2H)

Course Code	TR7001-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **FactoryCAD** course teaches students to create a basic 3D factory layout drawing using FactoryCAD drawing and editing tools. Students will develop skills to organize drawing objects on layers, add conveyors, equipment, building columns, cranes, furniture, platforms, and mezzanines. They will learn to build their own custom objects and systems. Students will also organize symbols and objects in libraries.

Class can either be taught on-site or in a Siemens PLM classroom. If taught in a Siemens PLM classroom, the following conditions apply:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class.
 • Siemens cannot provide AutoCAD licenses, but can provide FactoryCAD temporary licenses as needed.

WHO SHOULD ATTEND	**COURSE TOPICS**
Industrial engineers, manufacturing engineers, material handling engineers, factory layout specialists, architects involved in industrial facilities	• Smart factory objects • Creating an new facility layout • Exporting a layout to a visualization program • Layer organization and standards • Creating generic tool objects • Using the Factory Explorer and Factory libraries • Importing tooling and product geometry • Analyzing and documenting space use • Animating within FactoryCAD

PREREQUISITES

 • Basic AutoCAD drawing and editing skills
 • Basic computer knowledge is assumed
 • Basic AutoCAD 3D viewing and modeling is

• Building custom parametric objects
• Converting 2D outlines to 3D objects
• Building systems from custom objects
• Querying drawing objects

recommended

<table><tr><td>PROVIDED COURSE MATERIAL</td></tr></table>

• Student Guide
• Activity Material

<table><tr><td>ATTENDANCE REQUIREMENTS</td></tr></table>

Requires use of customer's hardware with software and license loaded. Siemens cannot provide AutoCAD licenses, but can provide FactoryCAD temporary licenses as needed.

FactoryCAD 2018.0

FactoryCAD (G2H)

Course Code	TR7001-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **FactoryCAD** course teaches students to create a basic 3D factory layout drawing using FactoryCAD drawing and editing tools. Students will develop skills to organize drawing objects on layers, add conveyors, equipment, building columns, cranes, furniture, platforms, and mezzanines. They will learn to build their own custom objects and systems. Students will also organize symbols and objects in libraries.

Class can either be taught on-site or in a Siemens PLM classroom. If taught in a Siemens PLM classroom, the following conditions apply:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class.
 • Siemens cannot provide AutoCAD licenses, but can provide FactoryCAD temporary licenses as needed.

Course Description

WHO SHOULD ATTEND

Industrial engineers, manufacturing engineers, material handling engineers, factory layout specialists, architects involved in industrial facilities

PREREQUISITES

• Basic AutoCAD drawing and editing skills
• Basic computer knowledge is assumed
• Basic AutoCAD 3D viewing and modeling is recommended

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware with software and license loaded. Siemens cannot provide AutoCAD licenses, but can provide FactoryCAD temporary licenses as needed.

COURSE TOPICS

• Smart factory objects
• Creating an new facility layout
• Exporting a layout to a visualization program
• Layer organization and standards
• Creating generic tool objects
• Using the Factory Explorer and Factory libraries
• Importing tooling and product geometry
• Analyzing and documenting space use
• Animating within FactoryCAD
• Building custom parametric objects
• Converting 2D outlines to 3D objects
• Building systems from custom objects
• Querying drawing objects

Course Description

FactoryFLOW 2016.0

FactoryFLOW (G2H)

Course Code	TR7002-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **FactoryFLOW** course teaches students to analyze factory layouts by using part routing information, material handling equipment specifications, and part packing (containerization) information. Students learn to evaluate and optimize layouts based on material flow distances, move frequency, and cost. Students will rapidly evaluate alternative factory layouts by numerically and graphically comparing alternatives based on material flow. Students learn to gather the correct data, set up the FactoryFLOW data files, prepare the factory layout drawing for analysis, perform calculations, and interpret results.

Class can either be taught on-site or in a Siemens PLM classroom. If taught in a Siemens PLM classroom, the following conditions apply:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class.

WHO SHOULD ATTEND

 • Industrial, manufacturing and material handling engineers
 • Factory layout specialists
 • And architects involved in industrial facilities

PREREQUISITES

• Basic AutoCAD drawing and editing skills
• Basic computer knowledge is assumed

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

 • Procedures for basic FactoryFLOW calculations
 • Reviewing calculation results through charts and reports
 • Analyzing aisle congestion
 • Creating activity equations and templates
 • FactoryFLOW data structure
 • Setting up a layout drawing for analysis
 • Creating routes
 • Specifying material handling requirements
 • Importing and exporting data used by FactoryFLOW
 • Tugger routes - tugger utilization and route optimization
 • Creating daily tugger routes
 • Simplifying routes
 • Grouping activity points for optimizing activity point assignments
 • Packing containers in storage areas and trucks
 • Drawing operator walk paths
 • Using aisle objects and stop signs

Course Description

Requires use of customer's hardware with software and license loaded.

FactoryFLOW 2017.0

FactoryFLOW (G2H)

Course Code	TR7002-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **FactoryFLOW** course teaches students to analyze factory layouts by using part routing information, material handling equipment specifications, and part packing (containerization) information. Students learn to evaluate and optimize layouts based on material flow distances, move frequency, and cost. Students will rapidly evaluate alternative factory layouts by numerically and graphically comparing alternatives based on material flow. Students learn to gather the correct data, set up the FactoryFLOW data files, prepare the factory layout drawing for analysis, perform calculations, and interpret results.

Class can either be taught on-site or in a Siemens PLM classroom. If taught in a Siemens PLM classroom, the following conditions apply:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class.

WHO SHOULD ATTEND	COURSE TOPICS
• Industrial, manufacturing and material handling engineers • Factory layout specialists • And architects involved in industrial facilities	• Procedures for basic FactoryFLOW calculations • Reviewing calculation results through charts and reports • Analyzing aisle congestion • Creating activity equations and templates • FactoryFLOW data structure • Setting up a layout drawing for analysis • Creating routes • Specifying material handling requirements • Importing and exporting data used by FactoryFLOW • Tugger routes - tugger utilization and route optimization • Creating daily tugger routes • Simplifying routes • Grouping activity points for optimizing activity point assignments • Packing containers in storage areas and trucks • Drawing operator walk paths

PREREQUISITES
• Basic AutoCAD drawing and editing skills • Basic computer knowledge is assumed

PROVIDED COURSE MATERIAL
• Student Guide • Activity Material

Course Description

• Using aisle objects and stop signs

Requires use of customer's hardware with software and license loaded.

FactoryFLOW 2018.0

FactoryFLOW (G2H)

Course Code	TR7002-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **FactoryFLOW** course teaches students to analyze factory layouts by using part routing information, material handling equipment specifications, and part packing (containerization) information. Students learn to evaluate and optimize layouts based on material flow distances, move frequency, and cost. Students will rapidly evaluate alternative factory layouts by numerically and graphically comparing alternatives based on material flow. Students learn to gather the correct data, set up the FactoryFLOW data files, prepare the factory layout drawing for analysis, perform calculations, and interpret results.

Class can either be taught on-site or in a Siemens PLM classroom. If taught in a Siemens PLM classroom, the following conditions apply:
 • Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class.

WHO SHOULD ATTEND	COURSE TOPICS
• Industrial, manufacturing and material handling engineers • Factory layout specialists	• Procedures for basic FactoryFLOW calculations • Reviewing calculation results through charts and reports • Analyzing aisle congestion

Course Description

• And architects involved in industrial facilities

• Basic AutoCAD drawing and editing skills
• Basic computer knowledge is assumed

• Student Guide
• Activity Material

Requires use of customer's hardware with software and license loaded.

• Creating activity equations and templates
• FactoryFLOW data structure
• Setting up a layout drawing for analysis
• Creating routes
• Specifying material handling requirements
• Importing and exporting data used by FactoryFLOW
• Tugger routes - tugger utilization and route optimization
• Creating daily tugger routes
• Simplifying routes
• Grouping activity points for optimizing activity point assignments
• Packing containers in storage areas and trucks
• Drawing operator walk paths
• Using aisle objects and stop signs

Course Description

FactoryCAD 2016.0

In Context Editor (ICE) (G2H)

Course Code	TR7004-GH
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href="http://training.plm.automation.siemens.com/courses/guarantee.cfm">Here for more information about G2H
courses.</p>

<p>The In Context Editor (ICE) course covers basic procedures for using ICE to edit facility Bill of Materials
(BOM) structures and their attachments, especially AutoCAD drawings, within AutoCAD.</p>
<p>Notes:
This is not a replacement course for Teamcenter software training
</p>

<p>Class can either be taught on-site or in a Siemens PLM classroom. If taught in a Siemens PLM classroom, the following
conditions apply:

Students will be asked to bring their own hardware (laptop) with software and licenses loaded with them to class.
Siemens cannot provide AutoCAD licenses, but can provide FactoryCAD temporary licenses as needed.

WHO SHOULD ATTEND	COURSE TOPICS

Persons working with AutoCAD drawings that benefit
from structured organization, especially a structure and
drawings stored in Teamcenter. Industrial engineers,
manufacturing engineers, material handling engineers,
factory layout specialists, architects involved in
industrial facilities.

- In Context Editor (ICE) project elements
- Get drawings and structure into the database through ICE
- Manipulate content within ICE
- Work unconnected to the database
- Create a project independent of the database
- In Context Editor assessment

PREREQUISITES

- Basic AutoCAD drawing and editing skills
- Experience with one of the Teamcenter Manufacturing
applications: Manufacturing Process Planner, Multi-
Structure Manager, Plant Designer, Part Planner
- Basic computer knowledge is assumed

PROVIDED COURSE MATERIAL

Course Description

• Student Guide
• Activity Material

Camstar 6.0

Exploring Camstar Manufacturing (G2H)

Course Code	TR91000-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the out of the box objects to model the Camstar Manufacturing application, the transactions provided by Camstar to track production, and key capabilities to expand the basic model to provide material control, resource tracking, task processing, data collection, and more.

This course is the foundation and prerequisite for all courses in the Camstar Manufacturing curriculum.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND

Engineers, Designer or Developers responsible for configuring and maintaining the Factory Model

PREREQUISITES

None

COURSE TOPICS

Modeling

• Navigation in the Camstar Portal
• The Factory Information Model (Physical and Process)
• Camstar Tracking and Control Capabilities
• Workflow Modeling and alternate routes
• Users, Roles, and Permissions

Course Description

• Menu Structure
• User Codes and Object Groups
• Modeling Audit Trail

Transactions

• Navigation in the Camstar Portal
• The Shop Floor Execution Model
• Review of basic (most frequently used) transactions
• Transactions that change attributes or status of WIP
• Options for user centric work space
• Searching in Camstar
• Manufacturing Audit Trail

Expanding the model

• Bill of Materials and material control on the shop floor
• Bill of Process to establish overrides
• Work in Process Messages based on model attributes
• Viewing documents and collecting data
• Breakdown of work as tasks in task lists to define user specific electronic procedures
• Resource Tracking

Course Description

Camstar 7.0

Exploring Camstar Manufacturing (G2H)

Course Code	TR91000-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the out of the box objects to model the Camstar Manufacturing application, the transactions provided by Camstar to track production, and key capabilities to expand the basic model to provide material control, resource tracking, task processing, data collection, and more.

This course is the foundation and prerequisite for all courses in the Camstar Manufacturing curriculum.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Engineers, Designer or Developers responsible for configuring and maintaining the Factory Model

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

COURSE TOPICS

Modeling

• Navigation in the Camstar Portal
• The Factory Information Model (Physical and Process)
• Camstar Tracking and Control Capabilities
• Workflow Modeling and alternate routes
• Users, Roles, and Permissions
• Menu Structure
• User Codes and Object Groups
• Modeling Audit Trail

Transactions

• Navigation in the Camstar Portal
• The Shop Floor Execution Model
• Review of basic (most frequently used) transactions
• Transactions that change attributes or status of WIP
• Options for user centric work space

Course Description

• Searching in Camstar
• Manufacturing Audit Trail

Expanding the model

• Bill of Materials and material control on the shop floor
• Bill of Process to establish overrides
• Work in Process Messages based on model attributes
• Viewing documents and collecting data
• Breakdown of work as tasks in task lists to define user specific electronic procedures
• Resource Tracking

Course Description

Camstar 6.0

Exploring Camstar Feature Modules (G2H)

Course Code	TR91001-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Feature Modules are separately licensed features that fit on top of the base Camstar Manufacturing product to extend product capability and functionality. There are 5 licensed modules on Camstar Manufacturing taught in Instructor Led Format.

• Dispatch Management
• Electronic Signatures
• Label Printing
• Maintenance Management
• Operator Training & Certification

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Appropriate for project managers and sponsors who are not involved in the model configuration or shop floor execution. Also appropriate for all audiences, modelers responsible for configuration and users.

PREREQUISITES

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Part 1

 • Provides an overview and introduction to the licensed feature module. It is appropriate for project managers and sponsors who are not involved in the model configuration or shop floor execution. It is also appropriate for all audiences, modelers responsible for configuration and users.

Part 2

 • Introduces the objects that make up the feature and how they relate to the factory information model. Modeling sequence is described.

Part 3

• Describes the execution or transactions related to the feature module and how data is used by the system to manage or control shop floor activity.

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

Camstar 7.0

Exploring Camstar Feature Modules (G2H)

Course Code	TR91001-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Feature Modules are separately licensed features that fit on top of the base Camstar Manufacturing product to extend product capability and functionality. There are 5 licensed modules on Camstar Manufacturing taught in Instructor Led Format.

• Dispatch Management
• Electronic Signatures
• Label Printing
• Maintenance Management
• Operator Training & Certification

Notes:
• Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

Course Description

WHO SHOULD ATTEND

Appropriate for project managers and sponsors who are not involved in the model configuration or shop floor execution. Also appropriate for all audiences, modelers responsible for configuration and users.

PREREQUISITES

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

COURSE TOPICS

Part 1

 • Provides an overview and introduction to the licensed feature module. It is appropriate for project managers and sponsors who are not involved in the model configuration or shop floor execution. It is also appropriate for all audiences, modelers responsible for configuration and users.

Part 2

 • Introduces the objects that make up the feature and how they relate to the factory information model. Modeling sequence is described.

Part 3

 • Describes the execution or transactions related to the feature module and how data is used by the system to manage or control shop floor activity.

Course Description

Camstar 6.0

Object Design (G2H)

Course Code	TR91002-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the Camstar Object Model and use of the Designer Application to modify and extend the objects.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND

Appropriate for Designers and developers of the core implementation team with technical knowledge and understanding of object oriented concepts.

PREREQUISITES

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

or 6 months hands-on experience in Modeling.

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud

COURSE TOPICS

 • Review concepts of Object Design.
 • Understand relationships among classes using Unified Modeling Language (UML) diagrams.
 • Learn the functionality of Camstar Manufacturing Configurable Data Objects (CDOs) and Configurable Logic Flows (CLFs).
 • Perform various transactions within Camstar Manufacturing Designer.
 • Customize Camstar Manufacturing transactions.
 • Learn techniques for setting and retrieving field values.
 • Introduction to Camstar Unified Expression syntax (used by User Query, User Label, Business Rules, Auto-numbering, and other Camstar objects).

Course Description

service. Wireless internet connection will be provided.

Camstar 7.0

Object Design (G2H)

Course Code	TR91002-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the Camstar Object Model and use of the Designer Application to modify and extend the objects.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS

Appropriate for Designers and developers of the core implementation team with technical knowledge and understanding of object oriented concepts.

 • Review concepts of Object Design.
 • Understand relationships among classes using Unified Modeling Language (UML) diagrams.
 • Learn the functionality of Camstar Manufacturing Configurable Data Objects (CDOs) and Configurable Logic Flows (CLFs).
 • Perform various transactions within Camstar Manufacturing Designer.
 • Customize Camstar Manufacturing transactions.
 • Learn techniques for setting and retrieving field values.
 • Introduction to Camstar Unified Expression syntax (used by User Query, User Label, Business Rules, Auto-numbering, and other Camstar objects).

PREREQUISITES

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

or 6 months hands-on experience in Modeling.

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Course Description

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

Camstar 6.0

Portal Studio Developer (G2H)

Course Code	TR91003-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course expands on the User level training to introduce system developers to more advanced topics, controls, and page configurations. This class is the training portion of the User Interface Portal quickstart program.

Attendees will learn about the properties of page controls, how to correctly configure them to achieve the desired functionality, and how to apply these new concepts and skills to a real world example. Portal Studio Developer is the second in a series of classes available for Camstar customers and partners to learn the new technology and direction of the Camstar Enterprise Platform.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS
System Developers	• Labels
	• Grids
PREREQUISITES	• Pageflows
	• Field Expressions.
Required courses:	• Control properties
• Exploring Camstar Manufacturing (G2H) (TR91000)	• Data Contracts
	• Import/Export
PROVIDED COURSE MATERIAL	
• Student Guide	

Course Description

Camstar 7.0

Portal Studio Developer (G2H)

Course Code	TR91003-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course expands on the User level training to introduce system developers to more advanced topics, controls, and page configurations. This class is the training portion of the User Interface Portal quickstart program.

Attendees will learn about the properties of page controls, how to correctly configure them to achieve the desired functionality, and how to apply these new concepts and skills to a real world example. Portal Studio Developer is the second in a series of classes available for Camstar customers and partners to learn the new technology and direction of the Camstar Enterprise Platform.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS
System Developers	• Labels

WHO SHOULD ATTEND

System Developers

PREREQUISITES

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

COURSE TOPICS

• Labels
• Grids
• Pageflows
• Field Expressions.
• Control properties
• Data Contracts
• Import/Export

Course Description

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

Camstar 6.0

Exploring Semiconductor Suite (G2H)

Course Code	TR91005-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides basic understanding of the Camstar solution for Semiconductor Manufacturers. It is the starting point for the Semiconductor Suite curriculum and pre-requisite for all other courses.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	**COURSE TOPICS**
All members of the project implementation team.	• Semi Suite Overview – Factory Model, Process Model, Work Order & Schedule, Process Spec, WIP Processing, Equipment Processing and Access Control.

PREREQUISITES

None

 • Modeling Structure and Navigation
 • Base setup – Modeling Main, Modeling Matrix (Highest Matching Algorithm), Modeling Sequence and Initial Setup.
 • Inventory Tracking – Lot Start, Lot Create, Lot Form, Lot Receiving, Lot Move Inventory, Lot Ship, Lot Ship Cancel
 • Excel Spreadsheets for import of modeling data
 • Scheduling Transactions – Schedule, Preparation, Release,

PROVIDED COURSE MATERIAL

Course Description

• Student Guide

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

Modify. Navigation in Camstar Portal – User Interface
 • WIP Tracking – WIP Main, Move In, Track In, In Process Rejects, Track Out, Post Process Rejects, Move Out, WIP Data, Equipment Setup, Equipment Set Status, Equipment Materials Setup
 • Ad-Hoc Transactions – Hold, Further Hold, Release, Lot Modifications, Split, Combine, etc.
 • Electronic Procedures
 • Service Attributes

Course Description

Camstar 7.0

Exploring Semiconductor Suite (G2H)

Course Code	TR91005-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides basic understanding of the Camstar solution for Semiconductor Manufacturers. It is the starting point for the Semiconductor Suite curriculum and pre-requisite for all other courses.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS

All members of the project implementation team.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

COURSE TOPICS

 • Semi Suite Overview – Factory Model, Process Model, Work Order & Schedule, Process Spec, WIP Processing, Equipment Processing and Access Control.
 • Modeling Structure and Navigation
 • Base setup – Modeling Main, Modeling Matrix (Highest Matching Algorithm), Modeling Sequence and Initial Setup.
 • Inventory Tracking – Lot Start, Lot Create, Lot Form, Lot Receiving, Lot Move Inventory, Lot Ship, Lot Ship Cancel
 • Excel Spreadsheets for import of modeling data
 • Scheduling Transactions – Schedule, Preparation, Release, Modify. Navigation in Camstar Portal – User Interface
 • WIP Tracking – WIP Main, Move In, Track In, In Process Rejects, Track Out, Post Process Rejects, Move Out, WIP Data, Equipment Setup, Equipment Set Status, Equipment Materials Setup
 • Ad-Hoc Transactions – Hold, Further Hold, Release, Lot Modifications, Split, Combine, etc.
 • Electronic Procedures
 • Service Attributes

Course Description

Camstar 6.0

SPC for Semiconductor Suite (G2H)

Course Code	TR91006-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides basic understanding of the Camstar Semiconductor Suite SPC product offering. The student that completes this class will have an understanding of the modeling entities, modeling sequence and how Semiconductor Suite works with Statit to perform SPC on the data collected in Semiconductor Suite

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND

QA Engineers, Process/Process Integration Engineers and Product Engineers.

PREREQUISITES

Required courses:
 • Exploring Semiconductor Suite (G2H) (TR91005)

PROVIDED COURSE MATERIAL

 • Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

COURSE TOPICS

 • Semiconductor Suite SPC Overview – SPC Model, Execution and Architecture
 • Modeling sequence for data elements, data collections, charts, queries, connections and some Statit parameters
 • Developing queries to retrieve current data and historical data
 • Execution options: Track Out (before and after), Ad Hoc
 • Modeling for shop floor in-process checks and offline analysis
 • Configuring Data Collection Limits, Control Limits and Specification Limits; configuring dynamic Control Limits
 • SPC Records – Search, modify and re-plot of previous SPC executions

Course Description

Camstar 7.0

SPC for Semiconductor Suite (G2H)

Course Code	TR91006-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides basic understanding of the Camstar Semiconductor Suite SPC product offering. The student that completes this class will have an understanding of the modeling entities, modeling sequence and how Semiconductor Suite works with Statit to perform SPC on the data collected in Semiconductor Suite

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND

QA Engineers, Process/Process Integration Engineers and Product Engineers.

PREREQUISITES

Required courses:
 • Exploring Semiconductor Suite (G2H) (TR91005)

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

COURSE TOPICS

 • Semiconductor Suite SPC Overview – SPC Model, Execution and Architecture
 • Modeling sequence for data elements, data collections, charts, queries, connections and some Statit parameters
 • Developing queries to retrieve current data and historical data
 • Execution options: Track Out (before and after), Ad Hoc
 • Modeling for shop floor in-process checks and offline analysis
 • Configuring Data Collection Limits, Control Limits and Specification Limits; configuring dynamic Control Limits
 • SPC Records – Search, modify and re-plot of previous SPC executions

Course Description

Camstar 6.0

Semiconductor Features (G2H)

Course Code	TR91007-GH
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1.5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

There are several features of the Semiconductor Suite that may be taught in conjunction with the project kick off or as later phases of implementation. They have been formed as modules of training to allow for better sequencing and timing.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND

Equipment Engineers, Manufacturing Engineers or Production Supervisors.

PREREQUISITES

Required courses:
 • Exploring Semiconductor Suite (G2H) (TR91005)

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

COURSE TOPICS

 • The Maintenance Management course is designed to teach the methods to setup regular and/or conditional maintenance within Camstar Manufacturing for equipment (resource) associated with manufacturing process. Maintenance Management is licensed separately. This course and its labs can be taught in approximately   4 hours and is a supplemental course taught after Exploring Semiconductor Suite.
 • Job Control is capability of the Camstar Semiconductor Suite that tracks and controls processing setting-up and repairing a Resource. The system includes specific Job Transactions. This course and its labs can be taught in approximately 4 hours and is a supplemental course taught after Maintenance Management
 • Parts Management is capability provided with the Semiconductor Suite that extends the Maintenance Management capability to include consumable and reusable "parts" or sub-resource maintenance and requests. This course and its labs can be taught in approximately 4 hours and is a supplemental course taught after Maintenance Management.

Course Description

Camstar 7.0

Semiconductor Features (G2H)

Course Code	TR91007-GH
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1.5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

There are several features of the Semiconductor Suite that may be taught in conjunction with the project kick off or as later phases of implementation. They have been formed as modules of training to allow for better sequencing and timing.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND

Equipment Engineers, Manufacturing Engineers or Production Supervisors.

PREREQUISITES

Required courses:
 • Exploring Semiconductor Suite (G2H) (TR91005)

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

COURSE TOPICS

 • The Maintenance Management course is designed to teach the methods to setup regular and/or conditional maintenance within Camstar Manufacturing for equipment (resource) associated with manufacturing process. Maintenance Management is licensed separately. This course and its labs can be taught in approximately   4 hours and is a supplemental course taught after Exploring Semiconductor Suite.
 • Job Control is capability of the Camstar Semiconductor Suite that tracks and controls processing setting-up and repairing a Resource. The system includes specific Job Transactions. This course and its labs can be taught in approximately 4 hours and is a supplemental course taught after Maintenance Management
 • Parts Management is capability provided with the Semiconductor Suite that extends the Maintenance Management capability to include consumable and reusable "parts" or sub-resource maintenance and requests. This course and its labs can be taught in approximately 4 hours and is a supplemental course taught after Maintenance Management.

Course Description

Camstar 6.0

Nonconformance Management (G2H)

Course Code	TR91011-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the out of the box objects to model the Camstar Quality solution.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

QA Engineers, Process/Process Integration Engineers, Product Engineers Manufacturing Engineers or Production Supervisors.

PREREQUISITES

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

 and Exploring Camstar Quality – Modeling the Organization

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud

COURSE TOPICS

Modeling the Quality Organization

 • The Organization object, foundation of the quality model
 • Camstar Quality Control Capabilities
 • Required and optional modeling to support quality records creation and management

Modeling and Quality Record creation and management

 • This course covers the modeling components and the out of the box pages provided by Camstar to record and manage nonconformances in production. It covers the required and optional components for recording production events and the configurations to support managing quality data records from observation through investigation, root cause analysis, and disposition of affected materials.

Expanding the Quality Model

 • Additional Optional modeling objects used in the Quality Model are covered in this 4 hour course. It is generally taught after the licensed feature module (Nonconformance Management or

Event Management)
 • Topics include: Approval Routing, Triage, Business Rules, and Electronic Signatures

service. Wireless internet connection will be provided.

Camstar 7.0

Nonconformance Management (G2H)

Course Code	TR91011-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the out of the box objects to model the Camstar Quality solution.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS
QA Engineers, Process/Process Integration Engineers, Product Engineers Manufacturing Engineers or Production Supervisors.	Modeling the Quality Organization

QA Engineers, Process/Process Integration Engineers, Product Engineers Manufacturing Engineers or Production Supervisors.

Modeling the Quality Organization

 • The Organization object, foundation of the quality model
 • Camstar Quality Control Capabilities
 • Required and optional modeling to support quality records

PREREQUISITES

Course Description

creation and management

Modeling and Quality Record creation and management

 • This course covers the modeling components and the out of the box pages provided by Camstar to record and manage nonconformances in production. It covers the required and optional components for recording production events and the configurations to support managing quality data records from observation through investigation, root cause analysis, and disposition of affected materials.

Expanding the Quality Model

 • Additional Optional modeling objects used in the Quality Model are covered in this 4 hour course. It is generally taught after the licensed feature module (Nonconformance Management or Event Management)
 • Topics include: Approval Routing, Triage, Business Rules, and Electronic Signatures

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

 and Exploring Camstar Quality – Modeling the Organization

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

Course Description

Camstar 6.0

Event Management (G2H)

Course Code	TR91012-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the out of the box objects to model the Camstar Quality solution.

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND

QA Engineers, Process/Process Integration Engineers, Product Engineers Manufacturing Engineers or Production Supervisors.

PREREQUISITES

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

and Exploring Camstar Quality – Modeling the Organization

PROVIDED COURSE MATERIAL

• Student Guide

ATTENDANCE REQUIREMENTS

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud

COURSE TOPICS

Modeling the Quality Organization

 • The Organization object, foundation of the quality model
 • Camstar Quality Control Capabilities
 • Required and optional modeling to support quality records creation and management

Modeling and Quality Record creation and management

 • This course covers the modeling components and the out of the box pages provided by Camstar to record and manage generic quality events. It covers a generic model for recording any type of quality event and the configurations to support managing quality data records from observation through investigation, root cause analysis, and corrective action.

Expanding the Quality Model

 • Additional Optional modeling objects used in the Quality Model are covered in this 4 hour course. It is generally taught after the licensed feature module (Nonconformance Management or Event Management)

• Topics include: Approval Routing, Triage, Business Rules, and Electronic Signatures

service. Wireless internet connection will be provided.

Camstar 7.0
Event Management (G2H)

Course Code	TR91012-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This course provides a basic understanding of the out of the box objects to model the Camstar Quality solution.

Notes:
• Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS
QA Engineers, Process/Process Integration Engineers, Product Engineers Manufacturing Engineers or Production Supervisors.	Modeling the Quality Organization

QA Engineers, Process/Process Integration Engineers, Product Engineers Manufacturing Engineers or Production Supervisors.

PREREQUISITES

Modeling the Quality Organization

• The Organization object, foundation of the quality model
• Camstar Quality Control Capabilities
• Required and optional modeling to support quality records creation and management

Course Description

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000)

and Exploring Camstar Quality – Modeling the Organization

• Student Guide

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

Modeling and Quality Record creation and management

 • •This course covers the modeling components and the out of the box pages provided by Camstar to record and manage generic quality events. It covers a generic model for recording any type of quality event and the configurations to support managing quality data records from observation through investigation, root cause analysis, and corrective action.

Expanding the Quality Model

 • Additional Optional modeling objects used in the Quality Model are covered in this 4 hour course. It is generally taught after the licensed feature module (Nonconformance Management or Event Management)
 • Topics include: Approval Routing, Triage, Business Rules, and Electronic Signatures

Course Description

Camstar 7.0

Electronics Suite (G2H)

Course Code	TR91040-GH
User Level	Beginner
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2.5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Camstar Electronics Suite from Siemens is designed specifically for electronics manufacturing and is implemented as an extension to Siemens' Camstar Enterprise Platform (CEP).

The **Exploring Camstar Electronics Suite** course describes the purpose of Camstar Electronics Suite and contrasts the features of Camstar Electronics Suite to Base Camstar. The course identifies the key modeling requirements of Camstar Electronics Suite and explains how Electronics Suite can be used to support an electronics manufacturing process.

The following topics are included in the course:

 • Core Electronic Suite Modeling
 • New Product Information Jobs (NPI Job)
 • CIO NPI Job Adapter
 • PCB Order Dispatch
 • Using the Production Client
 • Managing Defects
 • Feeder Control
 • Tool Control
 • Manufacturing Line Verification

Notes:
 • Students will be asked to bring their own hardware (laptop) to class and they will access a training environment through our cloud service.

WHO SHOULD ATTEND	COURSE TOPICS
This course has been designed for individuals responsible for the configuration and maintenance of	The topics that will be covered include:

Course Description

Camstar Electronics Suite.

Required courses:
 • Exploring Camstar Manufacturing (G2H) (TR91000-GH)

Students should have sufficient exposure or formal training to the extent that they are able to configure Camstar Interoperability (CIO). Students should also have sufficient knowledge of Camstar Transaction Tester to execute scripts.

| PROVIDED COURSE MATERIAL |

• Student Guide

| ATTENDANCE REQUIREMENTS |

Requires use of customer's hardware. Siemens will provide access to software and license via our cloud service. Wireless internet connection will be provided.

• Core Electronic Suite Modeling
• New Product Information Jobs (NPI Job)
• CIO NPI Job Adapter
• PCB Order Dispatch
• Using the Production Client
• Managing Defects
• Feeder Control
• Tool Control
• Manufacturing Line Verification

Course Description

Simcenter Madymo 7.7

Simcenter Madymo Introduction

Course Code	TR94001
User Level	Beginner
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Madymo Introduction** training is designed for engineers and / or technicians having a solid base in mechanical engineering but with limited or no experience with Madymo modelling. By attending the training the trainee will get familiar with the set up of a Madymo input deck and will be able to handle exercises like dummy and belt positioning, definition of contacts, enabling the modelling of for example a sled test model.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• CAE Engineer (Passive Safety)

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Introduction to Madymo
• MB & Joint System
• Multi-Body Model
• Joint type
• MB-Joint System
• General Introduction Pre/post processor, Multi body modeling

Day 2

• Seat Belts
• Contacts
• Dummy Positioning
• Seat Belt Modeling

Day 3

• FE Modeling
• Contacts Definition
• Airbag Modeling

Course Description

Simcenter Madymo 7.7

Simcenter Madymo Advanced

Course Code	TR94002
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Madymo Advanced** is a three-day training combining the Airbag training, Coupling training, Contacts training and Human Model training. The precise content is determined based on the preferences of the registrants.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• CAE Engineer (Passive Safety)

PREREQUISITES

Required courses:
• Simcenter Madymo Introduction (TR94001)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Introduction to Airbags

Day 2

• Introduction to Couplings
• Introduction to Contacts

Day 3

• Introduction to Human Modeling

Course Description

Simcenter Madymo 7.7

Simcenter Madymo Airbag

Course Code	TR94003
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Madymo Airbag** training is designed for experienced users with Madymo. By attending the training the user will get familiar with airbag modelling. The knowledge gained will enable the user to model airbags in more detail and will give him more theoretical background for accurate and correct airbag modelling.

WHO SHOULD ATTEND	COURSE TOPICS

• CAE Engineer (Passive Safety)

Day1

PREREQUISITES

• Introduction to Airbags

Required courses:
• Simcenter Madymo Introduction (TR94001)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter Madymo 7.7

Simcenter Madymo Contacts

Course Code	TR94004
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Madymo Contacts** course is designed for engineers with basic knowledge of and experience with Madymo modelling. The contacts training provides an overview of the different contact types and their working principles. At the end of the training the user will be able to choose the best suitable contact type for its application and will be able to derive the requested input for that contact definition.

WHO SHOULD ATTEND	COURSE TOPICS

• CAE Engineer (Passive Safety)

Day1

PREREQUISITES

Required courses:
• Simcenter Madymo Introduction (TR94001)

• Introduction to Contacts

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Simcenter Madymo 7.7

Simcenter Madymo Coupling

Course Code	TR94005
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Madymo Coupling** training is designed for users of Finite Element software LS/MPP Dyna, Pam Crash, Radioss and Abaqus and little or no experience with Madymo. The training provides a solid base for how to use the coupling between Madymo and our FE partners to use MADYMO dummy models in a finite element environment. The training also demonstrates how coupled input decks are created with the Madymo/Workspace Coupling Assistant.

WHO SHOULD ATTEND	COURSE TOPICS

• CAE Engineer (Passive Safety)

Day1

PREREQUISITES

• Introduction to Coupling

Required courses:
• Simcenter Madymo Introduction (TR94001)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 12.0

NX Customization and Programming using NX Open API (G2H)

Course Code	TRCT1205-GH
User Level	Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **NX Customization and Programming using NX Open API** course, an exclusive offering through our partner Maya Heat Transfer Technologies, introduces students to the NX Open Application Programming Interface (API) and its entire collection of toolkits. This course teaches the basics of interfacing with the Common API through Visual Basic.NET, C#, C/C++, Python and Java. Journaling and ribbon bar customization are also covered. The course includes hands-on lab time for an enhanced learning experience.

WHO SHOULD ATTEND

Application developers interested in creating NX Open API programs

PREREQUISITES

Required courses:
 • Basic Design (TR10053-TC)

Or
 • NX CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

 • Understanding navigating the common API
 • Using the journal tool
 • Turning journals into applications
 • Building seamless custom dialogs
 • Understanding and making effective use of User Defined Objects
 • Understanding runtime license control
 • Compiling Visual Basic.NET, C#, C/C++ and Java Open API programs

Course Description

NX 12.0

NX Customization and Programming using NX Open API (G2H)

Course Code: TRCT1205
User Level: Intermediate
Language: Spanish
Price: $900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration: 3 Days

For More Information: Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <b> (G2H) garantizado para mantener </ b>. Seleccione Aquí para obtener más información acerca de los cursos G2H. </ P>

<p> El <b> Programación y personalización de NX usando la API abierta de NX </ b>, una <u> oferta exclusiva a través de nuestro socio Maya Heat Transfer Technologies </ u>, presenta a los estudiantes la Interfaz de programación de aplicaciones abiertas de NX (API)) y toda su colección de kits de herramientas. Este curso enseña los conceptos básicos de la interfaz con la API común a través de Visual Basic.NET, C #, C / C ++, Python y Java. El diario y la personalización de la barra de cinta

WHO SHOULD ATTEND	COURSE TOPICS

<p> Desarrolladores de aplicaciones interesados en crear programas NX Open API </ p>

PREREQUISITES

<P>Required courses:</P> (TR10053-TC)
<P><b> O </ b>

  Procesos básicos de NX CAD (TRCT2215) </ li>
</ ul>
<b> O </ b>

 Finalización exitosa del Asesor de diseño básico en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden utilizar para prepararse para la evaluación de requisitos previos. </ Li>
</ ul>

El estudiante debe tener un conocimiento básico de modelado y NX y conocimiento práctico de uno de los siguientes: Visual Studio, Visual Basic.NET, C #, C / C ++, Python o Java.

• Understanding navigating the common API
• Using the journal tool
• Turning journals into applications
• Building seamless custom dialogs
• Understanding and making effective use of User Defined Objects
• Understanding runtime license control
• Compiling Visual Basic.NET, C#, C/C++ and Java Open API programs

Course Description

• Student Guide
• Activity Material

Teamcenter Visualization 11.2

Visualization (Vis) Variation Analysis (G2H)

Course Code	TRCT2030-GH
User Level	Beginner
Language	English
Price	$5,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Vis Variation Analysis (VA), an exclusive offering by the Siemens US Training team, is designed for users who have no 3D modeling experience. Students discover the thought process and philosophy behind 3D modeling, how to build a model, run simulations, debug and verify and then how to interpret the results. Both basic and advanced modeling techniques are included.

Students also receive a hands-on overview of Teamcenter Visualization functionality as it pertains to the utilization of VA operating within Visualization Mockup. In addition students are taught how to model and analyze an assembly of moderate complexity and interpret the 3D results using VA functionality.

WHO SHOULD ATTEND

Engineers and designers involved in applying dimensional management to parts and assemblies

PREREQUISITES

• Knowledge of geometric dimensioning and tolerancing
• Basic computer knowledge is assumed

PROVIDED COURSE MATERIAL

COURSE TOPICS

• Navigating within VA
• Results and Reports
• Feature and Tolerance Creation
• Defining Assembly and Measurement Ops
• "What-If" Scenarios
• Create Simple Process Document
• Common Process Model

Course Description

• Student Guide
• Activity Material

Teamcenter Visualization 11.4

Visualization (Vis) Variation Analysis (G2H)

Course Code	TRCT2030-GH
User Level	Beginner
Language	English
Price	$5,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Vis Variation Analysis (VA), an exclusive offering by the Siemens US Training team, is designed for users who have no 3D modeling experience. Students discover the thought process and philosophy behind 3D modeling, how to build a model, run simulations, debug and verify and then how to interpret the results. Both basic and advanced modeling techniques are included.

Students also receive a hands-on overview of Teamcenter Visualization functionality as it pertains to the utilization of VA operating within Visualization Mockup. In addition students are taught how to model and analyze an assembly of moderate complexity and interpret the 3D results using VA functionality.

WHO SHOULD ATTEND	COURSE TOPICS

Engineers and designers involved in applying dimensional management to parts and assemblies

• Navigating within VA
• Results and Reports
• Feature and Tolerance Creation
• Defining Assembly and Measurement Ops
• "What-If" Scenarios
• Create Simple Process Document
• Common Process Model

PREREQUISITES

• Knowledge of geometric dimensioning and tolerancing
• Basic computer knowledge is assumed

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Active Workspace 3.4

Active Workspace Installation and System Administration

Course Code	TRCT2090
User Level	Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Active Workspace Installation and System Administration** course will cover the installation and upgrade of Active Workspace. Discussions will cover infrastructure, installation, patching, and administrative responsibilities needed to maintain a Teamcenter environment utilizing Active Workspace.

This course is compatible with Active Workspace versions 3.3 and 3.4.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Teamcenter Application Administrators
• Data Model Administrators
• System Administrators

PREREQUISITES

Required courses:
• Installation (TR25350)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

COURSE TOPICS

Day 01

• Introduction and Course Overview
• AWC Installation Overview
• AWC Server Extensions
• AWC Client Installation

Day 02

• AWC Indexer Installation
• AWC Visualization Installation

Day 03

• NX Integration
• Patching and Upgrading AWC
• AWC Development Environment Installation

Course Description

The course is developed against Teamcenter 11.4.

Active Workspace 3.4

Active Workspace Customization and Configuration
For Application Administrators, and Developers

Course Code	TRCT2091
User Level	Intermediate to Advanced
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Active Workspace Customization and Configuration** course will help Active Workspace administrators and developers learn how to customize and configure Active Workspace. Students will be shown how to configure Tile Configurations for various scopes and define Tiles to perform a variety of functionality. A strong emphasis on modifying the look and feel of the client will be reviewed; including (custom themes, CSS layout configurations, message notifications, and icon configuration). The course will explore an in-depth look at the declarative approach for customizing the Active Workspace interface.

Students will also work within the Business Modeler IDE to control the visibility of commands and control Indexing settings for data model objects. In the class, students will explore Style sheet (XRT) enhancements and capabilities utilizing custom tags and Angular JS, as well as, work with an Visual Studio Code to setup a development environment for easy debugging. An overview of customizing the TcFTSIndexer to index additional object types, both internal and external, will also be coved.

WHO SHOULD ATTEND	COURSE TOPICS

Active Workspace administrators and customizers

• Course Overview & Introduction

PREREQUISITES

• Gateway Tiles

Required courses:
 • Using Active Workspace (TRCT2360)
 • Business Modeler Administration (TRCT2455)

• Active Workspace Icons

Or
 • Successful completion of the Application and Data
Model Administration Advisor in Learning Advantage
(score >70%). Learning Advantage courses can also be
used to prepare for the prerequisite advisor. (**Application
Administration** and **Data Model Administration** self-
paced course)

• Indexing

• Active Workspace Style Sheets

• Intro to Declarative and GWT Customization

 • Teamcenter Customization ([TR25540](TR25540))

Course Description

• CSS Modules

• Custom Themes

• Declarative Components: Commands, Locations, Sub-locations

• Student Guide
• Activity Material

• Course Summary

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

The course is developed against Teamcenter 11.4.

Course Description

Active Workspace 4.1

Configuring and Customizing Active Workspace

For Application Administrators, and Developers

Course Code	TRCT2091
User Level	Intermediate to Advanced
Language	English
Price	$2,400.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Configuring and Customizing Active Workspace** course will help Active Workspace administrators and developers get started learning how to configure and customize Active Workspace. Students will be shown how to configure tiles, setup and manage preferences, and configure table columns. In addition to the configuration tasks, students will learn how to develop style sheets, setup a client development environment, and use declarative customization to build customizations that will update the client.

NOTE: This class is compatible with Active Workspace 4.1 with limited backwards compatibility for 3.1+ versions.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Application Administrators
• Developers, or customizers

PREREQUISITES

Required courses:
• Using Active Workspace (TRCT2360)

AND
• Familiarity with basic Windows operating system commands.
• Familiarity with programming core concepts.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

COURSE TOPICS

Day 01

• Course Overview

• Configuring tiles

• Managing preferences

Day 02

• Managing groups, roles, and users

• Configuring table columns

• Configuring style sheets

Day 03

• Configuring style sheets continued...

• Understanding declarative customization

Course Description

• Setting up the client development environment

Day 04

• Declarative examples

• Course Summary

The course is developed against Teamcenter 12.1

Course Description

NX 11.0

CAD Mold Wizard Fundamental Processes (G2H)

Course Code	TRCT2111-GH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Through the **Mold Wizard Fundamental Processes** course, an exclusive offering by the Siemens US Training team, expert NX tool designers will acquire the skills to significantly reduce mold design lead time using **Mold Wizard** automation. The curriculum mimics common tasks used in mold construction and is reinforced using hands-on activities.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Plastic injection mold designers & product design engineers who create plastic injection mold tooling using the Mold Wizard software application.

PREREQUISITES

Required courses:
 • CAD Advanced Processes (TRCT2220-TC)

Or
 • CAD FastStart for Experienced 3D CAD Users
(TRCT2210-TC)

Or
 • Or successful completion of **Intermediate Design and Assemblies Advisor** on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.

 • Have a basic understanding of plastic injection mold design

 • Working knowledge of NX Assemblies and interpart modeling

COURSE TOPICS

Day 1

 • Validating parts and using EasyFill
 • Beginning a mold design project
 • Creating moldable features that are retained after product updates
 • Planning a mold cavity layout

Day 2

 • Creating parting surfaces and shut-off geometry
 • Using parting tools to split core and cavity models
 • Defining mold bases using libraries

Day 3

 • Adding ejector pins, core pins, sub-inserts, and hardware using the Standard Parts Library
 • Designing cooling circuits
 • Cutting mold base pockets using standard parts
 • Defining a Bill of Material and an assembly drawing
 • Optional: Creating a family mold

Course Description

NX 11.0

CAD Mold Wizard Fundamental Processes

Course Code	TRCT2111
User Level	Intermediate to Advanced
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> A través del curso <strong> Mold Wizard Fundamental Processes </ strong>, una oferta exclusiva de <u> el equipo de formación de Siemens US </ u>, los expertos en herramientas NX adquirirán las habilidades necesarias para reducir significativamente el tiempo de diseño del molde utilizando la automatización <strong> Mold Wizard </ strong>. El plan de estudios imita las tareas comunes utilizadas en la construcción del molde y se refuerza mediante actividades prácticas. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 Diseñadores de moldes de inyección de plástico y ingenieros de diseño de productos que crean herramientas de moldeo por inyección de plástico utilizando la aplicación de software Mould Wizard. </ li>
</ ul>

PREREQUISITES

<P>Required courses:</P>
CAD Advanced Processes (TRCT2220-TC)
<P><b> O </ b>

  NX CAD FastStart para usuarios experimentados de CAD en 3D (TRCT2210-TC) </ li>

COURSE TOPICS

Day 1

 • Validating parts and using EasyFill
 • Beginning a mold design project
 • Creating moldable features that are retained after product updates
 • Planning a mold cavity layout

Day 2

 • Creating parting surfaces and shut-off geometry
 • Using parting tools to split core and cavity models
 • Defining mold bases using libraries

Day 3

 • Adding ejector pins, core pins, sub-inserts, and hardware using the Standard Parts Library
 • Designing cooling circuits

• Cutting mold base pockets using standard parts
• Defining a Bill of Material and an assembly drawing
• Optional: Creating a family mold

<b> O </ b>

 O la finalización exitosa de la evaluación de requisitos previos del Diseño Intermedio y Asambleas en la Ventaja de Aprendizaje (calificación> 70%). Los cursos de Learning Advantage también pueden usarse para prepararse para las evaluaciones previas. </ Li>
</ ul>

<p> Otros requisitos: </ p>
 Tener una comprensión básica del diseño del molde de inyección de plástico </ li>
</ ul>

<p> Otras recomendaciones: </ p>
 Conocimiento práctico de los ensamblados de NX y el modelado entre partes </ li>
 <a href="http://training.plm.automation.siemens.com/courses/iltdescription.cfm?pID=TRCT2225-TC___NX___10.0___5000" target="_blank"> Procesos de modelado de superficie NX CAD </ a > (TRCT2225-TC) </ li>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 11.0

CAD Mold Wizard Advanced Processes (G2H)

Course Code	TRCT2112-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Mold Wizard Advanced Processes** course, an exclusive offering by the Siemens US Training team, is designed to advance students further up the productivity curve. As a second tier course, this advanced course builds upon the tools you deployed as a result of attending the **Mold Wizard Fundamental Processes** course. Expert NX tool designers will acquire the skills to significantly reduce mold design lead time using **Mold Wizard** automation. This course will also focus on customizing the existing catalog libraries to match your company's standards, adding new libraries, and configuring various templates within the Mold Wizard application. The curriculum mimics common tasks used in mold construction and is reinforced using hands-on activities.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • Mold designers
 • CAD/CAM System administrators
 • Experienced Mold Wizard users who want to learn how to customize the Mold Wizard software application

PREREQUISITES

Required courses:
 • CAD Mold Wizard Fundamental Processes (G2H) (TRCT2111-GH)

Other recommendations:

 • Working knowledge of NX Assemblies and interpart expressions
 • Experience using Microsoft Excel spreadsheets is highly recommended

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

 • Creating complex shut-off geometry using Mold Tools
 • Merging cavities to create a mold with multiple impressions
 • Adding cooling components using the Standard Part Library
 • Designing cold-fill gate and runner systems

Day 2

 • Freezing and managing interpart links when making design changes
 • Defining sub-inserts with mounting provisions
 • Building and managing tooling changeovers for a mold project
 • Simulating the motion of a mold
 • Creating component drawings with hole tables

Day 3

 • Configuring Mold Wizard project templates
 • Customizing the Material Library
 • Adding new mold components to the Standard Parts Library
 • Registering a new mold base in the Mold Base Library
 • Customizing assembly and component drawing templates

Course Description

NX 11.0

CAD Mold Wizard Advanced Processes

Course Code	TRCT2112
User Level	Advanced
Language	Spanish
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> El curso <strong> Procesos avanzados del asistente para moldes </ strong>, una oferta exclusiva de <u> del equipo de formación de Siemens US </ u>, está diseñado para hacer avanzar a los estudiantes en la curva de productividad. Como curso de segundo nivel, este curso avanzado se basa en las herramientas que implementó como resultado de asistir al curso <strong> Procesos Fundamentales del Asistente para Moldes </ strong>. Los diseñadores de herramientas NX expertos adquirirán las habilidades necesarias para reducir significativamente el tiempo de ejecución del diseño del molde utilizando la automatización <strong> Asistente para moldes </ strong>. Este curso también se centrará en la personalización de las bibliotecas de catálogos existentes para que se adapten a los estándares de su empresa, a la adición de nuevas bibliotecas ya la configuración de varias plantillas dentro de la aplicación Mould Wizard. El plan de estudios imita las tareas comunes utilizadas en la construcción del molde y se refuerza mediante actividades prácticas. </ P>

WHO SHOULD ATTEND

 Diseñadores de moldes </ li>
 Administradores de sistemas CAD / CAM </ li>
 Experiencia de los usuarios de Mould Wizard que desean aprender a personalizar la aplicación de software de Mould Wizard </ li>
</ ul>

PREREQUISITES

<P>Required courses:</P>
CAD Mold Wizard Fundamental Processes (TRCT2111)
<P><p> Otras recomendaciones: </ p>

 Conocimiento práctico de los ensamblados NX y las expresiones entre partes </ li>
 La experiencia con hojas de cálculo de Microsoft Excel es muy recomendable </ li>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Creating complex shut-off geometry using Mold Tools
• Merging cavities to create a mold with multiple impressions
• Adding cooling components using the Standard Part Library
• Designing cold-fill gate and runner systems

Day 2

• Freezing and managing interpart links when making design changes
• Defining sub-inserts with mounting provisions
• Building and managing tooling changeovers for a mold project
• Simulating the motion of a mold
• Creating component drawings with hole tables

Day 3

• Configuring Mold Wizard project templates
• Customizing the Material Library
• Adding new mold components to the Standard Parts Library
• Registering a new mold base in the Mold Base Library
• Customizing assembly and component drawing templates

Course Description

NX 11.0

NX CMM Inspection Programming (G2H)

Course Code	TRCT2150-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

NX CMM Inspection Programming, an exclusive offering by the Siemens US Training team, will instruct the student on the basics of NX CMM Inspection programming. It will cover creating inspection setups, defining probes, defining inspection features, creating inspection paths, and creating DMIS output files. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Consume and modify Product Manufacturing Information (PMI) created during upstream
processes.
 • Create inspection programs that will be used to qualify the finished manufactured part to the NX
Master Model.
 • Simulate your inspection program using Integrated Simulation and Verification (ISV).
 • Output your inspection program to the Dimensional Measurement Interface Standard (DMIS).
 • Analyze the CMM measurement results and compare them to the Master Model.

WHO SHOULD ATTEND	COURSE TOPICS

• CMM Inspection Programmers

PREREQUISITES

<P>Required courses:</P>
CAD Model Based
Definition using PMI (G2H)
(TRCT2345)
<P>
Other
requirements:
Working knowledge of the NX interface and
Assemblies
Knowledge of GD&T
Experience with CMM measurement strategies

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Day 1

 • Getting started with NX CMM environment setup
 • Introduction to the Inspection interface
 • Display PMI data
 • Build an inspection setup assembly
 • Create inspection paths using PMI
 • Part alignment

Day 2

 • Create inspection features
 • Define tolerance information
 • Create constructed features
 • Define and calibrate probes
 • Analysis of inspection results

Course Description

This course was written against NX 11.0.1

Teamcenter 10.1

Site Consolidation (G2H)

Course Code	TRCT2185-GH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Site Consolidation** course, an exclusive offering by the Siemens US Training team, will cover the core tools required for consolidation of Teamcenter Unified Architecture databases. Implementation style business scenarios are covered to ensure the proper site reduction steps are taken to allow for minimal downtime during consolidations.

NOTE: This class does not cover Enterprise to UA consolidations.

This course is required to receive an access key. This is the same access key for both Site Consolidation and Data Migration using Bulk Loader Solutions courses

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• System Administrators
• Migration Administrators

PREREQUISITES

Required courses:
 • Business Modeler Administration (TRCT2455)
 • Managing PLMXML/TCXML Transfer Modes (TR200ES16L)

Or
 • Both of the Business Modeler Administration (TRCT2455) and Managing PLMXML/TCXML Transfer Modes (TR200ES16L) can be completed by successful completion of the Application and Data Model

COURSE TOPICS

Day 01

 • Introduction and Course Overview
 • Site Consolidation Overview
 • Preparation and data analysis with reporting against data: Preparation Phase

Day 02

 • Moving Data from site to site: Execution Phase

Day 03

 • Moving Data from site to site: Execution Phase Continued...

Course Description

 • Handling old sites, ODS cleanup and Volume data: Cleanup Phase

>70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Application Administration** and **Data Model Administration** self-paced course)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Learning Advantage account provided with access to activity files

NX 10.0

CAD Fundamental Processes

With Teamcenter Integration

Course Code	TRCT2205-TC
User Level	Beginner
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment.

Fundamental Processes, an exclusive offering by the Siemens US Training team, covers the essential NX task-based processes that new users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Fundamental Processes** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and edit parametric part models
 • Create and modify basic assembly structures

Course Description

• Modify imported model data
• Create and modify basic drawings

WHO SHOULD ATTEND

• Engineers, designers, detailers, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

COURSE TOPICS

Day 1

• Overview of Teamcenter with NX integration
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts

Day 2

• Adding basic design and detail features to parts
• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Controlling design intent and using equations

Day 3

• Editing and revising a part
• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 4

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Using Synchronous Modeling to modify imported model data

Day 5

• Building and constraining assembly structures
• Creating basic part drawings

Course Description

NX 10.0
NX CAD Fundamental Processes
With Teamcenter Integration

Course Code	TRCT2205-TC
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Este curso se imparte en el entorno de integración de Teamcenter. </ Strong> </ p>
<P> <strong> Procesos fundamentales </ strong>, una oferta exclusiva del equipo de formación de Siemens US, cubre los procesos basados en tareas NX fundamentales que los nuevos usuarios utilizarán al crear y editar piezas paramétricas. La experiencia del mundo real de los instructores de Siemens ayuda a los estudiantes en la transferencia de conocimientos adquiridos a través de este curso único a su trabajo, resultando en un tiempo más rápido a la productividad. </ P>
<P> Al finalizar la clase <strong> Fundamental Processes </ strong>, el alumno será capaz de desarrollar modelos paramétricos sólidos y de ensamblaje, así como dibujos utilizando el concepto de modelo maestro. Estos conceptos pueden aplicarse en el mundo real del desarrollo y la colaboración de productos. Como resultado, los profesionales de Siemens PLM Software, esta clase refuerza nuestro profundo conocimiento de las capacidades de software e instruye a los estudiantes sobre la base de los principios subyacentes incorporados dentro de la suite de productos NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente: </ p>
<Ul>
<Li> Abrir y examinar modelos NX </ li>
<Li> Crear y editar modelos de piezas paramétricas </ li>
<Li> Crear y modificar estructuras básicas de montaje </ li>
<Li> Modificar datos de modelo importados </ li>
<Li> Crear y modificar dibujos básicos </ li>
</ Ul>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros, diseñadores, detallistas, inspectores y administradores que necesitan administrar y usar NX.
</ Li>
</ Ul>

PREREQUISITES

<P><P> Ninguno </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

<P> Para las clases <b> LIVE! </ B>, los clientes deben

COURSE TOPICS

Day 1

• Overview of Teamcenter with NX integration
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts

Day 2

• Adding basic design and detail features to parts
• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Controlling design intent and using equations

Day 3

• Editing and revising a part

Course Description

• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 4

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Using Synchronous Modeling to modify imported model data

Day 5

tener instalado NX 10. </ p>

• Building and constraining assembly structures
• Creating basic part drawings

Course Description

NX 11.0

CAD Fundamental Processes
With Teamcenter Integration using Active Workspace

Course Code	TRCT2205-TC
User Level	Beginner
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

Fundamental Processes, an exclusive offering by the Siemens US Training team, covers the essential NX task-based processes that new users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Fundamental Processes** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and edit parametric part models
 • Create and modify basic assembly structures
 • Modify imported model data
 • Create and modify basic drawings

WHO SHOULD ATTEND

 • Engineers, designers, detailers, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

Day 1

 • Overview of Active Workspace with NX
 • Sketching and extruding simple shapes
 • Creating and constraining sketch profiles
 • Revolving cylindrical parts

Day 2

 • Adding basic design and detail features to parts
 • Analyzing the history and properties of a model
 • Opening and analyzing an assembly structure
 • Controlling design intent and using equations

Day 3

Course Description

• Editing and revising a part
• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 4

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Using Synchronous Modeling to modify imported model data

This course was written against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

Day 5

• Building and constraining assembly structures
• Creating basic part drawings

Course Description

NX 11.0

NX CAD Fundamental Processes
With Teamcenter Integration using Active Workspace

Course Code	TRCT2205-TC
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<P> <strong> Este curso se imparte en el entorno de integración de Teamcenter utilizando el espacio de trabajo activo incorporado en NX. </ Strong> </ p>

<P> <strong> Procesos Fundamentales </ strong>, una oferta exclusiva del equipo de formación de Siemens US </ u>, cubre los procesos basados en tareas NX esenciales que los nuevos usuarios utilizarán al crear y editar piezas paramétricas. La experiencia del mundo real de los instructores de Siemens ayuda a los estudiantes en la transferencia de conocimientos adquiridos a través de este curso único a su trabajo, resultando en un tiempo más rápido a la productividad. </ P>

<P> Al finalizar la clase <strong> Fundamental Processes </ strong>, el alumno será capaz de desarrollar modelos paramétricos sólidos y de ensamblaje, así como dibujos utilizando el concepto de modelo maestro. Estos conceptos pueden aplicarse en el mundo real del desarrollo y la colaboración de productos. Como con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza nuestro profundo conocimiento de las capacidades del software e instruye a los estudiantes sobre la base de los principios subyacentes incorporados en la suite de productos NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente: </ p>

<Ul>
<Li> Abrir y examinar modelos NX </ li>
<Li> Crear y editar modelos de piezas paramétricas </ li>
<Li> Crear y modificar estructuras básicas de ensamblaje </ li>
<Li> Modificar datos de modelo importados </ li>
<Li> Crear y modificar dibujos básicos </ li>
</ Ul>

WHO SHOULD ATTEND

<Ul>
<Li> Ingenieros, diseñadores, detallistas, inspectores y administradores que necesitan administrar y usar NX.
</ Li>
</ Ul>

PREREQUISITES

<P><P> Ninguno </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

Day 1

• Overview of Active Workspace with NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts

Day 2

• Adding basic design and detail features to parts
• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Controlling design intent and using equations

Day 3

Course Description

• Editing and revising a part
• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 4

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Using Synchronous Modeling to modify imported model data

Day 5

• Building and constraining assembly structures
• Creating basic part drawings

<B> Este curso fue escrito en contra de NX 11.0.1 </ b>
<P> Para las clases <b> LIVE! </ B>, los clientes deben tener NX 11.0.1 instalado. </ P>

Course Description

NX 12.0

CAD Fundamental Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2205-TC
User Level	Beginner
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

Fundamental Processes covers the essential NX task-based processes that new users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

At the completion of the **Fundamental Processes** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Open and examine NX models
• Create and edit parametric part models
• Create and modify basic assembly structures
• Modify imported model data
• Create and modify basic drawings

WHO SHOULD ATTEND

• Engineers, designers, detailers, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

Day 1

• Overview of Active Workspace with NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts

Day 2

• Adding basic design and detail features to parts
• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Controlling design intent and using equations

Day 3

Course Description

• Editing and revising a part
• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 4

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Using Synchronous Modeling to modify imported model data

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Day 5

• Building and constraining assembly structures
• Creating basic part drawings

Course Description

NX 12.0

CAD Fundamental Processes
With Teamcenter Integration using Active Workspace

Course Code	TRCT2205-TC
User Level	Beginner
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

Este curso se imparte en el entorno de integración de Teamcenter utilizando Active Workspace integrado en NX.

Procesos fundamentales cubre los procesos esenciales basados en tareas de NX que los nuevos usuarios utilizarán al crear y editar partes paramétricas. La experiencia del mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este curso único a su trabajo, lo que resulta en un tiempo más rápido para la productividad.

Al finalizar la clase **Procesos fundamentales**, el estudiante podrá desarrollar modelos de ensamblaje y sólidos paramétricos, así como dibujos utilizando el concepto de modelo maestro. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por profesionales de Siemens PLM Software, esta clase refuerza nuestro profundo conocimiento de las capacidades del software e instruye a los estudiantes sobre la base de los principios subyacentes incorporados en la suite de productos NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente:

- Abre y examina los modelos NX
- Crear y editar modelos de piezas paramétricas
- Crear y modificar estructuras de ensamblaje básicas
- Modificar los datos del modelo importado
- Crea y modifica dibujos básicos

WHO SHOULD ATTEND

• Engineers, designers, detailers, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

COURSE TOPICS

Day 1

- Overview of Active Workspace with NX
- Sketching and extruding simple shapes
- Creating and constraining sketch profiles
- Revolving cylindrical parts

Day 2

- Adding basic design and detail features to parts
- Analyzing the history and properties of a model
- Opening and analyzing an assembly structure
- Controlling design intent and using equations

Day 3

Course Description

- Editing and revising a part
- Creating parts defined by a wall thickness
- Modeling molded and cast parts

Day 4

- Sweeping geometry to define parts
- Building parts with duplicate geometry
- Using Synchronous Modeling to modify imported model data

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Day 5

- Building and constraining assembly structures
- Creating basic part drawings

Course Description

NX 1847

CAD Fundamental Processes
With Teamcenter Integration using Active Workspace

Course Code	TRCT2205-TC
User Level	Beginner
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

Fundamental Processes covers the essential NX task-based processes that new users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Fundamental Processes** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and edit parametric part models
 • Create and modify basic assembly structures
 • Modify imported model data
 • Create and modify basic drawings

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • Engineers, designers, detailers, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

COURSE TOPICS

Day 1

 • Overview of Active Workspace with NX
 • Sketching and extruding simple shapes
 • Creating and constraining sketch profiles
 • Revolving cylindrical parts

Day 2

 • Adding basic design and detail features to parts
 • Analyzing the history and properties of a model
 • Opening and analyzing an assembly structure
 • Controlling design intent and using equations

Day 3

• Editing and revising a part
• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 4

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Using Synchronous Modeling to modify imported model data

Day 5

• Building and constraining assembly structures
• Creating basic part drawings

Course Description

NX 12.0
CAD Fundamental Processes

Course Code	TRCT2205
User Level	Beginner
Language	Portuguese
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Fundamental Processes covers the essential NX task-based processes that new users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Fundamental Processes** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Open and examine NX models
• Create and edit parametric part models
• Create and modify basic assembly structures
• Modify imported model data
• Create and modify basic drawings

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • Engineers, designers, detailers, checkers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 12.0.1

COURSE TOPICS

Day 1

• Overview of NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts

Day 2

• Adding basic design and detail features to parts
• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Controlling design intent and using equations

Day 3

• Editing and revising a part

Course Description

• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 4

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Using Synchronous Modeling to modify imported model data

Day 5

For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

• Building and constraining assembly structures
• Creating basic part drawings

Course Description

NX 10.0

CAD FastStart for Experienced 3D CAD Users
With Teamcenter Integration

Course Code	TRCT2210-TC
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

FastStart for Experienced 3D CAD Users, an exclusive offering by the Siemens US Training team, provides an accelerated introduction to the task-based workflows that new NX users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **FastStart for Experienced 3D CAD Users** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and edit parametric part models
 • Create and modify assembly structures
 • Establish interpart modeling relationships within an assembly structure
 • Translate and modify non-parametric model data
 • Build assembly configurations using arrangements
 • Create and modify basic drawings

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers, detailers, and CAD/CAM managers who need to manage and use NX.

PREREQUISITES

Working knowledge of parametric modeling

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

 • Overview of Teamcenter with NX integration
 • Sketching and extruding simple shapes
 • Creating and constraining sketch profiles
 • Revolving cylindrical parts
 • Adding basic design and detail features to parts

Day 2

 • Analyzing the history and properties of a model
 • Opening and analyzing an assembly structure

• Controlling design intent and using equations
• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 3

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Translating part data from other CAD systems
• Using Synchronous Modeling to modify imported model data

• Activity Material

Day 4

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

• Building and constraining assembly structures
• Editing and revising parts and assemblies
• Using reference sets to display component parts
• Configuring an assembly using arrangements
• Modeling parts in the context of an assembly

Day 5

• Linking geometry between related component parts
• Creating expression links between parts
• Creating basic part drawings

Course Description

NX 10.0
CAD FastStart for Experienced 3D CAD Users
With Teamcenter Integration

Course Code	TRCT2210-TC
User Level	Beginner to Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> <strong> La clase se enseña en el entorno de integración de Teamcenter. </ strong> </ p>

<p> <strong> FastStart para usuarios experimentados de CAD 3D </ strong>, una <u> oferta exclusiva del equipo de capacitación de EE. UU. de Siemens </ u>, proporciona una introducción acelerada a los flujos de trabajo basados en tareas que los nuevos usuarios de NX utilizarán al crear y editar partes paramétricas. La experiencia en el mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este único curso a su trabajo, lo que resulta en un tiempo más rápido para la productividad. </ p>

<p> Al finalizar la clase <strong> FastStart para usuarios experimentados de CAD 3D </ strong>, el alumno podrá desarrollar modelos paramétricos sólidos y de ensamblaje, así como dibujos utilizando el concepto del modelo maestro. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza nuestro conocimiento profundo de las capacidades del software e instruye a los estudiantes en base a los principios subyacentes incorporados dentro del conjunto de productos de NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente: </ p>

Open and examine NX models
Create and edit parametric part models
Create and modify assembly structures
Establish interpart modeling relationships within an assembly structure
Translate and modify non-parametric model data
Build assembly configurations using arrangements
Create and modify basic drawings

WHO SHOULD ATTEND

<p> Diseñadores, ingenieros, detallistas y administradores de CAD / CAM que necesitan administrar y usar NX. </ p>

PREREQUISITES

<P><p> Conocimiento práctico del modelado paramétrico </ p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Overview of Teamcenter with NX integration
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts
• Adding basic design and detail features to parts

Day 2

• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Controlling design intent and using equations

• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 3

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Translating part data from other CAD systems
• Using Synchronous Modeling to modify imported model data

Day 4

• Building and constraining assembly structures
• Editing and revising parts and assemblies
• Using reference sets to display component parts
• Configuring an assembly using arrangements
• Modeling parts in the context of an assembly

Day 5

• Linking geometry between related component parts
• Creating expression links between parts
• Creating basic part drawings

ATTENDANCE REQUIREMENTS

<p> Para las clases <b> ¡EN VIVO! </ b>, los clientes deben tener instalado NX 10. </ p>

NX 11.0

CAD FastStart for Experienced 3D CAD Users
With Teamcenter Integration using Active Workspace

Course Code	TRCT2210-TC
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

FastStart for Experienced 3D CAD Users, an exclusive offering by the Siemens US Training team, provides an accelerated introduction to the task-based workflows that new NX users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

At the completion of the **FastStart for Experienced 3D CAD Users** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Open and examine NX models
• Create and edit parametric part models
• Create and modify assembly structures
• Establish interpart modeling relationships within an assembly structure
• Translate and modify non-parametric model data
• Build assembly configurations using arrangements
• Create and modify basic drawings

WHO SHOULD ATTEND

Designers, engineers, detailers, and CAD/CAM managers who need to manage and use NX.

PREREQUISITES

Working knowledge of parametric modeling

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

• Overview of Active Workspace with NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts
• Adding basic design and detail features to parts

Day 2

• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure

Course Description

• Controlling design intent and using equations
• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 3

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Translating part data from other CAD systems
• Using Synchronous Modeling to modify imported model data

• Activity Material

Day 4

• Building and constraining assembly structures
• Editing and revising parts and assemblies
• Using reference sets to display component parts
• Configuring an assembly using arrangements
• Modeling parts in the context of an assembly

Day 5

• Linking geometry between related component parts
• Creating expression links between parts
• Creating basic part drawings

Course Description

NX 12.0

CAD FastStart for Experienced 3D CAD Users
With Teamcenter Integration using Active Workspace

Course Code	TRCT2210-TC
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

FastStart for Experienced 3D CAD Users provides an accelerated introduction to the task-based workflows that new NX users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **FastStart for Experienced 3D CAD Users** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and edit parametric part models
 • Create and modify assembly structures
 • Establish interpart modeling relationships within an assembly structure
 • Translate and modify non-parametric model data
 • Build assembly configurations using arrangements
 • Create and modify basic drawings

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers, detailers, and CAD/CAM managers who need to manage and use NX.

PREREQUISITES

Working knowledge of parametric modeling

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

COURSE TOPICS

Day 1

 • Overview of Active Workspace with NX
 • Sketching and extruding simple shapes
 • Creating and constraining sketch profiles
 • Revolving cylindrical parts
 • Adding basic design and detail features to parts

Day 2

 • Analyzing the history and properties of a model
 • Opening and analyzing an assembly structure
 • Controlling design intent and using equations

Course Description

• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 3

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Translating part data from other CAD systems
• Using Synchronous Modeling to modify imported model data

Day 4

• Building and constraining assembly structures
• Editing and revising parts and assemblies
• Using reference sets to display component parts
• Configuring an assembly using arrangements
• Modeling parts in the context of an assembly

Day 5

• Linking geometry between related component parts
• Creating expression links between parts
• Creating basic part drawings

Course Description

NX 1847

CAD FastStart for Experienced 3D CAD Users
With Teamcenter Integration using Active Workspace

Course Code	TRCT2210-TC
User Level	Beginner to Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

FastStart for Experienced 3D CAD Users provides an accelerated introduction to the task-based workflows that new NX users will utilize when creating and editing parametric parts. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **FastStart for Experienced 3D CAD Users** class, the student will be able to develop parametric solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and edit parametric part models
 • Create and modify assembly structures
 • Establish interpart modeling relationships within an assembly structure
 • Translate and modify non-parametric model data
 • Build assembly configurations using arrangements
 • Create and modify basic drawings

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Designers, engineers, detailers, and CAD/CAM managers who need to manage and use NX.

PREREQUISITES

Working knowledge of parametric modeling

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

 • Overview of Active Workspace with NX
 • Sketching and extruding simple shapes
 • Creating and constraining sketch profiles
 • Revolving cylindrical parts
 • Adding basic design and detail features to parts

Day 2

 • Analyzing the history and properties of a model
 • Opening and analyzing an assembly structure
 • Controlling design intent and using equations

Course Description

• Creating parts defined by a wall thickness
• Modeling molded and cast parts

Day 3

• Sweeping geometry to define parts
• Building parts with duplicate geometry
• Translating part data from other CAD systems
• Using Synchronous Modeling to modify imported model data

Day 4

• Building and constraining assembly structures
• Editing and revising parts and assemblies
• Using reference sets to display component parts
• Configuring an assembly using arrangements
• Modeling parts in the context of an assembly

Day 5

• Linking geometry between related component parts
• Creating expression links between parts
• Creating basic part drawings

NX 10.0

CAD Basic Processes
With Teamcenter Integration

Course Code	TRCT2215-TC
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter Integration environment.

Basic Processes, an exclusive offering by the Siemens US Training team, is designed to give new users an overview of the NX modeling, assemblies, and drafting task-based processes. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Basic Processes** class, the student will be able to develop basic solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and modify basic assembly structures
 • Create and edit parametric solid models
 • Modify imported model data
 • Create and modify simple drawings

NOTE: This course may be used to fulfill the prerequisite for several discipline-specific courses (i.e. CAM, CAE, & Drafting)

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Manufacturing engineers, NC/CNC programmers, CAE engineers, detailers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

COURSE TOPICS

Day 1

 • Overview of Teamcenter with NX integration
 • Sketching and extruding simple shapes
 • Creating and constraining sketch profiles
 • Revolving cylindrical parts
 • Adding basic design and detail features to parts

Day 2

 • Analyzing the history and properties of a model

Course Description

• Opening and analyzing an assembly structure
• Building and constraining assembly structures
• Using Synchronous Modeling to modify imported model data
• Creating a basic part drawing

• Student Guide
• Activity Material

<table>
<tr><td>ATTENDANCE REQUIREMENTS</td></tr>
</table>

For **LIVE!** classes, customers are required to have NX 10 installed.

NX 11.0

CAD Basic Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2215-TC
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

Basic Processes, an exclusive offering by the Siemens US Training team, is designed to give new users an overview of the NX modeling, assemblies, and drafting task-based processes. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Basic Processes** class, the student will be able to develop basic solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Open and examine NX models
• Create and modify basic assembly structures
• Create and edit parametric solid models
• Modify imported model data
• Create and modify simple drawings

Course Description

NOTE: This course may be used to fulfill the prerequisite for several discipline-specific courses (i.e. CAM, CAE, & Drafting)

WHO SHOULD ATTEND

Manufacturing engineers, NC/CNC programmers, CAE engineers, detailers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

COURSE TOPICS

Day 1

• Overview of Active Workspace with NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts
• Adding basic design and detail features to parts

Day 2

• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Building and constraining assembly structures
• Using Synchronous Modeling to modify imported model data
• Creating a basic part drawing

Course Description

NX 11.0

CAD Basic Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2215-TC
User Level	Beginner
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> La clase se enseña en el entorno de integración de Teamcenter utilizando Active Workspace integrado en NX. </p>
<p> Procesos básicos , está diseñada para brindar a los nuevos usuarios una descripción general del modelado, ensamblaje y dibujo de NX basados en tareas procesos La experiencia del mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este curso único a su trabajo, lo que resulta en un tiempo más rápido para la productividad. </p>
<p> Al finalizar la clase de Procesos básicos , el estudiante podrá desarrollar modelos de sólidos y ensamblajes básicos, así como dibujos utilizando el concepto de modelo maestro. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por profesionales de Siemens PLM Software, esta clase refuerza nuestro profundo conocimiento de las capacidades del software e instruye a los estudiantes sobre la base de los principios subyacentes incorporados en la suite de productos NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente: </p>

 Abre y examina los modelos NX
 Crear y modificar estructuras de ensamblaje básicas
 Crea y edita modelos sólidos paramétricos
 Modificar los datos del modelo importado
 Crea y modifica dibujos simples

<p> </p>
<p> NOTA: Este curso se puede usar para cumplir los requisitos previos para varios cursos específicos de disciplina (es decir, CAM , <a href="http://training.plm.automation.siemens.com/courses/iltdescription.cfm?pID=TR15220_____S3D__11.x. , & <a href="http://training.plm.automation.siemens.com/courses/iltdescription.cfm?pID=TR10100-TC____NX___11.0___5000"> Drafting

WHO SHOULD ATTEND

Manufacturing engineers, NC/CNC programmers, CAE engineers, detailers, and managers who need to manage and use NX.

PREREQUISITES

None

COURSE TOPICS

Day 1

- Overview of Active Workspace with NX
- Sketching and extruding simple shapes
- Creating and constraining sketch profiles
- Revolving cylindrical parts
- Adding basic design and detail features to parts

Day 2

Course Description

• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Building and constraining assembly structures
• Using Synchronous Modeling to modify imported model data
• Creating a basic part drawing

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

NX 12.0

CAD Basic Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2215-TC
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

Basic Processes is designed to give new users an overview of the NX modeling, assemblies, and drafting task-based processes. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Basic Processes** class, the student will be able to develop basic solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and modify basic assembly structures
 • Create and edit parametric solid models
 • Modify imported model data
 • Create and modify simple drawings

Course Description

NOTE: This course may be used to fulfill the prerequisite for several discipline-specific courses (i.e. CAM, CAE, & Drafting)

WHO SHOULD ATTEND

Manufacturing engineers, NC/CNC programmers, CAE engineers, detailers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

COURSE TOPICS

Day 1

• Overview of Active Workspace with NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts
• Adding basic design and detail features to parts

Day 2

• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Building and constraining assembly structures
• Using Synchronous Modeling to modify imported model data
• Creating a basic part drawing

NX 12.0

CAD Basic Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2215-TC
User Level	Beginner
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p><strong>La clase se enseña en el entorno de integración de Teamcenter utilizando Active Workspace incrustado en NX.</ strong> </ p>

<p><strong>Procesos básicos</ strong> está diseñado para ofrecer a los nuevos usuarios una visión general del modelado de NX, ensamblados y procesos basados en tareas de redacción. La experiencia en el mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este único curso a su trabajo, lo que resulta en un tiempo más rápido para la productividad. </ p>

<p> Al finalizar la clase <strong> Procesos básicos </ strong>, el alumno podrá desarrollar modelos sólidos y de ensamblaje básicos, así como dibujos utilizando el concepto de modelo maestro. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza nuestro conocimiento profundo de las capacidades del software e instruye a los estudiantes en base a los principios subyacentes incorporados dentro del conjunto de productos de NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente: </ p>

Abre y examina los modelos de NX </ li>
Crear y modificar estructuras de ensamblaje básicas </ li>
Crear y editar modelos sólidos paramétricos </ li>
Modificar los datos del modelo importado </ li>
Crear y modificar dibujos simples </ li>
</ ul>
<p> </ p>
<p> <strong>NOTA:</ strong> este curso se puede utilizar para cumplir con el requisito previo para varios cursos específicos de disciplina (es decir, CAM , CAE , & <a href="http://training.plm.automation.siemens.com/courses/iltdescription.cfm?pID=TR10100-

WHO SHOULD ATTEND

Manufacturing engineers, NC/CNC programmers, CAE engineers, detailers, and managers who need to manage and use NX.

PREREQUISITES

None

COURSE TOPICS

Day 1

• Overview of Active Workspace with NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts
• Adding basic design and detail features to parts

Day 2

Course Description

• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Building and constraining assembly structures
• Using Synchronous Modeling to modify imported model data
• Creating a basic part drawing

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX
12.0.1 installed.

NX 1847

CAD Basic Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2215-TC
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

Basic Processes is designed to give new users an overview of the NX modeling, assemblies, and drafting task-based processes. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Basic Processes** class, the student will be able to develop basic solid and assembly models as well as drawings using the master model concept. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Open and examine NX models
 • Create and modify basic assembly structures
 • Create and edit parametric solid models
 • Modify imported model data
 • Create and modify simple drawings

Course Description

NOTE: This course may be used to fulfill the prerequisite for several discipline-specific courses (i.e. CAM, CAE, & Drafting)

WHO SHOULD ATTEND

Manufacturing engineers, NC/CNC programmers, CAE engineers, detailers, and managers who need to manage and use NX.

PREREQUISITES

None

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Overview of Active Workspace with NX
• Sketching and extruding simple shapes
• Creating and constraining sketch profiles
• Revolving cylindrical parts
• Adding basic design and detail features to parts

Day 2

• Analyzing the history and properties of a model
• Opening and analyzing an assembly structure
• Building and constraining assembly structures
• Using Synchronous Modeling to modify imported model data
• Creating a basic part drawing

NX 10.0

CAD Advanced Processes
With Teamcenter Integration

Course Code	TRCT2220-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment.

The **Advanced Processes** course, an exclusive offering by the Siemens US Training team, is designed to propel students further up the efficiency curve. As a second tier course Advanced Processes builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Advanced Processes** class, the student will be able to develop complex parametric solid and assembly models. This task-based process course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Apply advanced sketch constraints to capture design intent
 • Use basic surfacing techniques to build parts
 • Develop models to support manufacturing processes
 • Translate and modify non-parametric model data
 • Use top-down assembly modeling technqiues to establish interpart relationships
 • Build assembly configurations using arrangements

WHO SHOULD ATTEND	COURSE TOPICS

 • This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or
 • Essentials for NX Designers (TR10051-TC)

Day 1

 • Modeling basic parts using surfacing techniques
 • Controlling design intent using conditional formulas
 • Adding advanced features to molded and cast parts

Day 2

 • Starting a model using imported CAD data
 • Building parts with duplicate geometry
 • Displaying and analyzing assembly structures

Day 3

Course Description

• Modeling parts in the context of an assembly
• Linking geometry between related component parts
• Creating expression links between parts

Day 4

• Preparing models for down-stream manufacturing processes
• Duplicating components using patterns
• Working with and defining reusable part data

Day 5

• Cloning assembly structures
• Editing and revising assembly structures
• Configuring an assembly using arrangements

• Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Basic understanding of parametric modeling, and the Master Model Concept.

Working knowledge of the following:

• NX interface
• Creating, opening, and saving parts in a Teamcenter Integration environment.
• Part file saving conventions
• Sketching and constraining techniques
• Adding and constraining assembly components
• Sweeping features with optional Offset
• Using layer settings to control visibility
• Creating edge blend and hole features

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

Course Description

NX 11.0

CAD Advanced Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2220-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

The **Advanced Processes** course, an exclusive offering by the Siemens US Training team, is designed to propel students further up the efficiency curve. As a second tier course Advanced Processes builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Advanced Processes** class, the student will be able to develop complex parametric solid and assembly models. This task-based process course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Apply advanced sketch constraints to capture design intent
 • Use basic surfacing techniques to build parts
 • Develop models to support manufacturing processes
 • Translate and modify non-parametric model data
 • Use top-down assembly modeling technqiues to establish interpart relationships
 • Build assembly configurations using arrangements

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or

 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning

COURSE TOPICS

Day 1

 • Modeling basic parts using surfacing techniques
 • Controlling design intent using conditional formulas
 • Adding advanced features to molded and cast parts

Day 2

 • Starting a model using imported CAD data
 • Building parts with duplicate geometry
 • Displaying and analyzing assembly structures

Day 3

Course Description

prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

• Modeling parts in the context of an assembly
• Linking geometry between related component parts
• Creating expression links between parts

Day 4

• Preparing models for down-stream manufacturing processes
• Duplicating components using patterns
• Working with and defining reusable part data

Day 5

• Cloning assembly structures
• Editing and revising assembly structures
• Configuring an assembly using arrangements

Course Description

NX 11.0

CAD Advanced Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2220-TC
User Level	Intermediate
Language	Spanish
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

La clase se enseña en el entorno de integración de Teamcenter utilizando Active Workspace integrado en NX.

El curso **Procesos avanzados** , está diseñado para impulsar a los estudiantes a subir la curva de eficiencia. Como un curso de segundo nivel, Advanced Processes se basa en las herramientas que implementó como resultado de asistir al curso NX CAD Fundamental Workflows. La experiencia del mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este curso único a su trabajo, lo que resulta en un tiempo más rápido para la productividad.

Al finalizar la clase **Procesos avanzados** , el estudiante podrá desarrollar complejos modelos de ensamblaje y sólidos paramétricos complejos. Este curso de proceso basado en tareas enfoca al estudiante en técnicas de modelado productivo que capturan la intención del diseño en el contexto del Modelo Maestro. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por profesionales de Siemens PLM Software, esta clase refuerza nuestro profundo conocimiento de las capacidades del software e instruye a los estudiantes sobre la base de los principios subyacentes incorporados en la suite de productos NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente:

- Aplique restricciones de boceto avanzadas para capturar la intención del diseño
- Use técnicas básicas de revestimiento para construir partes
- Desarrollar modelos para apoyar los procesos de fabricación
- Traducir y modificar los datos del modelo no paramétrico
- Utilice técnicas de modelado de ensamblajes de arriba hacia abajo para establecer relaciones entre partes
- Construir configuraciones de ensamblaje utilizando arreglos

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or
 • Successful completion of **Designing parts in NX**

COURSE TOPICS

Day 1

- Modeling basic parts using surfacing techniques
- Controlling design intent using conditional formulas
- Adding advanced features to molded and cast parts

Day 2

- Starting a model using imported CAD data
- Building parts with duplicate geometry
- Displaying and analyzing assembly structures

Course Description

Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

Day 3

• Modeling parts in the context of an assembly
• Linking geometry between related component parts
• Creating expression links between parts

Day 4

• Preparing models for down-stream manufacturing processes
• Duplicating components using patterns
• Working with and defining reusable part data

Day 5

• Cloning assembly structures
• Editing and revising assembly structures
• Configuring an assembly using arrangements

Course Description

NX 12.0

CAD Advanced Processes

With Teamcenter Integration using Active Workspace

Course Code	TRCT2220-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

The **Advanced Processes** course is designed to propel students further up the efficiency curve. As a second tier course Advanced Processes builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Advanced Processes** class, the student will be able to develop complex parametric solid and assembly models. This task-based process course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Apply advanced sketch constraints to capture design intent
 • Use basic surfacing techniques to build parts
 • Develop models to support manufacturing processes
 • Translate and modify non-parametric model data
 • Use top-down assembly modeling technqiues to establish interpart relationships
 • Build assembly configurations using arrangements

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or

 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning

COURSE TOPICS

Day 1

 • Modeling basic parts using surfacing techniques
 • Controlling design intent using conditional formulas
 • Adding advanced features to molded and cast parts

Day 2

 • Starting a model using imported CAD data
 • Building parts with duplicate geometry
 • Displaying and analyzing assembly structures

Day 3

Course Description

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prepare for the prerequisite assessment.

• Student Guide
• Activity Material

This course was written against NX 12.0.1
For LIVE! classes, customers are required to have NX 12.0.1 installed.

• Modeling parts in the context of an assembly
• Linking geometry between related component parts
• Creating expression links between parts

Day 4

• Preparing models for down-stream manufacturing processes
• Duplicating components using patterns
• Working with and defining reusable part data

Day 5

• Cloning assembly structures
• Editing and revising assembly structures
• Configuring an assembly using arrangements

Course Description

NX 12.0

CAD Advanced Processes
With Teamcenter Integration using Active Workspace

Course Code	TRCT2220-TC
User Level	Intermediate
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

La clase se enseña en el entorno de integración de Teamcenter utilizando Active Workspace integrado en NX.

El curso **Procesos avanzados** está diseñado para impulsar a los estudiantes a subir la curva de eficiencia. Como un curso de segundo nivel, Advanced Processes se basa en las herramientas que implementó como resultado de asistir al curso NX CAD Fundamental Workflows. La experiencia del mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este curso único a su trabajo, lo que resulta en un tiempo más rápido para la productividad.

Al finalizar la clase **Procesos avanzados**, el estudiante podrá desarrollar complejos modelos de ensamblaje y sólidos paramétricos complejos. Este curso de proceso basado en tareas enfoca al estudiante en técnicas de modelado productivo que capturan la intención del diseño en el contexto del Modelo Maestro. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por profesionales de Siemens PLM Software, esta clase refuerza nuestro profundo conocimiento de las capacidades del software e instruye a los estudiantes sobre la base de los principios subyacentes incorporados en la suite de productos NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente:

- Aplique restricciones de boceto avanzadas para capturar la intención del diseño
- Use técnicas básicas de revestimiento para construir partes
- Desarrollar modelos para apoyar los procesos de fabricación
- Traducir y modificar los datos del modelo no paramétrico
- Utilice técnicas de modelado de ensamblajes de arriba hacia abajo para establecer relaciones entre partes
- Construir configuraciones de ensamblaje utilizando arreglos

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
• CAD Fundamental Processes (TRCT2205-TC)

Or
• Successful completion of **Designing parts in NX**

COURSE TOPICS

Day 1

• Modeling basic parts using surfacing techniques
• Controlling design intent using conditional formulas
• Adding advanced features to molded and cast parts

Day 2

• Starting a model using imported CAD data
• Building parts with duplicate geometry
• Displaying and analyzing assembly structures

Course Description

Day 3

- Modeling parts in the context of an assembly
- Linking geometry between related component parts
- Creating expression links between parts

Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Day 4

- Preparing models for down-stream manufacturing processes
- Duplicating components using patterns
- Working with and defining reusable part data

- Student Guide
- Activity Material

Day 5

- Cloning assembly structures
- Editing and revising assembly structures
- Configuring an assembly using arrangements

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Course Description

NX 1847

CAD Advanced Processes
With Teamcenter Integration using Active Workspace

Course Code	TRCT2220-TC
User Level	Intermediate
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

The **Advanced Processes** course is designed to propel students further up the efficiency curve. As a second tier course Advanced Processes builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Advanced Processes** class, the student will be able to develop complex parametric solid and assembly models. This task-based process course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Apply advanced sketch constraints to capture design intent
 • Use basic surfacing techniques to build parts
 • Develop models to support manufacturing processes
 • Translate and modify non-parametric model data
 • Use top-down assembly modeling technqiues to establish interpart relationships
 • Build assembly configurations using arrangements

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or

 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning

COURSE TOPICS

Day 1

 • Modeling basic parts using surfacing techniques
 • Controlling design intent using conditional formulas
 • Adding advanced features to molded and cast parts

Day 2

 • Starting a model using imported CAD data
 • Building parts with duplicate geometry
 • Displaying and analyzing assembly structures

Day 3

- Modeling parts in the context of an assembly
- Linking geometry between related component parts
- Creating expression links between parts

prepare for the prerequisite assessment.

Day 4

PROVIDED COURSE MATERIAL

- Preparing models for down-stream manufacturing processes
- Working with and defining reusable part data
- Cloning assembly structures

- Student Guide
- Activity Material

Day 5

- Editing and revising assembly structures
- Configuring an assembly using arrangements

Course Description

NX 12.0

CAD Advanced Processes

Course Code	TRCT2220
User Level	Intermediate
Language	English
Price	R$ 2.360,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Advanced Processes** course is designed to propel students further up the efficiency curve. As a second tier course Advanced Processes builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Advanced Processes** class, the student will be able to develop complex parametric solid and assembly models. This task-based process course focuses the student on productive modeling techniques that capture design intent in the context of the Master Model. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Apply advanced sketch constraints to capture design intent
• Use basic surfacing techniques to build parts
• Develop models to support manufacturing processes
• Translate and modify non-parametric model data
• Use top-down assembly modeling technqiues to establish interpart relationships
• Build assembly configurations using arrangements

WHO SHOULD ATTEND	COURSE TOPICS

 • This course is for designers, engineers, and CAD/CAM managers who need to create parametric solid models that capture design intent.

Day 1

• Modeling basic parts using surfacing techniques
• Controlling design intent using conditional formulas
• Adding advanced features to molded and cast parts

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205)

Day 2

• Starting a model using imported CAD data
• Building parts with duplicate geometry
• Displaying and analyzing assembly structures

Or
 • Successful completion of Designing Parts in NX prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Day 3

• Modeling parts in the context of an assembly

Course Description

• Linking geometry between related component parts
• Creating expression links between parts

Day 4

• Preparing models for down-stream manufacturing processes
• Duplicating components using patterns
• Working with and defining reusable part data

Day 5

• Cloning assembly structures
• Editing and revising assembly structures
• Configuring an assembly using arrangements

• Student Guide
• Activity Material

| ATTENDANCE REQUIREMENTS |

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Course Description

NX 10.0

CAD Surface Modeling Processes
With Teamcenter Integration

Course Code	TRCT2225-TC
User Level	Intermediate to Advanced
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course is taught in the Teamcenter Integration environment.

The **Surface Modeling Processes** course, an exclusive offering by the Siemens US Training team, is designed to cover the process of how to create freeform parts that update reliably and shift smoothly to the manufacturing application. As a second tier course Surface Modeling Workflows builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Surface Modeling Processes** class, the student will be able to incorporate freeform features into any part, from product models to complex engineering designs. This task-based process course focuses the student on productive surface modeling techniques that capture design intent. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Create splines and derived curves used in creating freeform features.
 • Analyze curves and faces.
 • Build primary surfaces using curves.
 • Create freeform shapes by sweeping sections along curves.
 • Create transition and blend shapes.
 • Extend and offset surface geometry.
 • Convert surfaces into solid models.
 • Add draft to molded and cast part models.
 • Deform parts using Global Shaping.

WHO SHOULD ATTEND	**COURSE TOPICS**

 • Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

Day 1

 • Introduction to surface modeling processes
 • Using 3D curves as construction geometry
 • Creating freeform shapes from splines

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Day 2

Course Description

Or

• [Essentials for NX Designers](#) (TR10051-TC)

Or

• [CAD FastStart for Experienced 3D CAD Users](#)(TRCT2210-TC)

Or

• Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

• NX domain knowledge
• NX modeling and sketching

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

• Using mesh surfaces to define primary features
• Styling shapes to build sculpted surfaces
• Sweeping sections to start a design

Day 3

• Building exact geometry to define irregular shapes
• Overbuilding and combining surfaces to build a part

Day 4

• Defining transitional geometry between shapes
• Analyzing the quality of freeform geometry

Day 5

• Using surfaces to add definition to a solid model
• Deforming surfaces for manufacturing processes
• Optional: Working with raster images
• Optional: Introduction to reverse engineering

Course Description

NX 11.0

CAD Surface Modeling Processes
With Teamcenter Integration

Course Code	TRCT2225-TC
User Level	Intermediate to Advanced
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

The **Surface Modeling Processes** course, an exclusive offering by the Siemens US Training team, is designed to cover the process of how to create freeform parts that update reliably and shift smoothly to the manufacturing application. As a second tier course Surface Modeling Workflows builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

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• Create transition and blend shapes.
• Extend and offset surface geometry.
• Convert surfaces into solid models.
• Add draft to molded and cast part models.
• Deform parts using Global Shaping.

WHO SHOULD ATTEND	COURSE TOPICS

 • Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

Day 1

• Introduction to surface modeling processes
• Using 3D curves as construction geometry
• Creating freeform shapes from splines

PREREQUISITES

Required courses:
• CAD Fundamental Processes (TRCT2205-TC)

Day 2

Course Description

Or
 • [Essentials for NX Designers](#) (TR10051-TC)

Or
 • [CAD FastStart for Experienced 3D CAD Users](#)(TRCT2210-TC)

Or
 • Successful completion of Designing Parts in NX prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • NX domain knowledge
 • NX modeling and sketching

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

• Using mesh surfaces to define primary features
• Styling shapes to build sculpted surfaces
• Sweeping sections to start a design

Day 3

• Building exact geometry to define irregular shapes
• Overbuilding and combining surfaces to build a part

Day 4

• Defining transitional geometry between shapes
• Analyzing the quality of freeform geometry

Day 5

• Using surfaces to add definition to a solid model
• Deforming surfaces for manufacturing processes
• Optional: Working with raster images
• Optional: Introduction to reverse engineering

Course Description

NX 11.0

CAD Surface Modeling Processes
With Teamcenter Integration

Course Code	TRCT2225-TC
User Level	Intermediate to Advanced
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> La clase se enseña en el entorno de integración Teamcenter utilizando Active Workspace incrustado en NX. </p>
<p> El curso Procesos de modelado de superficies , está diseñado para cubrir el proceso de cómo crear piezas de forma libre que se actualicen de manera confiable y cambien sin problemas a la aplicación de fabricación. Como un curso de segundo nivel, Modelado de superficie, Flujos de trabajo se basa en las herramientas que implementó como resultado de asistir al curso de flujo de trabajo fundamental de NX CAD. La experiencia en el mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este único curso a su trabajo, lo que resulta en un tiempo más rápido para la productividad. </p>
<p> Al finalizar la clase Procesos de modelado de superficie , el alumno podrá incorporar funciones de forma libre en cualquier parte, desde modelos de productos hasta diseños de ingeniería complejos. Este curso de proceso basado en tareas enfoca al estudiante en técnicas productivas de modelado de superficies que capturan la intención del diseño. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza nuestro conocimiento profundo de las capacidades del software e instruye a los estudiantes en base a los principios subyacentes incorporados dentro del conjunto de productos de NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente: </p>

 Cree splines y curvas derivadas utilizadas para crear funciones de forma libre.
 Analiza curvas y caras.
 Construye superficies primarias usando curvas.
 Crea formas sin forma barriendo secciones a lo largo de las curvas.
 Crear transición y combinar formas. </ li>
 Extiende y compensa la geometría de la superficie.
 Convertir superficies en modelos sólidos.
 Agregue borrador a los modelos de piezas moldeadas y moldeadas.
 Modifica piezas utilizando Global Shaping.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

COURSE TOPICS

Day 1

 • Introduction to surface modeling processes
 • Using 3D curves as construction geometry
 • Creating freeform shapes from splines

Day 2

Course Description

Or
 • [Essentials for NX Designers](TR10051-TC)

Or
 • [CAD FastStart for Experienced 3D CAD Users](TRCT2210-TC)

Or
 • Successful completion of Designing Parts in NX prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • NX domain knowledge
 • NX modeling and sketching

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1
For LIVE! classes, customers are required to have NX 11.0.1 installed.

• Using mesh surfaces to define primary features
• Styling shapes to build sculpted surfaces
• Sweeping sections to start a design

Day 3

• Building exact geometry to define irregular shapes
• Overbuilding and combining surfaces to build a part

Day 4

• Defining transitional geometry between shapes
• Analyzing the quality of freeform geometry

Day 5

• Using surfaces to add definition to a solid model
• Deforming surfaces for manufacturing processes
• Optional: Working with raster images
• Optional: Introduction to reverse engineering

Course Description

NX 12.0

CAD Surface Modeling Processes
With Teamcenter Integration

Course Code	TRCT2225-TC
User Level	Intermediate to Advanced
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

The **Surface Modeling Processes** course is designed to cover the process of how to create freeform parts that update reliably and shift smoothly to the manufacturing application. As a second tier course Surface Modeling Workflows builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

 At the completion of the **Surface Modeling Processes** class, the student will be able to incorporate freeform features into any part, from product models to complex engineering designs. This task-based process course focuses the student on productive surface modeling techniques that capture design intent. These concepts can be applied in the real world of product development and collaboration. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

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• Extend and offset surface geometry.
• Convert surfaces into solid models.
• Add draft to molded and cast part models.
• Deform parts using Global Shaping.

WHO SHOULD ATTEND	COURSE TOPICS

 • Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

Day 1

• Introduction to surface modeling processes
• Using 3D curves as construction geometry
• Creating freeform shapes from splines

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Day 2

Course Description

Or
 • [Essentials for NX Designers](#) (TR10051)

Or
 • [CAD FastStart for Experienced 3D CAD Users](#)(TRCT2210-TC)

Or
 • Successful completion of Designing Parts in NX prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • NX domain knowledge
 • NX modeling and sketching

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

 • Using mesh surfaces to define primary features
 • Styling shapes to build sculpted surfaces
 • Sweeping sections to start a design

Day 3

 • Building exact geometry to define irregular shapes
 • Overbuilding and combining surfaces to build a part

Day 4

 • Defining transitional geometry between shapes
 • Analyzing the quality of freeform geometry

Day 5

 • Using surfaces to add definition to a solid model
 • Deforming surfaces for manufacturing processes
 • Optional: Working with raster images
 • Optional: Introduction to reverse engineering

Course Description

NX 12.0

CAD Surface Modeling Processes
With Teamcenter Integration

Course Code	TRCT2225-TC
User Level	Intermediate to Advanced
Language	Spanish
Price	$1,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

La clase se enseña en el entorno de integración Teamcenter utilizando Active Workspace incrustado en NX.

El curso **Procesos de modelado de superficie** está diseñado para cubrir el proceso de cómo crear piezas de forma libre que se actualicen de manera confiable y se modifiquen sin problemas a la aplicación de fabricación. Como un curso de segundo nivel, Modelado de superficie, Flujos de trabajo se basa en las herramientas que implementó como resultado de asistir al curso de flujo de trabajo fundamental de NX CAD. La experiencia en el mundo real de los instructores de Siemens ayuda a los estudiantes a transferir el conocimiento adquirido a través de este único curso a su trabajo, lo que resulta en un tiempo más rápido para la productividad.

Al finalizar la clase **Procesos de modelado de superficie**, el alumno podrá incorporar funciones de forma libre en cualquier parte, desde modelos de productos hasta diseños de ingeniería complejos. Este curso de proceso basado en tareas enfoca al estudiante en técnicas productivas de modelado de superficies que capturan la intención del diseño. Estos conceptos se pueden aplicar en el mundo real del desarrollo de productos y la colaboración. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza nuestro conocimiento profundo de las capacidades del software e instruye a los estudiantes en base a los principios subyacentes incorporados dentro del conjunto de productos de NX. Esta clase fue diseñada para aumentar la productividad del estudiante, enseñando las habilidades necesarias para lograr lo siguiente:

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• Analiza curvas y caras.
• Construye superficies primarias usando curvas.
• Crea formas sin forma barriendo secciones a lo largo de las curvas.
• Crear transición y combinar formas.
• Extiende y compensa la geometría de la superficie.
• Convertir superficies en modelos sólidos.
• Agregue borrador a los modelos de piezas moldeadas y moldeadas.
• Modifica piezas utilizando Global Shaping.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

PREREQUISITES

COURSE TOPICS

Day 1

• Introduction to surface modeling processes
• Using 3D curves as construction geometry
• Creating freeform shapes from splines

<P>Required courses:</P>
CAD Fundamental Processes (TRCT2205-TC)
<P>Or

Essentials for NX Designers (TR10051)

Or

CAD FastStart for Experienced 3D CAD Users(TRCT2210-TC)

Or

Successful completion of Designing Parts in NX prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:

NX domain knowledge
NX modeling and sketching
</P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Day 2

• Using mesh surfaces to define primary features
• Styling shapes to build sculpted surfaces
• Sweeping sections to start a design

Day 3

• Building exact geometry to define irregular shapes
• Overbuilding and combining surfaces to build a part

Day 4

• Defining transitional geometry between shapes
• Analyzing the quality of freeform geometry

Day 5

• Using surfaces to add definition to a solid model
• Deforming surfaces for manufacturing processes
• Optional: Working with raster images
• Optional: Introduction to reverse engineering

Course Description

NX 1847

CAD Surface Modeling Processes
With Teamcenter Integration

Course Code	TRCT2225-TC
User Level	Intermediate to Advanced
Language	English
Price	$2,750.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Class is taught in the Teamcenter integration environment using Active Workspace embedded in NX.

The **Surface Modeling Processes** course is designed to cover the process of how to create freeform parts that update reliably and shift smoothly to the manufacturing application. As a second tier course Surface Modeling Workflows builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

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• Extend and offset surface geometry.
• Convert surfaces into solid models.
• Add draft to molded and cast part models.
• Deform parts using Global Shaping.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

COURSE TOPICS

Day 1

 • Introduction to surface modeling processes
 • Using 3D curves as construction geometry
 • Creating freeform shapes from splines

Day 2

Or

 • CAD FastStart for Experienced 3D CAD Users
(TRCT2210-TC)

Or

 • Successful completion of Designing Parts in NX
prerequisite assessment on the Learning Advantage
(score >70%). Learning Advantage courses can also be
used to prepare for the prerequisite assessment.

• NX domain knowledge
• NX modeling and sketching

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

• Using mesh surfaces to define primary features
• Styling shapes to build sculpted surfaces
• Sweeping sections to start a design

Day 3

• Building exact geometry to define irregular shapes
• Overbuilding and combining surfaces to build a part

Day 4

• Defining transitional geometry between shapes
• Analyzing the quality of freeform geometry

Day 5

• Using surfaces to add definition to a solid model
• Deforming surfaces for manufacturing processes
• Optional: Working with raster images
• Optional: Introduction to reverse engineering

Course Description

NX 12.0
CAD Surface Modeling Processes

Course Code	TRCT2225
User Level	Intermediate to Advanced
Language	English
Price	R$ 2.750,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Surface Modeling Processes** course is designed to cover the process of how to create freeform parts that update reliably and shift smoothly to the manufacturing application. As a second tier course Surface Modeling Workflows builds on the tools you deployed as a result of attending the NX CAD Fundamental Workflows course. The real-world experience of the Siemens instructors aids students in transferring knowledge gained through this single course to their job resulting in faster time to productivity.

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• Convert surfaces into solid models.
• Add draft to molded and cast part models.
• Deform parts using Global Shaping.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • Engineers and designers that need to create, edit, and analyze curves and freeform shapes used in part design.

PREREQUISITES

<P>Required courses:</P>
CAD Fundamental Processes (TRCT2205)
<P>Or

COURSE TOPICS

Day 1

• Introduction to surface modeling processes
• Using 3D curves as construction geometry
• Creating freeform shapes from splines

Day 2

• Using mesh surfaces to define primary features
• Styling shapes to build sculpted surfaces

<a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?pID=TR10051_____NX___10.0___
5000">Essentials for NX Designers (TR10051)

Or

<a
href="http://training.plm.automation.siemens.com/course
s/iltdescription.cfm?pID=TRCT2210_____NX___11.0__
_5000">CAD FastStart for Experienced 3D CAD
Users(TRCT2210)

Or

Successful completion of Designing Parts in NX
prerequisite assessment on Learning Advantage (score
>70%). Learning Advantage courses can also be used
to prepare for the prerequisite assessment.

Other recommendations:

NX domain knowledge
NX modeling and sketching
</P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX
12.0.1 installed.

• Sweeping sections to start a design

Day 3

• Building exact geometry to define irregular shapes
• Overbuilding and combining surfaces to build a part

Day 4

• Defining transitional geometry between shapes
• Analyzing the quality of freeform geometry

Day 5

• Using surfaces to add definition to a solid model
• Deforming surfaces for manufacturing processes
• Optional: Working with raster images
• Optional: Introduction to reverse engineering

Course Description

Teamcenter 10.1

Data Migration using Bulk Loader Solutions (G2H)

Course Code	TRCT2315-GH
User Level	Intermediate
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Data Migration using Bulk Loader Solutions** course, an exclusive offering by the Siemens US Training team, provides for rapid data importing into Teamcenter unified architecture. This course will review the use of Bulk Loader tools, required data format, and validation of data for import. The primary use case for this course is migrating 3rd party data to a Teamcenter environment using the CSV2TCXML conversion tool and Bulk Loader.

This course is required to receive an access key. This is the same access key for both Site Consolidation and Data Migration using Bulk Loader Solutions courses

This course is compatible with Teamcenter versions 10.1 and 11.2

WHO SHOULD ATTEND	COURSE TOPICS

Migration engineers

Day 01

PREREQUISITES

• Introduction and Course Overview
• Overview of the Bulk Loader Process
• Overview of CSV2TCXML Converter
• Converting Legacy Data into Low Level TcXML
• Bulk Loading data into Teamcenter use cases

Required courses:
 • Business Modeler Administration (TRCT2455)
 • Managing PLMXML/TCXML Transfer Modes
(TR200ES16L)

 • Students can replace the Managing PLMXML/TCXML
Transfer Modes (TR200ES16L) prerequisite with the
successful completion of the Managing Administration
Data *(TRCT2450)* course.
 • Students can replace the TRCT2455 - Business
Modeler Administration course with the successful
completion of the Application and Data Model
Administration Advisor in Learning Advantage (score
>70%). Learning Advantage courses can also be used

Course Description

NX 10.0

CAD Progressive Die Wizard Processes (G2H)

Course Code	TRCT2335-GH
User Level	Intermediate to Advanced
Language	English
Price	$5,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Progressive Die Wizard Processes, an exclusive offering by the Siemens US Training team, will help expert NX tool designers acquire the skills to significantly reduce progressive die design lead time through **Progressive Die Wizard** automation. The curriculum mimics common tasks used in die construction and is reinforced using hands-on activities.

WHO SHOULD ATTEND	COURSE TOPICS

Progressive die designers & product design engineers who create progressive die tooling using the Progressive Die Wizard software application

Day 1

 • Staged part preperation

PREREQUISITES

Day 2

Required courses:
 • CAD Advanced Processes (TRCT2220-TC)

• Beginning tooling projects
• Blank generator
• Blank layout
• Scrap design
• Strip layout

Or
 • Intermediate NX Design and Assemblies(TR10056-TC)

Day 3

 • Die base management

Course Description

• Standard parts management
• Piercing and forming insert design

• [CAD FastStart for Experienced 3D CAD Users](TRCT2210-TC)

Day 4

Or

• Progressive Die Wizard design tools

• [Introduction to NX for Experienced Users(](TR13155-TC)

Day 5

Or

• Finishing details and tooling validation
• Drawings
• Optional: Workflow management

• Successful completion of Intermediate Design and Assemblies prerequisite advisor on the Learning Advantage (must have score of >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor (e.g. NX Essentials, Feature Modeling - Fundamentals, Sketcher)

• Have a basic understanding of progressive die design

• It would be helpful to take the NX Sheet Metal course, but it is not required
• Understand these concepts: modeling in NX, and NX assembly concepts.
• Have a working knowledge of the NX interface, sketch creation and NX assemblies

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 10.0

CAD Routing Mechanical (G2H)

Course Code	TRCT2340-GH
User Level	Beginner to Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Routing Mechanical, an exclusive offering by the Siemens US Training team, teaches you to utilize the tools used to quickly define piping paths placed around and through other NX assemblies, to assign NPS stock to these paths, and to qualify and place standard parts (for example, flanges valves, and pipe tees). These subassemblies typically define the systems that provide process piping, disposal of waste, and structural support. The course also includes a section on developing logical diagrams.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or

 • Essentials for NX Designers (TR10051-TC)

Or

 • Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

The student should have basic knowledge of defining and managing assemblies in NX.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Linear paths
• Routings with Heal path
• Qualifying Parts
• Routings with Parts
• Routings with Stock

Day 2

• Managing Routing Assemblies
• Managing Part Selections
• Runs and Spools
• Routing Systems Diagramming

Course Description

NX 11.0

CAD Routing Mechanical (G2H)

Course Code	TRCT2340-GH
User Level	Beginner to Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Routing Mechanical, an exclusive offering by the Siemens US Training team, teaches you to utilize the tools used to quickly define piping paths placed around and through other NX assemblies, to assign NPS stock to these paths, and to qualify and place standard parts (for example, flanges valves, and pipe tees). These subassemblies typically define the systems that provide process piping, disposal of waste, and structural support. The course also includes a section on developing logical diagrams.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or

 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

The student should have basic knowledge of defining and managing assemblies in NX.

COURSE TOPICS

Day 1

• Linear paths
• Routings with Heal path
• Qualifying Parts
• Routings with Parts
• Routings with Stock

Day 2

• Managing Routing Assemblies
• Managing Part Selections
• Runs and Spools
• Routing Systems Diagramming

Course Description

NX 12.0

CAD Routing Mechanical (G2H)

Course Code	TRCT2340-GH
User Level	Beginner to Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Routing Mechanical teaches you to utilize the tools used to quickly define piping paths placed around and through other NX assemblies, to assign NPS stock to these paths, and to qualify and place standard parts (for example, flanges valves, and pipe tees). These subassemblies typically define the systems that provide process piping, disposal of waste, and structural support. The course also includes a section on developing logical diagrams.

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205)

Or

 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

COURSE TOPICS

Day 1

• Linear paths
• Routings with Heal path
• Qualifying Parts
• Routings with Parts
• Routings with Stock

Day 2

• Managing Routing Assemblies
• Managing Part Selections
• Runs and Spools
• Routing Systems Diagramming

Course Description

The student should have basic knowledge of defining
and managing assemblies in NX.

• Student Guide
• Activity Material

NX 12.0

CAD Model Based Definition using PMI (G2H)

Course Code	TRCT2345-GH
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Model Based Definition using PMI, an exclusive offering by the Siemens US Training team, is designed for users who plan to use the Product and Manufacturing Information (PMI)
application to add manufacturing and other information to a part model. You can attach information needed by downstream applications such as tooling, manufacturing, inspection, and shipping. The information can be text, dimensions, GD & T, or symbols.

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
• CAD Basic Processes (TRCT2215)

COURSE TOPICS

• Create and replace PMI
• PMI dimensioning
• Supplemental Geometry and PMI Annotation
• Specialized PMI
• Section Views
• Search and Reports
• Check PMI GD & T validity
• PMI data reuse

Course Description

Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Working knowledge of the following:

 • Navigating the NX interface
 • Controlling the visibility of objects using layers
 • Part file saving conventions
 • Standard practices for creating drawings
 • Experience working with drawing views and sheets
 • Using and applying geometric dimensioning and tolerancing

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Course Description

NX 10.0

CAD Model Based Definition using PMI (G2H)
With Teamcenter Integration

Course Code	TRCT2345-TCGH
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Class is taught in the Teamcenter Integration environment.

Model Based Definition using PMI, an exclusive offering by the Siemens US Training team, is designed for users who plan to use the Product and Manufacturing Information (PMI) application to add manufacturing and other information to a part model. You can attach information needed by downstream applications such as tooling, manufacturing, inspection, and shipping. The information can be text, dimensions, GD & T, or symbols.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
• Basic Design (TR10053-TC)

Or
• CAD Basic Processes (TRCT2215)

Or
• Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Working knowledge of the following:

• Navigating the NX interface
• Controlling the visibility of objects using layers
• Part file saving conventions

COURSE TOPICS

• Create and replace PMI
• PMI dimensioning
• Supplemental Geometry and PMI Annotation
• Specialized PMI
• Section Views
• Search and Reports
• Check PMI GD & T validity
• PMI data reuse

Course Description

• Experience working with drawing views and sheets
• Using and applying geometric dimensioning and tolerancing

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 10 installed.

NX 1847

CAD Model Based Definition using PMI (G2H)

Course Code	TRCT2345TCGH
User Level	Beginner
Language	English
Price	$1,100.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Model Based Definition using PMI, is designed for users who plan to use the Product and Manufacturing Information (PMI) application to add manufacturing and other information to a part model. You can attach information needed by downstream applications such as tooling, manufacturing, inspection, and shipping. The information can be text, dimensions, GD & T, or symbols.

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
• CAD Basic Processes (TRCT2215)

COURSE TOPICS

• Create and replace PMI
• PMI dimensioning
• Supplemental Geometry and PMI Annotation
• Specialized PMI
• Section Views
• Search and Reports
• Check PMI GD & T validity
• PMI data reuse
• Technical data packages

Or

Successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Working knowledge of the following:

 • Navigating the NX interface
 • Controlling the visibility of objects using layers
 • Part file saving conventions
 • Standard practices for creating drawings
 • Experience working with drawing views and sheets
 • Using and applying geometric dimensioning and tolerancing

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Active Workspace 3.4

Using Active Workspace

For Users, Data Model Administrators and Application Administrators

Course Code	TRCT2360
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Using Active Workspace** course will cover the fundamental using topics of Active Workspace.

Students will learn how to navigate the interface and learn the various commands and terminology associated with Active Workspace. Students will perform a variety of tasks, including creating and modifying data, performing searches, viewing and working with visualization data, and performing tasks and submitting workflows.

WHO SHOULD ATTEND	COURSE TOPICS

Who should attend: Teamcenter Users whom work with and author data.

Day 01

PREREQUISITES

Not Available

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

The course is developed against Teamcenter 11.4.

Course Topics — Day 01

• Introduction and Course Overview
• Intro to Active Workspace
• Active Workspace Basics
• Working with Data
• Search for Data
• Working with Structures
• Working with Visualization Data
• Workflows and Tasks

Course Description

NX 10.0

CAD Large Assemblies Management (G2H)
With Teamcenter Integration

Course Code	TRCT2390-TCGH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

 The **Large Assemblies Management** course, an exclusive offering by the Siemens US Training team, covers cloning, sequencing, assembly cut, arrangements, reference sets, component grouping, representations, and weight management. The course includes Advance Assemblies license functions in addition to standard design functions in the NX software.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers
• Designers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Working in large assemblies
• Manipulating assemblies using component groups and zones
• Creating representations
• Using Wrap Assembly and Linked Exterior features

Day 2

• Cloning assembly structures
• Analyzing Assembly Clearances
• Advanced Weight Management

Day 3

• Configuring an assembly using arrangements
• Assembly Sequencing and Motion
• Defining Assembly Cuts
• Optional: Using reference sets to display components

Course Description

NX 12.0
CAD Large Assemblies Management (G2H)
With Teamcenter Integration

Course Code	TRCT2390-TCGH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

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WHO SHOULD ATTEND

• Engineers
• Designers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or successful completion of Essentials for Designers prerequisite assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

 • Working in large assemblies
 • Manipulating assemblies using component groups and zones
 • Creating representations
 • Using Wrap Assembly and Linked Exterior features

Day 2

 • Cloning assembly structures
 • Analyzing Assembly Clearances
 • Advanced Weight Management

Day 3

 • Configuring an assembly using arrangements
 • Assembly Sequencing and Motion
 • Defining Assembly Cuts
 • Optional: Using reference sets to display components

Course Description

NX 11.0

CAD Product Design and Robust Modeling Techniques
With Teamcenter Integration using Active Workspace

Course Code	TRCT2395TC
User Level	Intermediate to Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Product Design and Robust Modeling Techniques** course, an exclusive offering by the Siemens US Training team, is designed to sustain the momentum launched in earlier NX courses. As a second tier course, Product Design and Robust Modeling Techniques aims to capitalize on the designers heightened skill level and propel his or her job productivity to the next level. This course includes key productivity skills that delve deeper into the advanced and associative modeling concepts.

As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the NX product suite. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Use Feature Groups to structure part models so they can be easily understood and modified by others
• Create models that support resilient feature updates and reduce the costly rework effort of rebuilding models
• Edit parametric part models when design intent changes occur
• Optimize and study a design to automatically achieve design goals based on various input parameters
• Define common design components for reuse within other design assemblies
• Configure complex products into simple and reusable product templates

This course is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Engineers
• Designers
• CAD/CAM Managers
• CAD Administrators

PREREQUISITES

Required courses:
 • CAD FastStart for Experienced 3D CAD Users (TRCT2210-TC)

Or
• CAD Advanced Processes (TRCT2210-TC)

COURSE TOPICS

Day 1

 • Documenting design intent
 • Robust modeling techniques

Day 2

 • Editing parametric models
 • Optimizing a design

Day 3

 • Advanced usage of Part Families
 • Controlling models with product templates
 • Optional: Cloning assembly structures

Course Description

 • Optional: Validating a product design

 • Or successful completion of **Designing parts in NX Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.

 • Solid foundation of design in NX
 • Working knowledge of NX sketching, assemblies and interpart modeling

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1
For **LIVE!** classes, customers are required to have NX 11.0.1 installed.

The Product Template Studio Author license is required for the "Controlling models with product templates" lesson."

Course Description

NX 12.0

CAD Product Design and Robust Modeling Techniques
With Teamcenter Integration using Active Workspace

Course Code	TRCT2395TC
User Level	Intermediate to Advanced
Language	English
Price	$1,800.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

 The **Product Design and Robust Modeling Techniques** course, is designed to sustain the momentum launched in earlier NX courses. As a second tier course, Product Design and Robust Modeling Techniques aims to capitalize on the designers heightened skill level and propel his or her job productivity to the next level. This course includes key productivity skills that delve deeper into the advanced and associative modeling concepts.

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 • Create models that support resilient feature updates and reduce the costly rework effort of rebuilding models
 • Edit parametric part models when design intent changes occur
 • Optimize and study a design to automatically achieve design goals based on various input parameters
 • Define common design components for reuse within other design assemblies
 • Configure complex products into simple and reusable product templates

This course is taught in the Teamcenter Integration environment using Active Workspace embedded in NX.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

 • Engineers
 • Designers
 • CAD/CAM Managers
 • CAD Administrators

PREREQUISITES

Required courses:
 • CAD FastStart for Experienced 3D CAD Users (TRCT2210-TC)

Or
 • [CAD Advanced Processes](#) (TRCT2210-TC)

COURSE TOPICS

Day 1

 • Documenting design intent
 • Robust modeling techniques

Day 2

 • Editing parametric models
 • Optimizing a design

Day 3

 • Advanced usage of Part Families
 • Controlling models with product templates
 • Optional: Cloning assembly structures

• Optional: Validating a product design

• Or successful completion of **Designing parts in NX Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessments.

• Solid foundation of design in NX
• Working knowledge of NX sketching, assemblies and interpart modeling

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

The Product Template Studio Author license is required for the "Controlling models with product templates" lesson."

Course Description

NX 1847

CAD Drafting Processes

Course Code	TRCT2420
User Level	Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Learn how to use the NX Drafting application to create standards-compliant detailed engineering drawings that are fully associated to your 3D model.

You will configure all drafting preferences using a preset standards file, create multi-sheet drawings with base and derived views, place associated dimensions and annotations on the drawing, and customize the drawing with view-dependent geometry and style changes.

You will also explore techniques for working with assemblies and Product and Manufacturing Information (PMI).

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• The Drafting Processes course is intended for design engineers, drafters, and CAD/CAM managers who need to manage and create drawings in NX.

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or

 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Fundamental knowledge of modeling concepts, including the use of expressions, PMI, and part attributes.
 • Advanced knowledge of assembly concepts, including the master model concept, assembly load options, exploded views, and arrangements.
 • General drafting skills. Students do not need to be exposed to the Drafting environment prior to taking the

COURSE TOPICS

Day 1

 • Create master model drawings
 • Define drawing sheets
 • Create, update, and align views
 • Add centerline symbols

Day 2

 • Add dimensions to drawing views
 • Build notes, labels, and other drawing annotations
 • Define GD & T symbols for a product
 • Create surface finish and weld symbols
 • Add section views to drawing sheets

Day 3

 • Define detail and broken views
 • Inherit PMI data in drawing views
 • Create a bill of materials using Parts Lists
 • Place assembly arrangements on drawing sheets
 • Build exploded views of assembly structures
 • Optional: Define ordinate dimensions and hole tables

comprehensive look at the NX drafting environment.

Other recommendations:

• [NX CAD Fundamental Processes (TRCT2205)](#)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

For **LIVE!** classes, customers are required to have NX 1847 installed.

Simcenter 3D 2019.1

Pre/Post Fundamentals

Course Code	TRCT2425
User Level	Advanced
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

This course introduces the Simcenter Pre/Post (also called Engineering Desktop) product, which provides finite element modeling and results visualization. It covers the details of the FEA processes from model preparation, mesh generation and manipulation, material definition, boundary conditions, FEA model checking and solving, to post-processing the results.

WHO SHOULD ATTEND

Design engineers and analysts who want to learn the details of how to perform finite element analysis using this software.

PREREQUISITES

Required courses:
• CAD Basic Processes (TRCT2215)

• Successful completion of the Basic Design Advisor in

COURSE TOPICS

• Build and analyze a finite element model with Pre/Post
• Simplify a model in preparation for meshing
• Generate a mesh on the model
• Apply boundary conditions to the model
• Select materials and physical properties for the model
• Use fields and expressions to apply boundary conditions
• Post-process the model and generate reports

Course Description

Advantage courses can also be used to prepare for the prerequisite assessment.

Other requirements:
 • Participant needs to have a basic understanding of finite element analysis principles and a working knowledge of NX modeling.

Other recommended courses:
 • NX CAD Fundamental Processes (TRCT2205)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Teamcenter 11.4

Customizing Teamcenter

For Developers

Course Code	TRCT2435
User Level	Advanced
Language	English
Price	$3,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
LIVE! Online Duration	4 hours each day for 10 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Customizing Teamcenter** course provides lessons on customizing standalone ITK and SOA utilities, the Teamcenter server, and the Teamcenter Rich Clients.

In this course, students will learn about the Integrated Toolkit (ITK) and Service Oriented Architecture (SOA) APIs and how to build standalone command line utilities to invoke custom code written in either ITK or SOA. Students will setup development environments in Microsoft Visual Studio and Eclipse to learn how to debug and execute their utilities. Students will also learn how to use ITK and SOA to extend the server functionality by creating Operation Extensions *(Workflow Handlers)*, Metamodel Operations, and Services inside of the Business Modeler and various deployment methods to get their customizations to their clients/server. Finally, students will learn how to create custom plugins using Eclipse to build custom interface components for the Rich Clients to invoke server side code. A deep dive into Style Sheets to invoke those customizations and to influence the display of data in the clients will also be discussed.

This course is compatible with Teamcenter versions 9, 10, and 11 at all point releases.

WHO SHOULD ATTEND	COURSE TOPICS

• Developers

Day 01

PREREQUISITES	

• Introduction and Course Overview
• ITK Overview and Batch Programs

Required courses:
 • Business Modeler Administration (TRCT2455)

Day 02

Or
 • Successful completion of the Application and Data Model Administration Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Application Administration** and **Data Model Administration** self-paced course)

• SOA Overview and Batch Programs
• Server Customization Overview

Day 03

Other optional recommendations:

• Operation Extensions *(Workflow Handlers)*
• Property Operations

for compiling, executing programs
 • Working knowledge of core programming techniques.
 • Familiarity with development environments and
debugging capabilities and tactics.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the
LIVE! Online Training environment, there are no local
software installation requirements.

Day 04

• Application Extensions
• Services and Service Operations
• Rich Client Customization

Day 05

• Rich Client Style Sheets
• Appendix Topics

Course Description

Teamcenter 11.4

Using Teamcenter Basics

Course Code	TRCT2440
User Level	Beginner
Language	English
Price	$550.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
LIVE! Online Duration	4 hours each day for 2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Using Teamcenter Basics** course introduces the concept of product lifecycle management. You will become familiar with the rich client user interface and learn the basics of using Teamcenter.

WHO SHOULD ATTEND	COURSE TOPICS

Consumers

- Overview of Teamcenter terms and concepts
- Use rich client user interface to perform basic tasks
- Locate, view, and report on product data
- Create Teamcenter items and update properties
- Protect and access product data

PREREQUISITES

There are no prerequisites for this course.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Course Description

Teamcenter 11.4

Using Teamcenter Fundamentals

Course Code	TRCT2445
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Using Teamcenter Fundamentals** course introduces the concept of product lifecycle management. It provides instruction on working in the rich client interface and the basics of using a suite of Teamcenter applications, including My Teamcenter, Structure Manager, embedded viewer, Classification, Workflow Viewer, and Change Manager.

NOTE: This course is also applicable to versions 9.1, 10.1 and 11.2 of Teamcenter.

WHO SHOULD ATTEND

The primary audience for this course are users who design, configure and release data using Teamcenter.

PREREQUISITES

There are no prerequisites for this course.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

COURSE TOPICS

Day 1

• Introduction to Teamcenter
• Working in My Teamcenter
• Working with items in Teamcenter
• Viewing and modifying object properties
• Managing your information using Teamcenter datasets
• Applying data security practices

Day 2

• Performing and managing searches
• Working in projects
• Opening and viewing product structures
• Controlling assembly configuration views
• Creating and managing product structures
• Working with product structures

Day 3

• Navigating the relation hierarchy of an object
• Classifying and using standard product data
• Viewing and working with visualization files
• Initiating a workflow
• Managing workflow task assignments

Day 4

• Managing Teamcenter data through the Microsoft Office integration
• Using Change Manager
• Creating and managing change objects
• Elaborating and executing the change

Teamcenter 11.4

Using Teamcenter Fundamentals

Course Code	TRCT2445
User Level	Beginner
Language	Spanish
Price	$2,000.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> El curso Uso de los fundamentos de Teamcenter introduce el concepto de gestión del ciclo de vida del producto. Proporciona instrucciones sobre cómo trabajar en la interfaz de cliente enriquecido y los conceptos básicos sobre el uso de un conjunto de aplicaciones Teamcenter, que incluyen My Teamcenter, Structure Manager, visor integrado, Clasificación, Visor de flujo de trabajo y Change Manager.

<p> NOTA: Este curso también es aplicable a las versiones 9.1, 10.1 y 11.2 de Teamcenter. </p>

WHO SHOULD ATTEND	COURSE TOPICS

The primary audience for this course are users who design, configure and release data using Teamcenter.

Day 1

PREREQUISITES

• Introduction to Teamcenter
• Working in My Teamcenter
There are no prerequisites for this course.
• Working with items in Teamcenter
• Viewing and modifying object properties
• Managing your information using Teamcenter datasets
• Applying data security practices

PROVIDED COURSE MATERIAL

Day 2

Course Description

• Performing and managing searches
• Working in projects
• Opening and viewing product structures
• Controlling assembly configuration views
• Creating and managing product structures
• Working with product structures

Day 3

• Navigating the relation hierarchy of an object
• Classifying and using standard product data
• Viewing and working with visualization files
• Initiating a workflow
• Managing workflow task assignments

Day 4

• Managing Teamcenter data through the Microsoft Office integration
• Using Change Manager
• Creating and managing change objects
• Elaborating and executing the change

• Student Guide
• Activity Material

Course Description

Teamcenter 11.4

Managing Administration Data

For Application Administrators

Course Code	TRCT2450
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Managing Administration Data course addresses the configuration of Teamcenter Administration Data to meet your company's needs through the Rich Client. This course represents role focused set of topics which are geared directly for application administrators.

In this course you will learn the fundamentals of how to manage and create administration data in Teamcenter. Topics covered in this course will include configuring and managing your company's Organization, Access Permissions, Preferences Values, Project Data, Searches, Import and Export Rules, Reports, Commands, Workflows, Stylesheets and how to migrate to additional sites, or run reports against that data.

The topics in this course are compatible with the 9, 10, and 11 versions of Teamcenter at all point releases.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Application Administrators

• System Administrators

PREREQUISITES

Required courses:
 • Using Teamcenter Basics (TRCT2440)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

 • Course Overview & Introduction
 • Organization
 • Access Permissions
 • Preferences

Day 2

 • Projects
 • Saved Queries
 • Importing and Exporting Data
 • Building Reports

Day 3

 • Command Suppression
 • Workflows

Day 4

 • Stylesheets
 • Administration Data Tools

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

Teamcenter 11.4

Business Modeler Administration

For Data Model Administrators & Developers

Course Code	TRCT2455
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Business Modeler Administration course addresses configuration of the Teamcenter data model to meet your company's needs through the Business Modeler IDE. This course represents role focused set of topics from the 1st half of the Application and Data Model Administration course which is geared directly for data model administrators and developers.

In this course you will learn the fundamentals of what the Business Modeler IDE is, how to extend your data model, and deployment techniques and options for getting the changes into your development, QA, and Production sites. Topics covered in this course will include an introduction to the Business Modeler IDE, extending the data model with new elements *(for example: business object, properties, Lists of Values (LOVs), Rules, and much more...)*, deployment strategies, and troubleshooting, preferences and utilities references.

The majority of the concepts and topics in this course are compatible with versions 9, 10 and 11 of Teamcenter. However, the Administration Data Tools lesson is a new feature in the Teamcenter 11 software release.

WHO SHOULD ATTEND	COURSE TOPICS

• Data Model administrators

• Database Administrators

• System Administrators

• Course Overview & Introduction

• BMIDE Basics

Course Description

• Data Model Developers

• Extending the Data Model

• Business Objects

• Business Objects continued...

• BMIDE Properties

• Icons

• Lists of Values

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

• Lists of Valuescontinued...

• Options

• BMIDE Rules

ATTENDANCE REQUIREMENTS

When this class is delivered via cloud technology in the LIVE! Online Training environment, there are no local software installation requirements.

• Rules continued...

• Extension Operations

• BMIDE Reports

• Live Updates

• Appendix topics *(Troubleshooting, Utilities, & Preferences)*

Course Description

Teamcenter 11.4

The expert series for Teamcenter

Course Code	TRCT2465
User Level	Advanced
Language	English
Price	$22,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	100 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The expert series for Teamcenter training is the sole property of Siemens PLM Software. As the Original Equipment Manufacturer, Siemens PLM Software owns exclusive rights to the distribution, duplication and delivery of these courses.

Over the course of approximately twenty weeks, students will attend training center classes in a SPLM Training center and via distance learning (**NOTE:** there is self-study and project work done within this duration as well). This program will cover a wide array of Teamcenter topics that will provide both new and seasoned PLM support staff with the knowledge required for practical application. Unique to the expert series is project time outside of the classroom in which the student is given relevant tasks to perform. Topics include Teamcenter and Active Workspace Installation, Usage, Administration, and Customization, which will reinforce the learning acquired in the classroom. The practice weeks are remotely proctored by a Siemens PLM expert in order to provide the student with direct support should they come up against any challenges in applying their new skills and knowledge. The practice weeks are also supported using the Siemens PLM training cloud environment so the student's company environments are not required for practice.

To see when the individual sections of this program are available, please select this link to Class Finder.

NOTE: While Teamcenter Certification is not part of the expert series for Teamcenter program, the expert series for Teamcenter program will help prepare someone for Teamcenter Certification if they choose to pursue it later. Students who enroll for and complete the expert series for Teamcenter will receive a voucher which may be redeemed for a Teamcenter Certification (TR18070) exam at a later date. We highly recommend **production level** application of the topics covered throughout the program prior to pursuing certification.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Teamcenter Application Administrators

Teamcenter Data Model Administrators

Teamcenter System Administrators

Teamcenter Support Staff

PREREQUISITES

COURSE TOPICS

Using and Installation portion 1: Center-based Classroom and Homework Week
 • Teamcenter Introduction
 • Rich Client Interface Overview
 • Working with Items
 • Working with Datasets (Files)
 • Working with Data Security
 • Searching for Data
 • Introduction to Workflows
 • Installing the Online Help

Course Description

Application administration experience, system administration experience, a basic knowledge of Windows operating system commands, and a basic knowledge of Microsoft Office

• Student Guide
• Activity Material

A Siemens PLM training cloud will be provided (as needed) throughout the course.

• Install the License Server
• Install the Database (Oracle / SQL)
• Install the Corporate Server
• Install Rich Clients
• Setup and Configure a 4-Tier Architecture
• Install the Business Modeler IDE
• Configure the File Management System
• Additional topics on patching, upgrades and integrations

Business Modeler IDE portion 2: Virtual Classroom and Homework Week
• Business Modeler Overview
• Extending the Data Model (Deployments)
• Business Objects (Items, Forms, Datasets and More
• Property Configuration
• Icon Configuration
• List of Values (LOVs)
• Option Extensions
• Rules (Naming, Relationship, Deep Copy and More
• Extension Operations for Automation
• Business Modeler IDE Reports
• Live Updates

Managing Administration Data portion 3: Virtual Classroom and Homework Week
• Administration Data Overview
• Organization
• Access Permissions
• Preferences
• Projects
• Saved Queries
• Importing and Exporting Data
• Workflows
• Style sheets
• Administration Data Tools

Teamcenter Customization portion 4: Center-based Classroom and Homework Week
• Customization Introduction
• ITK Programming (Command line, APIs, and IDE Setup)
• SOA Programming (Command line, APIs, and Eclipse Setup for testing
• Business Modeler for Customization Setup
• Custom Extensions (Post-Action, Workflow Handlers)
• Custom Operations
• Services
• Rich Client Customization
• Additional topics with Style sheet Customization

Active Workspace (Using, Installation, Configuration, Customization) portion 5: Center-based Classroom and Homework Week
• Using Active Workspace Interface

Course Description

• Installing and Patching Active Workspace
• Installing the Active Workspace Client
• Setting up the Indexer for Searching
• Configuring Gateway Tiles
• Configuring Style Sheets
• Customizing the Client: Declarative Customization
• Customizing the Client with Icons
• Customizing the Client with CSS

Final Review Week
• Review the Project solutions and answer questions. Additional Deep Dive topics and reference information will be provided.

Course Description

Teamcenter 11.2

Schedule Manager

Course Code	TRCT2470
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

The **Schedule Manager** course provides instruction on how to use the Schedule Manager application to manage schedules and integrate with other Teamcenter applications including Workflow.

WHO SHOULD ATTEND

Project managers and Teamcenter administrators who configure or use Teamcenter Schedule Manager

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or the equivalent **Introduction to Teamcenter** self-paced courses on Learning Advantage.

Or completion of the **Introduction to Teamcenter Advisor** on Learning Advantage with a score greater than 70%.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Configure Schedule Manager integrations
• Create schedules, tasks, and milestones
• Create task dependencies and constraints
• Assign tasks and manage schedule resources
• Apply baselines to schedules and tasks
• Manage schedules by critical path
• Create notifications and subscriptions
• Add schedule deliverables and workflow tasks
• Create and use schedule templates
• Integrate schedules, requirements, and workflows

Course Description

Teamcenter 11.2

Schedule Manager

Course Code	TRCT2470
User Level	Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Schedule Manager** course provides instruction on how to use the Schedule Manager application to manage schedules and integrate with other Teamcenter applications including Workflow.

WHO SHOULD ATTEND

Project managers and Teamcenter administrators who configure or use Teamcenter Schedule Manager

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to Teamcenter Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite advisor. (**Introduction to Teamcenter** self-paced course)

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

COURSE TOPICS

 • Configure Schedule Manager integrations
 • Create schedules, tasks, and milestones
 • Create task dependencies and constraints
 • Assign tasks and manage schedule resources
 • Apply baselines to schedules and tasks
 • Manage schedules by critical path
 • Create notifications and subscriptions
 • Add schedule deliverables and workflow tasks
 • Create and use schedule templates
 • Integrate schedules, requirements, and workflows

Course Description

Teamcenter 11.2

Schedule Manager

Course Code	TRCT2470
User Level	Intermediate
Language	Spanish
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> El curso <strong> Schedule Manager </ strong> proporciona instrucciones sobre cómo usar la aplicación Schedule Manager para administrar programas e integrar con otras aplicaciones de Teamcenter, incluido Workflow. </ p>

WHO SHOULD ATTEND	COURSE TOPICS

<p> Administradores de proyectos y administradores de Teamcenter que configuran o usan Teamcenter Schedule Manager </ p>

PREREQUISITES

<P>Required courses:</P>
Introduction to Teamcenter (TR25100)
<P><b> O </ b>

 Finalización exitosa de la Introducción al Teamcenter Advisor en Learning Advantage (puntaje> 70%). Los cursos de Learning Advantage también se pueden utilizar para prepararse para el asesor de requisitos previos. (<strong> Introducción a Teamcenter </ strong> curso a su propio ritmo) </ li>
</ ul></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Configure Schedule Manager integrations
• Create schedules, tasks, and milestones
• Create task dependencies and constraints
• Assign tasks and manage schedule resources
• Apply baselines to schedules and tasks
• Manage schedules by critical path
• Create notifications and subscriptions
• Add schedule deliverables and workflow tasks
• Create and use schedule templates
• Integrate schedules, requirements, and workflows

Course Description

NX 11.0

CAD Sheet Metal Modeling Processes (G2H)

Course Code	TRCT2480-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Learn how to use the Sheet Metal application for creating machinery, enclosures, brackets, and other parts normally manufactured with a brake press. You will learn how to create base features like tabs and contour flanges, and build on them with more advanced features such as gussets and louvers.

You will also learn about Advanced Sheet Metal commands.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

This course is suited for engineers, designers, and CAD/CAM managers who will use the Sheet Metal application.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205)

Or

 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written against NX 11.0.1

COURSE TOPICS

Day 1

 • Identifying Sheet Metal workflows
 • Learning about sheet metal preferences
 • Creating sheet metal parts using base features, bends, and flanges
 • Closing corners, creating cutouts and deform features

Day 2

 • Flattening sheet metal parts
 • Creating advanced sheet metal features
 • Analyzing sheet metal forming
 • Working with non-sheet metal parts imported from other CAD systems

For LIVE! classes, customers are required to have NX
11.0.1 installed.

NX 12.0

CAD Sheet Metal Modeling Processes (G2H)

Course Code	TRCT2480-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Learn how to use the Sheet Metal application for creating machinery, enclosures, brackets, and other parts normally manufactured with a brake press. You will learn how to create base features like tabs and contour flanges, and build on them with more advanced features such as gussets and louvers.

You will also learn about Advanced Sheet Metal commands.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

This course is suited for engineers, designers, and CAD/CAM managers who will use the Sheet Metal application.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205)

Or

 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide

COURSE TOPICS

Day 1

 • Identifying Sheet Metal workflows
 • Learning about sheet metal preferences
 • Creating sheet metal parts using base features, bends, and flanges
 • Closing corners, creating cutouts and deform features

Day 2

 • Flattening sheet metal parts
 • Creating advanced sheet metal features
 • Analyzing sheet metal forming
 • Working with non-sheet metal parts imported from other CAD systems

Course Description

• Activity Material

NX 1847

CAD Sheet Metal Modeling Processes (G2H)

Course Code	TRCT2480-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

Learn how to use the Sheet Metal application for creating machinery, enclosures, brackets, and other parts normally manufactured with a brake press. You will learn how to create base features like tabs and contour flanges, and build on them with more advanced features such as gussets and louvers.

You will also learn about Advanced Sheet Metal commands.

WHO SHOULD ATTEND	**COURSE TOPICS**

WHO SHOULD ATTEND

This course is suited for engineers, designers, and CAD/CAM managers who will use the Sheet Metal application.

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205)

Or
 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the

COURSE TOPICS

Day 1

 • Identifying Sheet Metal workflows
 • Learning about sheet metal preferences
 • Creating sheet metal parts using base features, bends, and flanges
 • Closing corners, creating cutouts and deform features

Day 2

 • Flattening sheet metal parts
 • Creating advanced sheet metal features
 • Analyzing sheet metal forming
 • Working with non-sheet metal parts imported from other CAD

systems

• Student Guide
• Activity Material

NX 11.0

CAD Sheet Metal Modeling Processes

Course Code	TRCT2480
User Level	Intermediate
Language	Portuguese
Price	R$ 944,00 (BRL) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, Brazil (training.brazil.plm@siemens.com)

Learn how to use the Sheet Metal application for creating machinery, enclosures, brackets, and other parts normally manufactured with a brake press. You will learn how to create base features like tabs and contour flanges, and build on them with more advanced features such as gussets and louvers.

You will also learn about Advanced Sheet Metal commands.

WHO SHOULD ATTEND	**COURSE TOPICS**
This course is suited for engineers, designers, and CAD/CAM managers who will use the Sheet Metal application.	Day 1 - Identifying Sheet Metal workflows - Learning about sheet metal preferences - Creating sheet metal parts using base features, bends, and flanges - Closing corners, creating cutouts and deform features Day 2 - Flattening sheet metal parts

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205)

Or
 • Successful completion of **Designing parts in NX**

Course Description

Learning Advantage courses can also be used to prepare for the prerequisite assessment.

• Student Guide
• Activity Material

This course was written against NX 11.0.1

For LIVE! classes, customers are required to have NX 11.0.1 installed.

Creating advanced sheet metal features
Analyzing sheet metal forming
Working with non-sheet metal parts imported from other CAD systems

Course Description

Teamcenter 11.4

Managing Requirements using Teamcenter (G2H)

Course Code	TRCT2485-GH
User Level	Intermediate
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href=""http://training.plm.automation.siemens.com/courses/guarantee.cfm"">Here for more information about G2H
courses.</p>

<p>The Managing Requirements using Teamcenter course describes the concepts associated with
requirements management. The course includes instruction on: creating specifications, requirements, and derived requirements;

WHO SHOULD ATTEND

 • Product Managers, Business Analysts, Solution
Architects, and Design Engineers
 • Persons responsible for completing tasks in the
systems engineering process related to: identifying and
reviewing product requirements; creating and
maintaining requirements and requirement specification
structures; and setting and evaluating traceability of
requirements throughout the product development
lifecycle

COURSE TOPICS

 • Use various methods to create requirements
 • Import and export requirements using Microsoft Word and
Excel
 • View and modify requirement contents and properties
 • Maintain requirements and requirement specification
structures
 • Record supplemental information using custom notes
 • Create relationships between requirements and system
components using trace links
 • Manage trace links and validate traceability between
requirements and architecture structures

PREREQUISITES

Required courses:
 • Introduction to Teamcenter (TR25100)

Or
 • Successful completion of the Introduction to
Teamcenter Advisor in Learning Advantage (score
>70%). Learning Advantage courses can also be used
to prepare for the prerequisite advisor. (**Introduction to
Teamcenter** self-paced course)

Other recommendations:

 • [Using Teamcenter](TR25150)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

NX 12.0

CAM Manufacturing Fundamentals

Course Code	TRCT2500
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Manufacturing Fundamentals** course is designed to expedite the student learning experience in the generation of tool paths for 2 and 3-axis milling and drilling applications. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces Siemens PLM's intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• NC/CNC programmer
• **CAM Express users ***

PREREQUISITES

Required courses:
• CAD Basic Processes (TRCT2215)

Or
• NX Basic Design (TR10053)

Or
• Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

** **NOTE for CAM Express Users**

COURSE TOPICS

Day 1

• Introduction and overview
• Basic manufacturing concepts
• Analyzing a manufacturing part
• Tools
• Operation Navigator
• Parent groups
• Cavity milling
• Machining with T-cutters
• Coordinate systems

Day 2

• Visualization (ISV)
• Planar milling
• Floor and wall milling

Day 3

• Manual drilling

Course Description

• Fixed axis contouring
• Engrave text
• Tool path information output
• Projects

 • You must first complete the self-paced tutorials supplied with CAM Express prior to attending the Manufacturing Fundamentals course.
 • The prerequisites of CAD Basic Processes (TRCT2215), Basic Design (TR10053) are not for CAM Express users.

• Student Guide
• Activity Material

This course was written and released against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Course Description

NX 12.0

CAM Manufacturing Fundamentals

Course Code	TRCT2500
User Level	Beginner
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

<p> El curso Fundamentos de fabricación está diseñado para agilizar la experiencia de aprendizaje de los estudiantes en la generación de trayectorias de herramientas para aplicaciones de fresado y taladrado de 2 y 3 ejes. Al igual que con cada curso desarrollado y enseñado por los profesionales de Siemens PLM Software, esta clase refuerza el conocimiento profundo de Siemens PLM sobre los desarrollos de software e instruye a los estudiantes en base a los principios subyacentes incorporados dentro del paquete de productos NX. </ P>

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• NC/CNC programmer
• **CAM Express users ****

PREREQUISITES

Required courses:
• CAD Basic Processes (TRCT2215)

Or
• [NX Basic Design](#) (TR10053)

Or
• Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

** NOTE for CAM Express Users
• You must first complete the self-paced tutorials supplied with CAM Express prior to attending the Manufacturing Fundamentals course.
• The prerequisites of CAD Basic Processes (TRCT2215), Basic Design (TR10053) are not for CAM Express users.

COURSE TOPICS

Day 1

• Introduction and overview
• Basic manufacturing concepts
• Analyzing a manufacturing part
• Tools
• Operation Navigator
• Parent groups
• Cavity milling
• Machining with T-cutters
• Coordinate systems

Day 2

• Visualization (ISV)
• Planar milling
• Floor and wall milling

Day 3

• Manual drilling
• Fixed axis contouring
• Engrave text
• Tool path information output
• Projects

Course Description

• Student Guide
• Activity Material

This course was written and released against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

NX 1847

CAM Manufacturing Fundamentals

Course Code	TRCT2500
User Level	Beginner
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Manufacturing Fundamentals** course is designed to expedite the student learning experience in the generation of tool paths for 2 and 3-axis milling and drilling applications. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces Siemens PLM's intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite.

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• NC/CNC programmer
• **CAM Express users****

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or
 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

COURSE TOPICS

Day 1

• Introduction and overview
• Basic manufacturing concepts
• Analyzing a manufacturing part
• Tools
• Operations and parent groups
• Cavity milling
• Machining with T-cutters
• Coordinate systems

Day 2

• Visualization (ISV)
• Planar milling
• Floor and wall milling

Course Description

Day 3

- Hole making
- Fixed axis contouring
- Engrave text
- Tool path information output
- Projects

** NOTE for Solid Edge CAM Pro users
 • You must first complete the self-paced tutorials supplied with Solid Edge CAM Pro prior to attending the Manufacturing Fundamentals course.
 • The prerequisites of CAD Basic Processes (TRCT2215), are not for Solid Edge CAM Pro users.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

Course Description

NX 12.0

CAM Turning Manufacturing Process

Course Code	TRCT2510
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Turning Manufacturing Process is the core turning class designed to convey concepts, functionality, and application of the turning module. Turning Manufacturing Process is taught from the perspective of an NC/CNC programming session and emphasizes programming concepts and techniques which take advantage of the latest developments in turning equipment and technology.

WHO SHOULD ATTEND

• Manufacturing engineers
• NC/CNC programmers

PREREQUISITES

Required courses:
• CAM Manufacturing Fundamentals (TRCT2500)

Or

• Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

• Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4- and 5-axis NC/CNC programming methods and procedures

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written and released against NX 12.0.1

COURSE TOPICS

Day 1

• Defining part and blank geometry
• Creating and retrieving tools
• Facing operations
• Tool path verification
• Common options

Day 2

• Centerline operations
• Roughing operations – OD
• Roughing operations – ID
• Finish operations OD and ID
• Grooving
• Teach mode operations

Day 3

• Thread operations
• Using multiple spindles
• Mill-turn
• Vertical turret lathe
• Merging lathes

Course Description

For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

NX 12

CAM Turning Manufacturing Process

Course Code	TRCT2510
User Level	Beginner to Intermediate
Language	Spanish
Price	$900.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

Proceso de fabricación de torneado es la clase principal de torneado diseñada para transmitir los conceptos, la funcionalidad y la aplicación del módulo de torneado. Turning Manufacturing Process se enseña desde la perspectiva de una sesión de programación NC / CNC y hace hincapié en los conceptos y técnicas de programación que aprovechan los últimos desarrollos en equipos y tecnología de torneado.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Manufacturing engineers
• NC/CNC programmers

PREREQUISITES

Required courses:
 • CAM Manufacturing Fundamentals (TRCT2500)

Or

 • Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

 • Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4- and 5-axis NC/CNC programming methods and procedures

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Defining part and blank geometry
• Creating and retrieving tools
• Facing operations
• Tool path verification
• Common options

Day 2

• Centerline operations
• Roughing operations – OD
• Roughing operations – ID
• Finish operations OD and ID
• Grooving
• Teach mode operations

Day 3

• Thread operations
• Using multiple spindles
• Mill-turn
• Vertical turret lathe
• Merging lathes

Course Description

This course was written and released against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

NX 1847

CAM Turning Manufacturing Process

Course Code	TRCT2510
User Level	Beginner to Intermediate
Language	English
Price	$1,650.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

Turning Manufacturing Process   is the core turning class designed to convey concepts, functionality, and application of the turning module. Turning Manufacturing Process is taught from the perspective of an NC/CNC programming session and emphasizes programming concepts and techniques which take advantage of the latest developments in turning equipment and technology.

WHO SHOULD ATTEND

• Manufacturing engineers
• NC/CNC programmers

PREREQUISITES

Required courses:
 • CAM Manufacturing Fundamentals (TRCT2500)

Or
 • Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used

COURSE TOPICS

Day 1

• Defining part and blank geometry
• Creating and retrieving tools
• Facing operations
• Tool path verification
• Common options

Day 2

• Centerline operations
• Roughing operations – OD
• Roughing operations – ID

Course Description

- Finish operations OD and ID
- Grooving
- Teach mode operations

Day 3

- Thread operations
- Using multiple spindles
- Mill-turn
- Vertical turret lathe
- Merging lathes

• Should have a thorough understanding of NC/CNC milling and turning programming principles.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

NX 12.0

CAM Fixed-axis and Multi-axis Milling

Course Code	TRCT2515
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Fixed-axis and Multi-axis Milling** course is designed for NC/CNC programmers who machine simple or complex parts with fixed and variable tool capabilities. Students will learn how to create fixed and variable axis tool paths. You will also be introduced to NX workflows for machining contoured parts, high-speed machining methods, milling holes and threads, milling turbine blade type parts, and on machine probing.

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• Multi-axis NC/CNC programmers
• Users of 3, 4 and 5-axis machines for milling complex prismatic and contour type parts are encouraged to attend

PREREQUISITES

Required courses:
 • CAM Manufacturing Fundamentals (TRCT2500)

Or
 • Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:
 • Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4-, and 5-axis NC/CNC programming methods and procedures.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Introduction and overview
• Plunge Milling
• Z-Level Milling
• High-speed Machining
• Fixed-axis Contour Milling
• Fixed-axis Projects

Day 2

• Introduction to Four and Five-axis Machining
• Five-axis Z-Level
• Variable axis Contour Milling
• Profiling walls with a variable tool axis
• Multi-axis Projects

Day 3

• Avoid collisions by titling the tool axis
• Turbomachinery Milling
• Sequential Mill basics
• Sequential Mill advanced
• Non Cutting Moves

Day 4

• Wave Geometry Linker in Manufacturing

Course Description

- Hole Milling and Thread Milling
- Refixturing and the In Process Workpiece
- Generic Motion and Probing operations

This course was written and released against NX 12.0.1
For **LIVE!** classes, customers are required to have NX
12.0.1 installed.

NX 12

CAM Fixed-axis and Multi-axis Milling

Course Code	TRCT2515
User Level	Intermediate to Advanced
Language	Spanish
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, Mexico (training.mx.plm@siemens.com)

El curso **Fresado de eje fijo y multieje** está diseñado para programadores NC / CNC que mecanizan piezas simples o complejas con capacidades de herramienta fija y variable. Los estudiantes aprenderán cómo crear trayectorias de herramientas de eje fijo y variable. También se le presentarán los flujos de trabajo NX para el mecanizado de piezas contorneadas, los métodos de mecanizado de alta velocidad, los orificios y roscas de fresado, las piezas del tipo de pala de turbina de fresado y el sondeo de máquinas.

WHO SHOULD ATTEND

- Manufacturing engineers
- CAD/CAM managers
- Multi-axis NC/CNC programmers
- Users of 3, 4 and 5-axis machines for milling complex prismatic and contour type parts are encouraged to attend

PREREQUISITES

Required courses:
- CAM Manufacturing Fundamentals (TRCT2500)

COURSE TOPICS

Day 1

- Introduction and overview
- Plunge Milling
- Z-Level Milling
- High-speed Machining
- Fixed-axis Contour Milling
- Fixed-axis Projects

Day 2

Course Description

- Introduction to Four and Five-axis Machining
- Five-axis Z-Level
- Variable axis Contour Milling
- Profiling walls with a variable tool axis
- Multi-axis Projects

Day 3

- Avoid collisions by titling the tool axis
- Turbomachinery Milling
- Sequential Mill basics
- Sequential Mill advanced
- Non Cutting Moves

Day 4

- Wave Geometry Linker in Manufacturing
- Hole Milling and Thread Milling
- Refixturing and the In Process Workpiece
- Generic Motion and Probing operations

Or
 • Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:
 • Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4-, and 5-axis NC/CNC programming methods and procedures.

PROVIDED COURSE MATERIAL

- Student Guide
- Activity Material

ATTENDANCE REQUIREMENTS

This course was written and released against NX 12.0.1
For **LIVE!** classes, customers are required to have NX 12.0.1 installed.

Course Description

NX 1847

CAM Fixed-axis and Multi-axis Milling

Course Code	TRCT2515
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	4 Days
LIVE! Online Duration	4 hours each day for 8 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **Fixed-axis and Multi-axis Milling** course is designed for NC/CNC programmers who machine simple or complex parts with fixed and variable tool capabilities. Students will learn how to create fixed and variable axis tool paths. You will also be introduced to NX workflows for machining contoured parts, high-speed machining methods, milling holes and threads, milling turbine blade type parts, and on machine probing.

WHO SHOULD ATTEND

• Manufacturing engineers
• CAD/CAM managers
• Multi-axis NC/CNC programmers
• Users of 3, 4 and 5-axis machines for milling complex prismatic and contour type parts are encouraged to attend

PREREQUISITES

Required courses:
• CAM Manufacturing Fundamentals (TRCT2500)

Or

• Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:
• Should have a thorough understanding of NC/CNC programming principles and of manual 3-, 4-, and 5-axis NC/CNC programming methods and procedures.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Introduction and overview
• Plunge Milling
• Z-Level Milling
• High-speed Machining
• Fixed-axis Contour Milling
• Fixed-axis Projects

Day 2

• Introduction to Four and Five-axis Machining
• Five-axis Z-Level
• Variable axis Contour Milling
• Profiling walls with a variable tool axis
• Multi-axis Projects

Day 3

• Avoid collisions by titling the tool axis
• Turbomachinery Milling
• Sequential Mill basics
• Sequential Mill advanced
• Non Cutting Moves

Day 4

• Wave Geometry Linker in Manufacturing

- Hole Milling and Thread Milling
- Refixturing and the In Process Workpiece
- Generic Motion and Probing operations

NX 10.0

CAM Customization and Configuration (G2H)

Course Code	TRCT2520-GH
User Level	Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **CAM Customization and Configuration** course, an exclusive offering by the Siemens US Training team, is directed at the more experienced and advanced NC/CNC user that is interested in becoming more productive through the use of advanced customization techniques. Upon completion of this course, you will be able to add new cutting tools, cutting tool materials, part materials, and new machining methods along with associated feeds and speeds to the manufacturing libraries. You will learn how to create template files and to configure NX to output shop documentation for your lists of operations or cutting tools. You will be introduced to using Wizards and templates,   and to the automated Feature Based Machining module, which will significantly decrease the time that you spend creating tool paths for features like holes, planar milling, lathe grooving and WEDM tool paths. Finally, you will use the Machine tool builder to construct a kinematic model of a machine tool and use it to verify operations and setups.

WHO SHOULD ATTEND	COURSE TOPICS

- Manufacturing engineers
- System managers
- Senior NC/CNC programmer

Day 1

- Tool and machining data libraries
- Shop documentation
- Using Manufacturing wizards

PREREQUISITES

Course Description

• Customizing NX CAM setup templates

Day 2

• Feature-based machining
• Integrated simulation and verification (IS & V)
• Project examples

Required courses:
 • NX Manufacturing Fundamentals (TR11021)

Or
 • Successful completion of the Manufacturing Fundamentals Advisor assessment on the Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.
 • A thorough understanding of NC/CNC programming principles and a thorough understanding of NC/CNC machine/controller functionality

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This course was written and released against NX 10.0.2

Course Description

NX 1847

CAM Post Building Techniques (G2H)

Course Code	TRCT2525-GH
User Level	Beginner to Intermediate
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Post Building Techniques** acquaints you with tools and techniques that are used for building custom, machine tool specific post processors using the Post Builder tool. Methods are shown for customization and modification of the definition and event handler files that are used by NX Post.

WHO SHOULD ATTEND

 Anyone that is required to build post processors that are used in the NX manufacturing process. Typical users are NC/CNC programmers, system managers and manufacturing engineers

PREREQUISITES

Required courses:
 • CAM Manufacturing Fundamentals (TRCT2500)

Or
 • Successful completion of the **Manufacturing Fundamentals Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

Other recommendations:
 • Should have a thorough understanding of NC/CNC programming principles and a thorough understanding of NC/CNC machine/controller functionality

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

• Building a postprocessor with the post builder
• Units-only subposts

Day 2

• Post Builder for wire EDM applications
• Post Builder for 4-axis and 5-axis mills
• Post Builder for lathe applications
• Create mill-turn postprocessors

Day 3

• Tcl Basics for Post Builder
• Custom commands
• User-defined events and user-defined cycles
• Postprocessing with a Siemens controller
• Create a macro with Post Builder

Course Description

NX 1847

CAD Routing Electrical (G2H)

Course Code	TRCT2530-GH
User Level	Intermediate to Advanced
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Routing Electrical** course illustrates how to create connection and component lists, how to qualify parts for use in routing assemblies, how to place parts in a wiring assembly, or to create and edit wiring paths, how to assign components and connectors (manually and automatically), and how to create formboards.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

• Designers
• Engineers
• CAD/CAM Managers

PREREQUISITES

Required courses:
 • CAD Fundamental Processes (TRCT2205-TC)

Or
 • Successful completion of **Designing parts in NX Advisor** on Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Creating and using connection lists and component lists
• Qualifying parts
• Placing parts
• Routing wiring segments
• Assigning components, connectors and wire routing
• Adding overstock
• Creating formboards
• Synchronizing formboards

NX 11.0

Introduction to Line Designer (G2H)

Course Code	TRCT2540-GH
User Level	Beginner
Language	English
Price	$5,500.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.</p>

<p>The Introduction to Line Designer course is intended to introduce participants to both the fundamentals of NX modeling and the NX Line Designer functionality. This course is targeted at users of Line Designer who will be working with

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

This course is targeted specifically at manufacturing line designers and anybody doing Plant Layout in 3D

PREREQUISITES

• Knowledge and abilities using a Windows based PC
• Basic Teamcenter
• Plant layout experience
• **Prior NX experience is not required**

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

This NX course will be taught within the context of a Siemens PLM Teamcenter environment. Teamcenter 10.1.6 and NX11.0.2.

COURSE TOPICS

<p>Day 1</p>

Start NX within the Teamcenter environment
Create and modify NX part files
Navigate the NX interface
Create simple sketches

<p>Day 2</p>

Modify simple sketches
Produce simple solids
Create and modify simple edge blends and chamfers
Establish Assembly Load Options
Open existing NX assemblies

<p>Day 3</p>

Create simple NX assemblies
Move components within an assembly
Define assembly constraints
Replace components
Working with Reference sets
Initiate the development of a plant layout assembly structure
Add and move existing machinery designs

<p>Day 4</p>

Add and modify equipment from an NX Part Family

Course Description

Add and modify equipment from a Product Template (PTS) model
Add existing production line designs (.dwg file format)
Add data from a point cloud file (.pod file format)
Hide specific sections of the point cloud data
Move the point cloud data

<p>Day 5</p>

Create connectors
Add components using connectors and automatic constraining of connector based parts
Working with NX Line Designer Smart components

Course Description

Simatic IT UA Process Industries 2.3

Process Industries - Basic Features (G2H)

Course Code	TRCT3010-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

SIMATIC® IT Unified Architecture for Process Industries is SIEMENS product for the implementation of Manufacturing Operations Management (MOM) solutions in Process industry sector.

This course provides awareness about the out of the box features of the product. The configuration, GUI and Business logic are taught.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Production Manager

PREREQUISITES

<P>
General knowledge of Process industry workflow and terminology (not mandatory)
</P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Introduction

• Business proposition
• Runtime architecture
• Functional overview of UAPI

UAPI engineering and runtime functions

• UAPI standard UIs
  • Material Management
  • Equipment Management
  • Work Masters Definition
  • Work Orders Execution
  • Material Tracking Units
  • Workflow Management
• UAPI data model (including UDM)

UAPI configuration and deployment

• Introduction to Solution Studio
• What's an App? Solution Studio perspective
• Workers

• Event subscriptions
• UI Applications
• Mashup editor
  • UAPI Mashup components
  • New Mashup module creation
• Deployment

Simatic IT UA Process Industries 2.3

Process Industries - Extensions (G2H)

Course Code	TRCT3015-GH
User Level	Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

This Training Course focuses on how to extend the features of SIMATIC® IT Unified Architecture for Process Industries.

SIMATIC® IT Unified Architecture for Process Industries is the SIEMENS product for the implementation of Manufacturing Operations Management solutions in Process industry sector.

WHO SHOULD ATTEND

MOM/MES application developer

PREREQUISITES

Required courses:
 • Process Industries - Basic Features (G2H) (TRCT3010-GH)

COURSE TOPICS

UAPI Business Logic and Data Model Extensions

 • Introduction to Project Studio
 • What are Apps and Functional Blocks? Project Studio perspective
 • Referencing UAPI (and UDM) FBs and extending the Data Model

Course Description

• New commands and Events

UAPI Custom User Interfaces

• Introduction to UAF UIs
  • UI Modules
  • UI Components
• Creating a custom UI Component
  • Auto generated HTML and JS code overview
  • UI component layout development
  • How to call commands in UI
  • How to call reading functions in UI

Tasks

• Attaching Business Logic to tasks
  • 'Status Change' event handler
  • Event subscription configuration and filtering
• Attaching User Interface to tasks
  • Overview and configuration of Task Type fields for custom UI components
  • Overview and configuration of Task Definition fields for custom UI components

Automation Gateway

• OPC Channel configuration
• Node types and parameter definition
• Node instances creation from node types
• Link node instance parameters to OPC node Ids

Signal Rules

• Signal Rules overview
• Signal Rule sources, filtering options and actions

• Knowledge of MES Process industry workflow
• Knowledge of Microsoft Operating Systems
• General knowledge of MOM/MES purposes
• Familiarity with MS Visual Studio environment
• Good knowledge of MS .NET technology and solid C# programming skills
• Basic knowledge of MS Entity Framework
• Familiarity with OData (REST API)
• Knowledge of HTML5, CSS3
• JavaScript and JQuery programming skills
• Knowledge of Angular JS

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

QMS CompliantPro 8.8

CompliantPro Super Administration

Course Code	TRCT3100
User Level	Beginner to Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **CompliantPro Super Administrator** course is designed to train students on how to configure and manage the application parameters in CompliantPro.

At the completion of the **CPro Super Administration** class, the student will be able to understand the application parameters required to configure Quality Management System workflows in CPro. This interactive course focuses the student on the QMS use cases, and how the system application parameters contribute to the structure of the use cases which may be employed by their enterprise. These concepts can be applied in the real world of Quality Management processes. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the underlying principles incorporated within the CPro modules and components. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

 • Understand the basic QMS use cases, module and component structure of the application
 • Learn how to change system labels, messages and navigation to align with the enterprise and industry nomenclature
 • Learn to set up and manage Dashboards and Search Builder Views
 • Learn to set up and manage User Profiles in the system, and manage standard permissions and security models
 • Learn how to clone, configure and manage Application Parameters, and how they contribute to the workflow functionality.

WHO SHOULD ATTEND

This course is for students who are new to CompliantPro administration, as well as those who need a refresher course on CPro system administration.

PREREQUISITES

Required courses:
 • CompliantPro End User Navigation (TRCT3115)

The CompliantPro application allows for system administration and management without the need for IT-level skill sets. It is helpful to have a basic understanding of Quality Management and the trainees should have strong computer skills at the user level.

COURSE TOPICS

Day 1
 • Administrative Components and Parameters
 • Workflow Types – Profiles and Actions
 • Advanced Administration - Cloning, Utilities, Worksheets

Day 2

 • Managing the User Experience, Dashboards, Searches and Reporting, Security and Language Translation
 • Template Layouts - Setting up and Managing Content
 • Rich Text Editor and User Defined Content
 • Advanced Content Validation
 • Checklists and Tests

not necessary. Database administration skills are very
helpful, but not required.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Students can bring their own laptops and work in their
organizations Training instance, or, access the Siemens
Training instance from a Siemens machine.

QMS CompliantPro 8.8

CompliantPro Document Control Administration

Course Code	TRCT3110
User Level	Intermediate
Language	English
Price	$1,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **CompliantPro Document Control Administrator** course is designed to train students on how to use, configure and manage
the application parameters specific to the Document Control Module and Components in CompliantPro.

At the completion of the **CPro Document Control Administration** class, the student will be able to understand the application
parameters required to configure Quality Management System Document Control workflows in CPro, and learn to use the
configured Document Types, as well as manage and maintain the Document Control module and it's peripheral document
classes. This interactive course focuses the student on the QMS use cases, and how the system application parameters
contribute to the structure of the Document Control use case. These concepts can be applied in the real world of Quality
Management Document Control processes. As with each course developed and taught by Siemens PLM Software
professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the
underlying principles incorporated within the CPro modules and components. This class was designed to increase the
productivity of the student, teaching the necessary skills to accomplish the following:

• Understand the standard QMS Document Control module and component structure of the application
• Learn how to configure and manage Document Control Document Types and Template Layouts
• Learn to set up User Profiles and Document Control Permissions

Course Description

• Understand Document Change Management and the Change Management workflows
• Learn some strategies for Document Control implementation

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

This course is for students who are new to CompliantPro administration, as well as those who need a refresher course on CPro system administration.

PREREQUISITES

Required courses:
 • CompliantPro End User Navigation (TRCT3115)
 • CompliantPro Super Administration (TRCT3100)

The CompliantPro application allows for system administration and management without the need for IT-level skill sets. It is helpful to have a basic understanding of Quality Management and the trainees should have strong computer skills at the user level. Software or HTML development and coding skills are not necessary. Database administration skills are very helpful, but not required.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

Day 1

 • Document Control Use Cases and User Navigation
 • Document Control Admin Roles Defined
 • Understanding and Using Permissions for Document Control - Organizations, Functional Roles and Allowances

Day 2

 • Configuring Document Control Document Types and Template Layouts
 • Searches and Cross References
 • Administrative Utilities
 • Managing the User Experience - Document Control Document Class, System Navigation, Labels and Messages

Course Description

CompliantPro End User Navigation

Course Code	TRCT3115
User Level	Beginner
Language	English
Price	$600.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	1 Day
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

The **CompliantPro End User Navigation** course is designed to train students on what the CompliantPro Application is used for, how it is applied, and what are the typical Quality Management System use cases and user experience. This course is the entry-level for all CPro users and also required entry level for CPro administration. This course can also be used to introduce Quality Management System Process Owners to the potential functionality of the system in order to assist with designing the workflows to meet their own QMS business needs.

At the completion of the **CompliantPro End User Navigation** class, the student will be able to understand the CPro QMS business Use Cases available out of the box. The students will actively explore a configured CPro system, and learn to navigate and set up their own Dashboards and manage their User Settings. They will learn to navigate the CPro Modules and Components and to create and manage Searchs and Views. They will also learn to create Documents and Action Requests with standard use cases. This interactive course focuses the student on the QMS use cases, and how to navigate and use CompliantPro. These concepts can be applied in the real world of Quality Management processes. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces our in-depth knowledge of the software's capabilities and instructs the students based on the QMS principles incorporated within the CPro modules and components. This class was designed to increase the productivity of the student, teaching the necessary skills to accomplish the following:

• Authenticate into the application and set up their default User Settings and Custom Dashboard
• Understand and navigate the user Portal components
• Navigate to, and understand the basic QMS use cases, module and component structure of the application
• Create and manage custom searches and views
• Create, save, submit, review and approve Documents and Action Requests
• Set up and Manage Content using the Rich Text Editor and Advanced Features samples

WHO SHOULD ATTEND	COURSE TOPICS
This course is the entry-level for all CPro users and also required entry level for CPro administration. This course can also be used to introduce Quality Management System Process Owners to the potential functionality of the system in order to assist with designing the workflows to meet their own QMS business needs. This course would be useful for anyone interested in learning more about what CPro is and how it is used, as well as users who already have	**Day 1** • CompliantPro - What is it and how is it applied? • Introduction to the CPro User Interface • Logging in to CPro for the first time • Defining and Navigating the User Portal • Setting up and Managing your Custom Dashboard • Basic Document Navigation and Content Management • Using Search Functionality and Saved Searches

the application installed.

PREREQUISITES

Required courses:
• (none)

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Students will be working in a Siemens pre-configured instance of CPro for a common user experience and to demonstrate viable pre-configured use cases. This may not align with some of the settings they have in their home installations, but most of the functionality will be standard across different configurations.

Course Description

Fibersim 14.0

Fibersim Pro on NX (G2H)

Course Code	TRFS503-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Pro** course is structured to introduce the fundamentals of Fibersim Pro. A practical exercise demonstrated on a CAD model will familiarize students with navigating the design environment and creating composite objects.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Composite designers and manufacturing engineers

COURSE TOPICS

• Introduction to Fibersim
• Model Setup
• Ply-Based Design Basics
• Producibility
• Rosettes
• Utilities
• Core
• Documentation
• Multi-Ply Design Basics
• Layer Definition
• Surface Offset
• Manufacturing Features
• Interfaces

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

 • NX CAD Basic Processes (TRCT2215)

Learning Advantage courses can also be used to prepare for this course (NX Essentials, Feature Modeling Fundamentals).

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Fibersim 15.0

Fibersim Pro on NX (G2H)

Course Code	TRFS503-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Pro** course is structured to introduce the fundamentals of Fibersim Pro. A practical exercise demonstrated on a CAD model will familiarize students with navigating the design environment and creating composite objects.

WHO SHOULD ATTEND	COURSE TOPICS

Composite designers and manufacturing engineers

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

 • NX CAD Basic Processes (TRCT2215)

Learning Advantage courses can also be used to prepare for this course (NX Essentials, Feature Modeling Fundamentals).

COURSE TOPICS:
• Introduction to Fibersim
• Model Setup
• Ply-Based Design Basics
• Producibility
• Rosettes
• Utilities
• Core
• Documentation
• Multi-Ply Design Basics
• Layer Definition
• Surface Offset
• Manufacturing Features
• Interfaces

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Fibersim 16.0

Fibersim Pro on NX (G2H)

Course Code	TRFS503-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Pro** course is structured to introduce the fundamentals of Fibersim Pro. A practical exercise demonstrated on a CAD model will familiarize students with navigating the design environment and creating composite objects.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Composite designers and manufacturing engineers

PREREQUISITES

<P>Required courses:</P>
CAD Basic
Processes (TRCT2215)
<P><ull>
Or

<p>Learning Advantage courses can also be used to
prepare for this course (NX Essentials, Feature
Modeling Fundamentals).</p></P>

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Fibersim
• Model Setup
• Ply-Based Design Basics
• Producibility
• Rosettes
• Utilities
• Core
• Documentation
• Multi-Ply Design Basics
• Layer Definition
• Surface Offset
• Manufacturing Features
• Interfaces

Course Description

Fibersim 15.0

Fibersim Pro on CATIA (G2H)

Course Code	TRFS504-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href=""http://training.plm.automation.siemens.com/courses/guarantee.cfm"">Here for more information about G2H
courses.</p>

<p>The Pro course is structured to introduce the fundamentals of Fibersim Pro. A practical exercise demonstrated on a

WHO SHOULD ATTEND

Composite designers and manufacturing engineers

PREREQUISITES

Working knowledge of CATIA.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Only available via LIVE! Distance Learning.

NOTE:CATIA licenses cannot be provided, customers
must use their own license.

COURSE TOPICS

• Introduction to Fibersim
• Model Setup
• Ply-Based Design Basics
• Producibility
• Rosettes
• Utilities
• Core
• Documentation
• Multi-Ply Design Basics
• Layer Definition
• Surface Offset
• Manufacturing Features
• Interfaces

Course Description

Fibersim 16.0

Fibersim Pro on CATIA (G2H)

Course Code	TRFS504-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href=""http://training.plm.automation.siemens.com/courses/guarantee.cfm"">Here for more information about G2H
courses.</p>

<p>The Pro course is structured to introduce the fundamentals of Fibersim Pro. A practical exercise demonstrated on a

WHO SHOULD ATTEND	COURSE TOPICS

Composite designers and manufacturing engineers

PREREQUISITES

Working knowledge of CATIA.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Only available via LIVE! Distance Learning.

NOTE:CATIA licenses cannot be provided, customers
must use their own license.

COURSE TOPICS

• Introduction to Fibersim
• Model Setup
• Ply-Based Design Basics
• Producibility
• Rosettes
• Utilities
• Core
• Documentation
• Multi-Ply Design Basics
• Layer Definition
• Surface Offset
• Manufacturing Features
• Interfaces

Course Description

Fibersim 15.0

Fibersim Pro on Creo (G2H)

Course Code	TRFS505-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href=""http://training.plm.automation.siemens.com/courses/guarantee.cfm"">Here for more information about G2H
courses.</p>

<p>The Pro course is structured to introduce the fundamentals of Fibersim Pro. A practical exercise demonstrated on a

WHO SHOULD ATTEND	COURSE TOPICS

Composite designers and manufacturing engineers

• Introduction to Fibersim
• Model Setup
• Ply-Based Design Basics

PREREQUISITES

• Producibility
• Rosettes
• Utilities

Working knowledge of Creo.

• Core
• Documentation
• Multi-Ply Design Basics
• Layer Definition

PROVIDED COURSE MATERIAL

• Surface Offset
• Manufacturing Features
• Interfaces

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Only available via LIVE! Distance Learning.

NOTE: Creo licenses cannot be provided, customers
must use their own license.

Course Description

Fibersim 14.0

Fibersim Elite on NX (G2H)

Course Code	TRFS703-GH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Elite** course is structured to introduce the fundamentals of Fibersim Elite. A practical exercise demonstrated on a CAD model will familiarize students with designing using the Zone-Based Design method.

WHO SHOULD ATTEND	COURSE TOPICS

Composite designers and manufacturing engineers

COURSE TOPICS
- Zone-Based Design Basics
- Transition Manipulation
- Layer Definition
- Surface Offset
- Zone-Based Cores
- Advanced Techniques
- Merge Model
- Automated Deposition Design
- Manufacturing Features

PREREQUISITES

Required courses:
 • Fibersim Pro on NX (G2H) (TRFS503)

Working knowledge of Ply-Based Design and Multi-Ply Design methods in Fibersim 14.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Fibersim 15.0

Fibersim Elite on NX (G2H)

Course Code	TRFS703-GH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Elite** course is structured to introduce the fundamentals of Fibersim Elite. A practical exercise demonstrated on a CAD model will familiarize students with designing using the Zone-Based Design method.

WHO SHOULD ATTEND	COURSE TOPICS

Composite designers and manufacturing engineers

• Zone-Based Design Basics
• Transition Manipulation
• Layer Definition
• Surface Offset
• Zone-Based Cores
• Advanced Techniques
• Merge Model
• Automated Deposition Design
• Manufacturing Features

PREREQUISITES

Required courses:
 • Fibersim Pro on NX (G2H) (TRFS503)

Working knowledge of Ply-Based Design and Multi-Ply Design methods in Fibersim 14.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Fibersim 16.0

Fibersim Elite on NX (G2H)

Course Code	TRFS703-GH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Elite** course is structured to introduce the fundamentals of Fibersim Elite. A practical exercise demonstrated on a CAD model will familiarize students with designing using the Zone-Based Design method.

WHO SHOULD ATTEND	COURSE TOPICS

Composite designers and manufacturing engineers

• Zone-Based Design Basics
• Transition Manipulation
• Layer Definition
• Surface Offset
• Zone-Based Cores
• Advanced Techniques
• Merge Model
• Automated Deposition Design
• Manufacturing Features

PREREQUISITES

Required courses:
 • Fibersim Pro on NX (G2H) (TRFS503)

Working knowledge of Ply-Based Design and Multi-Ply Design methods in Fibersim 16.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

Course Description

Fibersim 15.0

Fibersim Elite on CATIA (G2H)

Course Code	TRFS704-GH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href=""http://training.plm.automation.siemens.com/courses/guarantee.cfm"">Here for more information about G2H
courses.</p>

<p>The Elite course is structured to introduce the fundamentals of Fibersim Elite. A practical exercise demonstrated on

WHO SHOULD ATTEND

Composite designers and manufacturing engineers

PREREQUISITES

Required courses:
 • Fibersim Pro on CATIA (G2H) (TRFS504-GH)

Working knowledge of Ply-Based Design and Multi-Ply
Design methods in Fibersim 15.

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

ATTENDANCE REQUIREMENTS

Only available via LIVE! Distance Learning.

NOTE:CATIA licenses cannot be provided, customers
must use their own license.

COURSE TOPICS

Zone-Based Design Basics
Transition Manipulation
Layer Definition
Surface Offset
Zone-Based Cores
Advanced Techniques
Merge Model
Automated Deposition Design
Manufacturing Features

Course Description

Fibersim 16.0

Fibersim Elite on CATIA (G2H)

Course Code	TRFS704-GH
User Level	Intermediate to Advanced
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
LIVE! Online Duration	5 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

<p>(G2H) Guaranteed to Hold. Select <a
href=""http://training.plm.automation.siemens.com/courses/guarantee.cfm"">Here for more information about G2H
courses.</p>

<p>The Elite course is structured to introduce the fundamentals of Fibersim Elite. A practical exercise demonstrated on

WHO SHOULD ATTEND	COURSE TOPICS

Composite designers and manufacturing engineers

Zone-Based Design Basics
Transition Manipulation
Layer Definition
Surface Offset
Zone-Based Cores
Advanced Techniques
Merge Model
Automated Deposition Design
Manufacturing Features

PREREQUISITES

Required courses:
• Fibersim Pro on CATIA (G2H) (TRFS504-GH)

Working knowledge of Ply-Based Design and Multi-Ply
Design methods in Fibersim 16.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

ATTENDANCE REQUIREMENTS

Only available via LIVE! Distance Learning.

NOTE:CATIA licenses cannot be provided, customers
must use their own license.

Course Description

Mastertrim 14.0

Mastertrim Pro on NX (G2H)

Course Code	TRMT003-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Mastertrim Pro** course exposes the learners to the fundamentals of Mastertrim. A practical exercise demonstrated on a CAD model will familiarize students with navigating Mastertrim and creating Mastertrim objects.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Seat Trim Engineers

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Or

 • Successful completion of the Basic Design Advisor in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Mastertrim
• Model Setup
• Sew Lines
• Cover Pieces
• Producibility
• Flat patterns
• Attachments and Manufacturing Sew Lines
• Backing Pads and Closeouts
• Flat Pattern Import Utility
• Bill of Materials and Cost Export
• Sewing Report and Engineering Drawing

Course Description

Mastertrim 14.2

Mastertrim Pro on NX (G2H)

Course Code	TRMT003-GH
User Level	Beginner
Language	English
Price	$3,300.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	3 Days
LIVE! Online Duration	4 hours each day for 5 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Mastertrim Pro** course exposes the learners to the fundamentals of Mastertrim. A practical exercise demonstrated on a CAD model will familiarize students with navigating Mastertrim and creating Mastertrim objects.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Seat Trim Engineers

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or

 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Mastertrim Pro
• Model Setup
• Sew Lines
• Cover Pieces
• Producibility
• Flat patterns and Notch Utility
• Attachments
• Manufacturing Sew Lines
• Backing Pads and Closeouts
• Flat Pattern Import
• Bill of Materials and Cost Export
• Manufacturing Operations
• Sewing Report
• Engineering Drawing
• Cross Section

Course Description

Mastertrim 14.2

Mastertrim Base on NX (G2H)

Course Code	TRMT005-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Mastertrim Base** exposes the learners to the fundamentals of Mastertrim Base. A practical exercise demonstrated on a CAD model will familiarize students with navigating Mastertrim Base and creating Mastertrim objects.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Seat Trim Engineers

Designers

Manufacturers

PREREQUISITES

Required courses:
 • CAD Basic Processes (TRCT2215)

Or

 • Successful completion of the **NX Basics Advisor** in Learning Advantage (score >70%). Learning Advantage courses can also be used to prepare for the prerequisite assessment.

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material

COURSE TOPICS

• Introduction to Mastertrim Base
• Model Setup
• Sew Lines
• Cover Pieces
• Producibility
• Flat patterns and Manual Creation of Notches
• Attachments
• Backing Pads and Closeouts
• Flat Pattern Import
• Bill of Materials and Cost Export
• Engineering Drawing

Course Description

Syncrofit 13.2

Assembly Design Environment (ADE) on NX (G2H)

Course Code	TRSF602-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Assembly Design Environment** course exposes the learners to the fundamentals of Syncrofit Assembly Design Environment (ADE). A practical exercise demonstrated on a CAD model will familiarize students with navigating the ADE and setting up a simple assembly with Syncrofit objects.

WHO SHOULD ATTEND	COURSE TOPICS

WHO SHOULD ATTEND

Design engineers

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Learning Advantage courses can also be used to prepare for this course (NX Essentials, Feature Modeling Fundamentals).

PROVIDED COURSE MATERIAL

 • Student Guide
 • Activity Material

COURSE TOPICS

 • Introduction to Syncrofit
 • Fastener Locations
 • Assembly Structure
 • Fastener pattern Utility
 • Stackup
 • Nutplates
 • Standard Parts
 • Change Management
 • Symmetric Assembly
 • Data Publish

Course Description

Syncrofit 14.1

Assembly Design Environment (ADE) on NX (G2H)

Course Code	TRSF602-GH
User Level	Beginner
Language	English
Price	$2,200.00 (USD) (Price may not include taxes applicable to your billing region)
Training Center Duration	2 Days
LIVE! Online Duration	4 hours each day for 4 Days
For More Information	Learning Services, USA (training.usa.plm@siemens.com)

(G2H) Guaranteed to Hold. Select Here for more information about G2H courses.

The **Assembly Design Environment** course exposes the learners to the fundamentals of Syncrofit Assembly Design Environment (ADE). A practical exercise demonstrated on a CAD model will familiarize students with navigating the ADE and setting up a simple assembly with Syncrofit objects.

WHO SHOULD ATTEND	COURSE TOPICS

Design engineers

COURSE TOPICS
- Introduction to Syncrofit
- Fastener Locations
- Assembly Structure
- Fastener pattern Utility
- Stackup
- Nutplates
- Standard Parts
- Change Management
- Symmetric Assembly
- Data Publish

PREREQUISITES

Required courses:
 • Basic Design (TR10053)

Learning Advantage courses can also be used to prepare for this course (NX Essentials, Feature Modeling Fundamentals).

PROVIDED COURSE MATERIAL

• Student Guide
• Activity Material