

PLM RESOURCES
GMBH

TRAINING CATALOG



Teamcenter
Tecnomatix plant simulation
Simcenter Star CCM+
NX
Solid edge

2023/2024

SUMMARY

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INTRODUCTION



PLM RESSOURCES GMBH IS A COMPANY THAT BASES ITS FOUNDATIONS ON THE CONTRIBUTION OF ADDED VALUES TO ITS CUSTOMERS, HELPING THEM FOCUS ON ALL OF THEIR INTERNAL PROCESSES IN ORDER TO CONCENTRATE ON THE CONTINUOUS IMPROVEMENT OF THEIR PRODUCTS.

PLM RESOURCES, OFFICIAL PARTNER OF SIEMENS DIGITAL INDUSTRIES SOFTWARE IN NORTH AFRICA, AIMS TO OFFER A VARIETY OF SOFTWARES IN DIFFERENT AREAS SUCH AS TECNOMATIX, TEAMCENTER, SIMCENTER, NX AND SOLID EDGE.

TEAMCENTER

**SIMCENTER STAR
CCM +**

**TECNOMATIX
PLANT
SIMULATION**

SOLID EGDE

NX

TEAMCENTER

Teamcenter software is a modern, adaptable product lifecycle management (PLM) system that connects people and processes, across functional silos, with a digital thread for innovation.

Teamcenter Foundation

ID : PLM-2023-TF

Duration: 4 days

Prerequisites: No prerequisites required

Overview:The Teamcenter Foundation course introduces the concept of product lifecycle management. It provides instruction on working in the rich client interface and the basics of using Teamcenter, including applying basic use cases, managing product supporting documents, managing your product structure, visualizing your product model, managing your release processes, and managing changes.

Who should attend:The primary audience for this course are users who design, configure and release data using Teamcenter.

Primary course topics

Day 1

- An Introduction to Teamcenter.
- Working with items.
- Importing your data files.
- Applying data security practices.
- Finding content using Search.
- Working with projects.
- Configuring behavior using options and preferences.

Day 2

- Managing Teamcenter data in real time with Microsoft Office.
- Update BOM properties in real time with live Excel.
- Opening and viewing product structures.
- Controlling assembly configuration views.
- Creating, editing, and analyzing product structures.

Day 3

- Navigating the structure relation hierarchy.
- Classifying and using standard product data.
- Searching for Classified data.
- Viewing visualization data.
- Initiate a workflow.
- Managing workflow task assignments.
- Managing workflow processes.
- Managing workflow with Microsoft Office.

Day 4

- Introduction to managing changes.
- Creating problem reports.
- Creating change requests.
- Elaborating and executing the change.

Teamcenter Integration for NX users

ID : PLM-2023-TINXU

Duration: 1 day

Prerequisites: No prerequisites required

Overview: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.

Who should attend: Workflow contributors and Authors

Primary course topics

- What is PDM?
- What is the Teamcenter Rich Application Client?
- Person, Users, Roles and Groups.
- What is Teamcenter Integration?
- The Teamcenter Integration Open Part File dialog.
- The Teamcenter Integration Create new Part File dialog.
- Default Container, Create Folder.
- Open Folder as Templates Palette.
- Teamcenter Integration Preferences.
- What are Items, Item-revisions and Datasets.
- Create new modeling files (Master-parts) and related files (Non- Master-parts).
- Search function in Teamcenter Integration.
- Create Assemblies in Teamcenter Integration.
- Opening Assemblies in Teamcenter Integration.
- Implicit and explicit Check-out Check-in mechanism.
- Introduction of Revision Rules.
- Where-Referenced and Where-used.
- Starting a Workflow process (introduction workflow).

Teamcenter visualization professional

ID : PLM-2023-TVP

Duration: 2 days

Prerequisites: No prerequisites required

Overview: This training teaches how to view, measure, annotate, manipulate and analyze 3D models and 2D images in Teamcenter Visualization. Learn how to share your analytics across your business.

Who should attend : Engineers, designers and anyone else who needs to see 3D or 2D models and enrich that content to share with others.

Primary course topics :

Day 1

- Introduction.
- Course content.
- Open files.
- Understand the user interface.
- Working with the assembly tree.
- Control the visibility of parts.
- Select parts.
- Navigate between models.
- Set user preferences.
- Advanced Navigation Methods.
- Part Properties and Attributes.
- Alternative hierarchies, Exploded views, Snapshots.
- Appearance of parts.
- Realistic rendering.
- Advanced part appearance.
- Parts processing.
- Use manipulators to rotate and translate parts.
- Relocate parts by referencing other parts.
- Use Parts Manipulation mode to move them.

Day 2

- Measure 3D models.Slice models.
- 3D coordinate systems.
- Creating a motion file.
- Reading Motion Files.
- Movie recording.
- Parts Comparison.
- Visual reports.
- Visualization of CAE results.
- PMI display.
- 3D annotations.
- Legends and symbols.
- Creation of parts reports.
- Vectors.
- 3D dimensions and tolerances (GDT).
- Capturing 2D images and 3D models.
- Working with 2D images.
- save work.
- Hold virtual conferences.

Teamcenter Visualization Mockup

ID : PLM-2023-TVM

Duration: 3 days

Prerequisites: No prerequisites required

Overview: Learn to view, measure, markup, manipulate, and analyze 3D models and 2D images in Teamcenter Visualization 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

Primary 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.

Schedule Manager

ID : PLM-2023-SCHM

Duration: 2 days

Prerequisites: No prerequisites required

Overview: The Teamcenter Schedule Manager course provides instruction on how to use the Teamcenter Schedule Manager software in three main focus areas: Schedule Management; Resource Management; and Teamcenter Integration. Concepts and procedures for creating schedules, milestones, and tasks, assigning resource to tasks, and integrating with other applications for workflows, phase gate, and reports, are taught in this course.

Primary course topics

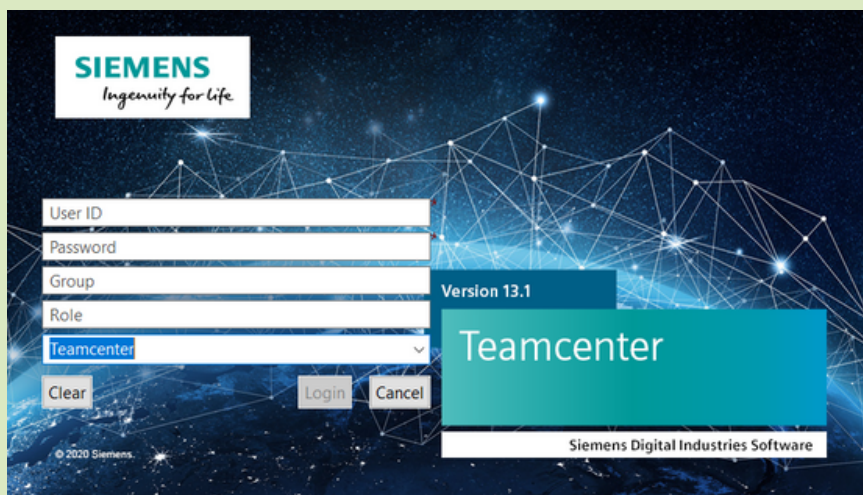
Create schedules, tasks, and milestones

Day 1

- Link and constrain tasks.
- Assign tasks and create disciplines.
- Create and use schedule templates.
- Create and link to workflows.

Day 2

- Create a phase gate process.
- Manage user permissions.
- Manage deliverables.
- Create reports and dashboards.
- Use the notification and subscription wizard.



TECNOMATIX PLANT SIMULATION

Tecnomatix is a comprehensive portfolio of digital manufacturing solutions that helps digitize manufacturing and the process of transforming innovative ideas and raw materials into transformative products.

With Tecnomatix software, product engineering, manufacturing engineering, production and service operations are synchronized to maximize your production efficiency.



Plant Simulation Basics

ID : PLM-2023-PSB

Duration: 5 days

Prerequisites: No prerequisites required

Overview : 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.

TOPICS

DAY 1

- Introduction to simulation studies.
- Overview of Plant Simulation.
- Get started with Plant Simulation.
- Explore the Plant Simulation graphical user interface.
- Perform a basic simulation study (begin).
- Define a target, analyze a simple system, and acquire data.

- Create a simple model.
- Validate the throughput of a simple model.
- Prepare to create a new model from the previous model.
- Create a more detailed model to produce a better result (begin)

DAY 2

- Perform a basic simulation study (finish).
- Create a more detailed model to produce a better result (finish).
- Implement basic objects to analyze results.
- Extend a model to include more realistic, modular component.
- Create a hierarchical model.
- Identify inherited objects and attributes.
- Navigate and change 3D viewer visualization.
- Simulate machine processing time and failures with distributions.
- Material flow objects with a capacity greater than one.
- Extend a model to include conveyors and workers (begin).
- Model length-oriented objects (begin).

DAY 3

- Extend a model to include conveyors and workers (finish).
- Model length-oriented objects (finish).
- Setup time, assembly, and dismantle objects.
- Create user-defined attributes and data tables.
- Use basic workers and work shifts.
- Extend a model to include presentation collateral (begin).
- Create experiments and custom reports.
- Gather time, cost, and power consumption statistics.

DAY 4

- Extend a model to include presentation collateral (finish).
- Add textured plates, point clouds, and backgrounds.
- Extend a model to include custom logic/methods (begin).
- Insert custom logic.
- Use the Method Debugger and anonymous identifiers.
- Run a method during a simulation.
- Set attribute values with methods.
- Control frames and access data in tables (begin).

DAY 5

- Extend a model to include custom logic/methods (finish).
- Control frames and access data in tables (finish).
- Access data in tables, built-in methods, and convert data.
- Create conditional methods and access the contents of an object.
- Model transport systems and setup time.
- Collect statistics with methods.
- Save and load data into a Plant Simulation table.

Create Plant Simulation models using advanced modeling techniques+

ID : PLM-2023-CPSMUMT

Duration: 3 days

Prerequisites: No prerequisites required

Overview : In this course is industrial engineers model transporters, debug models, use distributions, use statistical tools, model cranes, use observers, create userdefined dialogs, and create 2D mod.

TOPICS

Day 1 :

- Model transporters and working on lines.
- Debug models and improve method performance.
- Model using distributions and random numbers.
- Use statistical tools and variance.

Day 2 :

- Model cranes, gantries, and lifts.
- Create user-defined interfaces, dialogs, and menus (part 1).
- Create user-defined interfaces, dialogs, and menus (part 2).

Day 3 :

- Process specific examples (first portion).
- Create models in 2D with display panels.
- Use the 2D icon editor and vector graphics.

Exchange data with Plant Simulation using Teamcenter, virtual commissioning, and more

ID : PLM-2023-EDPSUTVCM

Duration: 1 day

Prerequisites: No prerequisites required

Overview : In this course, industrial engineers, explore Plant Simulation interfaces such as DDE, File link, Teamcenter, Virtual Commissioning, and more.

TOPICS

- Use advanced file interfaces and communication protocols.
- Use the Plant Simulation Teamcenter interface.
- Identify virtual commissioning with Plant Simulation.
- Perform virtual commissioning with Plant Simulation.

Perform advanced Plant Simulation optimization and experimentation

Duration: 1 day

Prerequisites: No prerequisites required

Overview : In this course, industrial engineers automatically run experiments and optimize using advanced tools in Plant Simulation.

TOPICS

Day 1:

- Perform basic experimental design.
- Perform advanced experimental design.
- Perform experiments using neural networks.
- Optimize with stochastic simulation.
- Optimize a model using genetic algorithms.

Set up Plant Simulation 3D objects

ID : PLM-2023-SPS3DO

Duration: 1 day

Prerequisites: No prerequisites required

Overview : In this course, industrial engineers create and use cameras, create and import 3D graphics, and create a custom library of objects.

TOPICS

Day 1 :

- Setup and use cameras.
- Import and create a library of 3D objects.
- Create MU animation and animatable objects.
- Customize 3D objects with methods.
- Use advanced worker techniques.

Plant Simulation Advanced Modeling and Optimization

ID : PLM-2023-PSAMO

Duration: 4 Days

Prerequisites: No prerequisites required

Overview : 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.

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.

SIMCENTER STAR CCM+

Simcenter helps predict critical system performance

The Simcenter range uniquely combines 1D simulation, 3D CAE and testing to enable you to proactively predict the critical performance of all systems across the full product lifecycle.

By combining physical simulations and insights from data analysis, Simcenter enables you to optimize, design and deliver innovative products faster and more reliably.



Fundamentals of Simcenter STAR-CCM+

ID : PLM-2023-FSSCCM

Duration: 3 days

Prerequisites: No prerequisites required

Overview : 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 Simcenter 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 Simcenter 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 Simcenter STAR-CCM+ comfortable in the knowledge that Siemens engineering support will be available to provide on-going technical support.

Battery Simulation Module

ID : PLM-2023-BSM

Duration: 1 days

Prerequisites: No prerequisites required

Overview: 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.

User-Defined Battery simulation in Simcenter STAR-CCM+

ID : PLM-2023-UDBSSSCC

Duration: 2 days

Prerequisites: No prerequisites required

Overview : Battery simulation allows the user to simulate thermal effects in batteries and their effect on the surrounding flow. This course introduces user-defined batteries. It covers the setup workflow, terminology, and physics. Guidance for the names of CAD parts for a successful mapping of battery cells is given. A pouch cell is used in all exercises to explain the concepts and general Simcenter STAR-CCM+ capabilities.

- Battery cells and connectors are imported and setup in a series of 3. A single automated mesh operation is used to mesh parts individually. The three battery cells in series are placed in a casing.
- Two battery modules are set up to run independently in the same sim file. They are cooled using different materials.

Analyzing and post processing data in Simcenter STAR-CCM+

ID : PLM-2023-APPDSSCCM

Duration: 1 day

Prerequisites: No prerequisites required

Overview: 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 Simcenter STAR-CCM+ Viewer.

Cleaning CAD using the 3D-CAD parametric modeler in Simcenter STAR-CCM+

ID : PLM-2023-CAD3DPMSSCCM

Duration: 1 day

Prerequisites: No prerequisites required

Overview: The aim of this course is to prepare you to use features in Simcenter STAR-CCM+ to clean, modify, and prepare imported CAD geometries for CAE simulations. This includes diagnosing CAD errors and repairing them with geometry repair tools. In addition, you will gain skills needed to efficiently reduce and expand geometries for effective meshing and parametric modeling in Simcenter STAR-CCM+. Presentations, demonstrations, and practice labs provide you with multiple opportunities to learn and apply the knowledge and skills needed to confidently prepare CAD for CAE simulations.

Basic Simcenter STAR-CCM+

ID : PLM-2023-BSSCCM

Duration: 2 days

Prerequisites: No prerequisites required

Overview : 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 Simcenter STAR-CCM+ for conducting multi-physics simulations. Attendees will experience a gradual well-structured learning curve over a two day period that reflects the major processes developed in Simcenter STAR-CCM+. At the second 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 Simcenter STAR-CCM+ comfortable in the knowledge that Siemens PLM engineering support will be available to provide ongoing technical support.

Data Analysis and Post Processing

ID : PLM-2023-DAPP

Duration: 1 day

Prerequisites: No prerequisites required

Overview: 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 .

Eulerian multiphase modeling in Simcenter STAR-CCM+

ID : PLM-2023-EMMSSCCM

Duration: 2 days

Prerequisites: No prerequisites required

Overview: After an introduction in general multiphase modeling approaches in CFD (Computational Fluid Dynamics), we present the various models available in Simcenter STAR CCM+ to model multiphase flows. The focus of this course is then on the Eulerian Multiphase (EMP) model with its various options to model phase interactions. Starting with mono-dispersed flows in an aerated mixing vessel we expand the application to flows with particles / bubbles of various sizes and finally, add dissolution mass transfer to the mix. Leaving flows restricted to only particles behind, we dip into flows with large scale interfaces. All concepts are discussed in presentations and practiced in labs. Some of the labs have detailed instructions, others invite the user to solve tasks to solidify the skills learned in the lessons.

Meshing Best Practices

ID : PLM-2023-MBP

Duration: 2 days

Prerequisites: No prerequisites required

Overview : 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.

Simcenter STAR-CCM+ Fundamentals

ID : PLM-2023-SSCCMF

Duration: 1 day

Prerequisites: No prerequisites required

Overview: 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 engineering support will be available to provide on-going technical support.

This is a public classroom training offered at our training center in Nuremberg (over 3 consecutive days), as well as online training (over 5 consecutive morning sessions). Where / in which format it's given, you can see in our ClassFinder under location. The training can be attended using 12 "Simcenter Training Credits" [TR-SCS-TOK] or 2400 "Learning Services Credits" [DE-LS-CDTS] per attendee.

Diese Schulung wird in deutscher Sprache gehalten. Die Kursbegleitunterlagen sind in englischer Sprache. Sie wird in unserem Schulungszentrum in Nürnberg (3 Tage von morgens bis Abends) oder als Online Schulung (verteilt auf 5 Vormittage) angeboten. In welchem Format sie zum jeweiligen Termin angeboten wird, können Sie in unserem ClassFinder unter Veranstaltungsort bzw. Location sehen.

Basic STAR-CCM+

ID : PLM-2023-BSCCM

Duration: 3days

Prerequisites: No prerequisites required

Overview : 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.

Selective catalytic reduction simulation in Simcenter STAR-CCM+

ID : PLM-2023-SCRSSSCCM

Duration: 1 day

Prerequisites: No prerequisites required

Overview : 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 simulation course is to provide analysis engineers with the ability to set up and run SCR simulations in Simcenter STAR-CCM+.



Siemens NX software is a flexible and powerful integrated solution that helps you deliver better products faster and more efficiently. NX delivers the next generation of design, simulation, and manufacturing solutions that enable companies to realize the value of the digital twin.

Supporting every aspect of product development, from concept design through engineering and manufacturing, NX gives you an integrated toolset that coordinates disciplines, preserves data integrity and design intent, and streamlines the entire process.

NX Basic sketch

ID : PLM-2023-NXBS

Duration: 2 days

Prerequisites: No prerequisites required

Overview : This course is recommended for designers, CAD engineers, manufacturing engineers application programmers, NC programmers and CAD/CAM managers who need to create who need to create sketches in NX and learn good sketching techniques for 3D techniques for 3D modeling either solid, surface or other functions.

After successfully completing this course, you will be able to:

- Understand when and why to use sketches.
- Create sketches.
- Constrain sketches.
- Use additional sketching techniques.

NX Surface Modeling

ID : PLM-2023-NXFM

Duration: 5 days

Prerequisites: No prerequisites required

Overview : This course will provide you with the necessary robust and reliable skills to build surface parts that can be used in the manufacturing application. You will learn methods of incorporating free-form (surface) features into a part, from reverse engineering product models for complex engineering designs.

NX Synchronous technology and parametric design

ID : PLM-2023-NXSTPD

Duration: 3 days

Prerequisites: No prerequisites required

Overview : This course is designed for NX users who want to further exploit the parametric functionality and synchronous modeling capabilities of NX in their design processes.

NX Basic synchronous technology

ID : PLM-2023-NXBST

Duration: 1 day

Prerequisites: No prerequisites required

Overview

This course is intended for users who are already familiar with NX, but want to learn how to use the synchronous modeling design tools. Synchronous technology unites parametric and history-free modeling regardless of origin or associativity. This course provides hands-on activities and projects that focus on history-free and parametric constraint techniques to speed up the design process used to create new parts and, to modify existing parts.

NX Essentials for NX Designers

ID : PLM-2023-NXENXD

Duration: 5 days

Prerequisites: No prerequisites required

Overview : This course aims to launch NX designers on the path to productivity. This course is designed to meet the expectations of the designer, to transfer classroom instruction to the workplace productivity. In this course, the designer will be able to design finished products, define product details and, provide assembly modeling and master model concept basics.

NX Basic design

ID : PLM-2023-NXBD

Duration: 2 days

Prerequisites: No prerequisites required

Overview : This course is designed to give a user a high-level overview of NX modeling, assemblies, and drafting topics. This class, through professional instruction for product design, assembly modeling, and basic model concepts, allows you to transfer the instruction in class to work productivity.

After successfully completing this course, you should be able to:

- Open and examine NX models.
- Create and modify parametric solid models.
- Create and modify basic assembly structures.
- Create and modify simple drawings.

NX Intermediate Design and Assembly

ID : PLM-2023-NXIDA

Duration: 5 days

Prerequisites: No prerequisites required

Overview : This intermediate level Design and Assembly course allows the candidate to integrate and manipulate sketching, inter-part modeling, design intent, and several assembly topics.

NX Industrial Design

ID : PLM-2023-NXID

Duration: 4 days

Prerequisites: No prerequisites required

Overview : This course provides you with the knowledge and skills necessary to define stylish shapes using curves and complex surfaces.

Upon completion of this course, the student should possess the skills required to create strong curvature of complex surfaces with tangent continuity and/or curvature and create blends and transition surfaces. The student will also learn to dynamically modify and analyze surfaces and demonstrate products through the application of advanced visualization techniques.

NX Drawing Essentials

ID : PLM-2023-NXDE

Duration: 3 days

Prerequisites: No prerequisites required

Overview : The drafting application provides you with the tools to create and fully annotate drawings of three-dimensional models generated in the modeling application. NX drawings are fully associative with the model geometry. This associativity ensures that your drawings reflect the latest model configuration.

The Course:

- Learn how to effectively use the NX drafting application.
- Prepare to create highly detailed engineering drawings.
- Demonstrate the interdependent nature of modeling, drawings and assemblies.

NX Product Manufacturing Informations

ID : PLM-2023-NXOIPMI

Duration: 3 days

Prerequisites: No prerequisites required

Overview : The Products and Information Course (PMI) is of course an NX work environment for attaching non-geometric information, such as text, dimensions or symbols, to a part file. You create PMI when you are in other applications, such as gateway and modeling. The attached information is then used by downstream applications such as tooling, manufacturing, inspection and shipping. In most cases, you can attach the information to any object in the part file. The information is displayed in 3D space, which allows you to define more useful information than is possible on a 2D drawing.

NX Management of large assemblies

ID : PLM-2023-NXMLA

Duration: 3 days

Prerequisites: No prerequisites required

Overview : The course covers cloning, sequencing, assembly cutting, layouts, part deformation, reference frames, component grouping, representations, and weight management. The course includes advanced assembly functions in addition to the standard design functions in NX software.

NX Mold design process

ID : PLM-2023-NXMDP

Duration: 5 days

Prerequisites: No prerequisites required

Overview : Expert NX tool designers will gain the skills needed to significantly reduce mold design time through the automation of the Mold Wizard. The program mimics common tasks used in mold construction and is reinforced with hands-on activities. Mold Wizard is a collection of tools that help you by automating common mold design tasks.

NX Introduction to NX for advanced users

ID : PLM-2023-NXINSAU

Duration: 5 days

Prerequisites: No prerequisites required

Overview: This course provides an introduction to NX for designers who will be using NX on a daily basis. Upon completion of this course, experienced 3D parametric CAD users will be able to create and modify parts, assemblies and products in NX, building on 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.

NX Sheet Metal

ID : PLM-2023-NXSM

Duration: 2 days

Prerequisites: No prerequisites required

Overview: This course addresses all the tools available in the Sheet Metal application for creating machines, cabinets, racks, and other parts normally made with a press brake. It shows how to create basic functions such as tabs and contour flanges with more advanced features. It also introduces the functionality of advanced Aerospace and Sheet Metal.

NX Electrical Routing

ID : PLM-2023-NXENXD

Duration: 5 days

Prerequisites: No prerequisites required

Overview : The Electrical Routing course provides the common user interface for defining paths, how to qualify parts for use in a routing assembly, accessing standard parts and placing parts in the routing assembly or creating and modifying wiring paths and how to assign components and connectors (manually or automatically). Electrical Routing provides additional options and functionality for creating and managing wiring assemblies.

NX Mechanical Routing

ID : PLM-2023-NXENXD

Duration: 2 days

Prerequisites: No prerequisites required

Overview: The Mechanical Routing course teaches you to use the tools used to quickly define linear paths around and through other NX assemblies, assign mounts to paths, and qualify and place standard parts (e.g. valve flanges and pipe tees). These assemblies typically define the systems that provide the piping, tubing, ducting, piping... The course also includes a section on developing logic diagrams.

NX Progressive Die Wizard

ID : PLM-2023-NXENXD

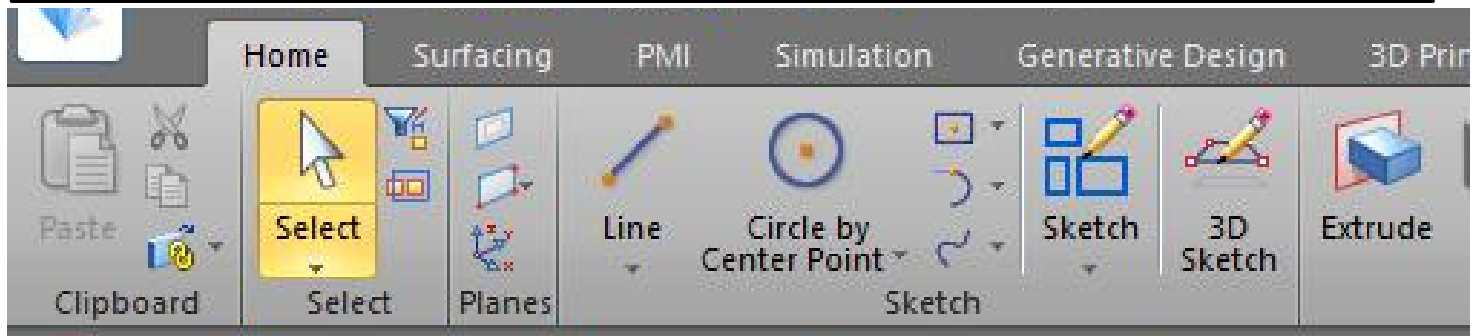
Duration: 4 days

Prerequisites: No prerequisites required

Overview: This course provides design tools to follow to transform flat metal strips into complex 3D parts. You will be able to use the built-in knowledge of high designs in the Progressive Die Wizard to incorporate industry best practices and build progressive dies

SOLID EDGE:

Solid Edge is a portfolio of affordable, easy-to-use software tools that address all aspects of the product development process. Solid Edge combines the speed and simplicity of direct modeling with the flexibility and control of parametric design – made possible with synchronous technology.



Initiation Solid Edge

ID : PLM-2023-ISE

Duration : 4 Days

Prerequisites: No 3D design prerequisites. Knowledge of the PC environment and Windows.

Overview: Acquire the skills to create parts with simple geometries, assemblies and 2D drawings. Master a robust and orderly design method. Learn to manage CAD files.

TOPICS:

Day 1

- Discovering the Solid Edge interface
- Creating drawings and sketches
- Select and create new drawings
- Draw sketches in these planes using the different tools
- Create a simple part (basics)
- Create volumes by extrusion and revolution, drillings, fillets and chamfers
- Define the material and properties of the part

Day 2

- Master the applied functions
- Create hulls and drafts
- Copy functions by symmetry or by matrix. Modify the created functions
- Manage the tree structure of a part
- A robust design method

- Choose an order of functions allowing a fast and error-free quick and error-free modification Rename and group functions
- Case studies
- Creating an assembly
- Master the different assembly relationships Place parts by symmetry or matrix parts by symmetry or by matrix Duplicate and clone components.

Day 3

- Managing assemblies
- Use display configurations Create simplified assemblies simplified assemblies Measurement tools
- Check static and dynamic interference
- Creating and dressing 2D drawings
- Draw a part and an assembly Create, dimension and annotate views
- Place tables and a bill of materials

Day 4

- Managing CAD files
- Understand the links between files Use the design manager
- Copy, rename and revise a component Create a Pack & Go
- Create an assembly manual
- Create an exploded view
- Drawing an exploded view
- Complete practical exercise
- Create the parts, the assembly and the drawing of a simple mechanical assembly
- Possibility to use a concrete example provided beforehand by the trainee

Solid Edge 2D Drafting

ID : PLM-2023-SE2DD

Duration: 2 days

Prerequisites: No knowledge of CAD is required. Mastery of the basics of the Windows environment is essential.

Overview: Be able to produce design drawings of parts and mechanical parts and mechanical assemblies in 2D as well as to customize title blocks and parameterize drawing templates.

TOPICS:

Day 1

- Discovering the user interface
- Drawing in 2D
- Study the drawing tools
- Studying the modification tools Placing geometric relations Mastering the tools of dimensioning tools
- Manage automatic dimensioning: Intellisketch
- Creating 2D views
- Work on the 2D model
- Placing 2D model views
- Use the " Grid " function

Day 2

- Dressing a drawing: dimensions and annotations
- Define precision dimensions: tolerances
- Use prefixes
- Place legends and speech bubbles
- Set automatic property fields Create weld and roughness symbols
- Create weld and roughness symbols Place axis lines and center marks Block BOM
- Optimize design time of drawings
- Using blocks and symbols
- Working with levels or layers
- Importing and exporting DXF and DWG files
- Setting up
- Creating a custom title block

The Fundamentals

ID : PLM-2023-FUND

Duration: 6 days

Prerequisites: No knowledge of CAD is required. Mastery of the basics of the Windows environment is essential.

Overview: Know how to create parts, assemblies and layouts of increasing of increasing complexity.

Master an efficient and orderly design method.

Learn to manage CAD files.

TOPICS:

Day 1

- Discovery of the Solid Edge interface Creation of a
- part (basic notions)
- Master the concepts of planes and sketches
- Create volumes by extrusion and revolution Place holes, fillets and chamfers and chamfers Define the material and properties of the properties of the part.
- Exercises
- Numerous practical cases of increasing difficulty allowing to Understand and master the organization of functions

Day 2

- Master the advanced functions
- Discovery of hulls, sweeps, connections, ...
- Copy functions by symmetry or by matrix
- Advice on design methodology
- Choose an order of functions allowing a fast and error-free modification
- Rename and group functions Practical cases
- Creating an assembly
- Master the basic relationships
- Place parts by symmetry or by matrix
- Duplicate and clone components

Day 3

- Creating an assembly (continued)
- Use display configurations
- Check for static and dynamic interference
- Creating and dressing 2D drawings
- Create, dimension and annotate views Place a bill of materials
- Managing CAD files
- Understand the links between files
- Introduction to the design manager

Day 4

- Managing CAD files (continued)
- Use the Design Manager Copy, rename and revise a component
- Create a Pack & Go Create complex shapes
- Adding material by sweeping and splicing Drafting and ribbing undercuts and ribs
- Advanced die features
- Design of parametric parts
- Use variables and formulas Create part families.

Day 5

- Create a complex assembly.
- Master all assembly relationships.
- Design parameterized assemblies Create parts in the context of an assembly Create links between parts in an assembly Concept of assembly families.
- Explode an assembly.
- Create an exploded view and draw it.

Day 6

- Design of frames.
- Create the reference part and apply profiles.
- Introduction to Synchronous Technology.
- Modify a "dead body".
- Dimensioning in 3D, Setting up geometrical relationships.
- Use the Compass and design intentions Combine
- and synchronous technology.
- Complete practical exercise.
- Make the parts, the assembly and the drawing of a simple mechanical
- mechanical assembly.
- Exercise based on a concrete example provided by the trainee.

The Fundamentals – Sheet Metal

ID : PLM-2023-FUND

Duration: 6 days

Prerequisites: No 3D design requirements.

Overview: Know how to create parts, assemblies and drawings of increasing complexity. A focus is made on the design of sheet metal parts.

Master an effective method of orderly design.

Learn to manage CAD files..

TOPICS:

Day 1

- Discovery of the Solid Edge interface Creation of a sheet metal (basic concepts)
- Master the concepts of planes and sketches
- Create sheets with the faces and folds functions
- Add corner treatments
- Place holes
- Define the gauge, the material and the properties of the sheet the unfolding of a sheet
- Master the deformation functions
- Place deformation functions.

Day 2

- Mastering applied functions Copying functions
- by symmetry or by matrix Folding and collapsing folds
- Cost estimation (from Classic).
- Advice on design methodology.
- Choose an order of functions that allows for quick and error-free modification.
- Creating an assembly.
- Master the basic assembly relationships.
- Place parts by symmetry or by matrix Duplicate and clone components.

Day 3

- Creating an assembly (continued)
- Use display configurations
- Check for static and dynamic interference
- Creating and dressing 2D drawings
- Create, dimension and annotate views Place a bill of materials
- Managing CAD files
- Understand the links between files, Introduction to the Design Manager

Day 4

- Managing CAD files (continued)
- Use the Design Manager Copy, rename and revise a component Create a Pack & Go.
- Create complex sheets.
- Create hoppers (understanding options).
- Designing parametric sheets.
- Use variables and formulas Create part families.
- Discovering the part environment The basic functions of the part environment Switching from a part to a sheet metal.

Day 5

- Create a complex assembly.
- Master all assembly relationships.
- Design parameterized assemblies.
- Create parts in the context of an assembly.
- Create connections between parts in an assembly.
- Use assembly families.
- Exploded view and animation: assembly instructions.
- Create an exploded view and draw it.

Day 6

- Frame design.
- Create the reference part and apply profiles.
- Introduction to Synchronous Technology.
- Modify a "dead body".
- Dimensioning in 3D, setting geometric relationships
- Use the Compass and design intentions Combine ordered and synchronous.
- Complete practical exercise.
- Realize the parts, the assembly and the drawing of a simple mechanical set (if possible example of the trainee).

ID : PLM-2023-FUND

Duration: 3 days

Prerequisites: No 3D design requirements.

Overview: Acquire the skills to create parts with simple geometries simple geometries, assemblies and 2D drawings. Master a robust, orderly design method Learn to manage CAD files.

TOPICS:

Day 1

- Modeling without function history
- Through 2 examples, understand the principle of direct editing on a simple part and its advantage on a complex part.
- Design in Synchronous.
- Locking a drawing.
- Understand how regions work Place ribs 3D.
- Create volumes by extrusion and revolution.
- Modify while respecting design intent.
- Modify by changing your design intent with the Solution Manager.
- Place holes, fillets and chamfers
- Synchronous limits and solutions: the mixed ordered/synchronous.
- Switch to Ordered Move to Synchronous.
- A robust modeling method mixingb and synchronous.

Day 2

- Modification of dead bodies.
- Recognition of drill holes, drill dies and chamfers.
- Imposing geometric dimensions and relationships.
- Synchronization in the assembly.

- Modification from the assembly.
- Impose dimensions and relationships from the assembly.
Creating a synchronous part from the assembly.
- Functions applied in synchronous.
- Create shells and drafts.
- Copy functions by symmetry or by matrix.

Day 3

- Creation of a sheet metal with the Synchronous Technology.
- Mastering the addition of faces and folds.
- The advantages of synchronous technology: face orientation Mastering face
- following profile in synchronous.
- Place deformation functions.
- Mix part, sheet, ordered and synchronous.
- Transform a synchronous solid into an ordered sheet (ST8).
- Advanced functions.
- Live section.
- Inter-part copying.
- Copy and paste, detach and attach.
- Practical exercises.
- Possibility to work on concrete cases brought by the trainee.

Surfacique

ID : PLM-2023-SURF

Duration: 2 days

Prerequisites: No 3D design requirements.

Overview: Be able to design complex parts such as plastic parts such as plastic parts or foundry parts. Learn to validate the feasibility of a part using analysis tools.

TOPICS:

Day 1

- Why surfaces?
- The limits of solid modeling for complex shapes.
- Obtaining a solid with surfaces: sewing, boolean, thickening, replacing face, Creating curves.
- Bspline curve in the sketch, offset and simplify.
- Curve by key points and according to table, Cross curve, Project and wrap sketch, Creation of surfaces.
- Surface by extrusion and revolution Surface by sweep.
- Bounded surface, Blue Technology, Bluedot Bluesurf.
- Various techniques through exercises.
- Copy without internal contour, shift.
- Adjusted surface, Extend / relimit / adjust.
- Displaying symmetry and reflections Body symmetry /function symmetry.

Day 2

- From surface to volume.
- Thickening Replace faces Sewing.
- Boolean operations.
- Continuity control and drafting.
- What is continuity in curvature or tangency?
- How to control it : the control handles How to check it, analyze it :zebra and comb.
- Control of continuity on the plane of symmetry Continuity leave of curvature.
- Basic draft/advanced draft Analysis of drafts, Summary exercises

Product line management

ID : PLM-2023-PLM

Duration: 2 days

Prerequisites: No 3D design requirements.

Overview: To be able to carry out complex assemblies controlled by one or more parameters and then develop a range of a range of products.

TOPICS:

Day 1

- Design of parameterized parts.
- Order the functions of a part for robust parameterization.
- Rename pilot dimensions and add formulas.
- Use IF, INT and Limits functions. Pilot variables from a file.
- Excel Create part families.
- Use part copies.
- Create parameterized assemblies.
- Create assembly families Publish an associative member.
- Master the different types of inter-part links.
- Use inter-part copies.
- Use the technological functions of assembly Inserting an assembly copy.

Day 2

- Manage CAD files.
- Understand the links between files Use the design manager.
- Copy, rename and revise a project.
- Organize your files to avoid duplication.
- Manage component revisions.
- Create a Pack & Go.
- Create a complete project.
- Create a project based on the client's files.

Keyshot : Photorealistic Rendering and Animation

ID : PLM-2023-KPRA

Duration: 1 day

Prerequisites: No 3D design requirements.

Overview: Know how to create an exploded image, an animation and a photo-realistic rendering thanks to the Keyshot module (functionality available from ST7)

TOPICS:

Day 1

- Introduction.
- The photo realism in 3D.
- The different effects: bevel, depth of field, specular map Environment and HDRI map, The sites for HDRI.
- Software interface,Libraries.
- Presentation of the interface.
- Import formats, Live linking, Keyshot resources,Navigations.
- Moving around in the 3D view, Handling 3D objects, Keyboard shortcuts.
- Materials management (assign, edit, copy/paste, unlink), Common parameters.
- Materials: axalta, cloth and leather, gem stones, glass, plastic, stone, toon, wood, metal, miscellaneous.
- Mold tech Light materials: ies, aera, point light. Materials: translucent, liquids, paint, Caustics.
- The colors in the library The tool " material sets " The cloud
- Textures,Texture parameters, texture plating.
- Textures bump and normal map, Opacity map, Specular map,Label,Procedural texture,The scene tree.
- Hide/show elements, Create a group, Multi-selection, Duplication, Multi-copy.
- Environment.,Adjust perspective, Camera, Depth of field, Settings,Rendering.
- Still images ,Quality and rendering settings,Animations.
- Importing an animation from Solid Edge.
- Animation properties, Toolbar and interface.

ID : PLM-2023-KPRA

Duration: 1 day

Prerequisites: No 3D design requirements.

Overview: Learn how to create a trajectory within an assembly and apply a network of tubes to it using fittings from Standard Parts or from your own library.

TOPICS:

Day 1

- Reminder on the Assembly environment.
- Modeling a piping system in an assembly.
- Create 2D or 3D trajectories.
- Assign pipes to a path Modify end conditions
- Change end conditions.
- Impose a length on a flexible element Create adaptive
- adaptive hoses (from 2019) Re-route a path (from 2019)
- path (from 2019).
- Define a piping system using the wizard.
- Assign fittings and attributes.
- Export pipe report.
- 3D sketches.
- Use the 3D sketching environment.
- Drawing and reporting.
- Retrieve pipe length and bending information
- BOM: pipe specific information.
- Application exercises/miscellaneous questions.

Solid Edge P&ID Design

ID : PLM-2023-SEP&IDD

Duration: 1 day

Prerequisites: No 3D design requirements.

Overview: Be able to create a hydraulic diagram with P&ID

TOPICS:

Day 1

- Discovery of the P&ID interface.
- Main menu, toolbar, selection menu, workspace
- Creation of a new project.
- Drawing tools.
- Creation of pipe lines Selection and modification tools
- modification tools Parameter control
- Symbols and components.
- Use of the symbol library and the Component
- Database.
- Creation of lists.
- Importance of the TAG number Component lists (BOM).
- Modifying the displayed information.
- Pipe class management Use the Pipe tool.
- Specification Editor Create/Modify a pipe class.
- Conversion to PDF.

Solid Edge Piping Design

ID : PLM-2023-KPRA

Duration: 2 days

Prerequisites: No 3D design requirements.

Overview: Be able to generate a piping system with the Piping Design.

TOPICS:

Day 1

- Discovering the Piping Design interface.
- Inserting components Using the Piping window.
- Place part function.
- Generate the piping network.
- XpresRoute, PathXpres, 3D Line Segment Pipe
- Piping paths.
- Associate the pipe line.
- Isometric drawings.
- Create basic isometric drawings Create spool isometric drawings isometric planes.

Day 2

- Managing pipe classes.
- Use the Pipe Specification Editor tool.
- Create/Modify a pipe class.
- Allow or not allow a space for welding.
- Use a pipe class.
- Insert components automatically.
- Create and use a new component.
- Component Wizard tool.
- Add a component in the DataBase.
- Insert a new component.
- Complete practical exercise.
- Create a pipe class and use it to create a pipe network.

Modular Plant Design: P&ID and Piping Design

ID : PLM-2023-MPDP&IDPD

Duration: 3 days

Prerequisites: No 3D design requirements.

Overview: Be able to create a hydraulic diagram with P&ID, create the links with the 3D model and generate the piping system with Piping Design.

TOPICS:

Day 1

- Discovery of the P&ID interface.
- Creation of a schema.
- Create a new project.
- Drawing tools (creation of pipe lines, component insertions).
- Selection tools.
- TAG number and parameters.
- Inserting lists.
- Component lists (BOM).
- Conversion to PDF.

Day 2

- Discovery of the Piping Design interface.
- Create links between P&ID and Piping Design.
- Use the To-Do List P&ID tool.
- Insert components.
- Place fittings in CAD Create a sub-assembly in CAD.
- Generate the piping network.

- XpresRoute, PathXpres, 3D Line Segment Pipe
- Paths.
- Associate the pipe line.
- Isometric planes.
- Create basic isometric planes Create spool isometric planes.
- Pipe class management Use the Pipe Specification tool.
- Editor Create/Modify a pipe class.
- Allow or not allow a space for welding.
- Use a pipe class.
- Insert components automatically.

Day 3

- Create and use a new component.
- Component Wizard tool.
- Adding a component in the DataBase Inserting a new component.
- Complete practical exercise.
- Create a hydraulic diagram on P&ID, make the links with the 3D and generate the piping network in Piping Design.

Solid Edge Electrical

ID : PLM-2023-SEE

Duration: 4 days

Prerequisites: No 3D design requirements.

Overview: Be able to create a complete electrical diagram with Wiring Design, create the connections with the with 3D modeling with Solid Edge Electrical Routing and a beam diagram with Harness Design.

TOPICS:

Day 1

- Discover the Solid Edge Electrical interface, Create a new project.
- Organization of the different diagrams, User management.
- Discussion of the software's scope and limitations.

Day 2

- Focus on the symbol library.
- Creation of symbols and editing of the library.
- Explanation of the different objects present in the software.
- Introduction to the creation of electrical diagrams on Wiring Design.
- Partial exercises to work on specific cases.

Day 3

- Focus on Wiring Design Creation of a complete Analysis of its operation, Export to Solid Edge.
- Use of the gateway between Solid Edge and Solid Edge Electrical.
- Presentation of Solid Edge Electrical Routing.

Day 4

- Focus on the harness module.
- Manual creation of harnesses.
- Automatic creation from an already established schematic of a harness diagram with information about the wires, lengths colors.
- Complete exercise and assessment of the software.

Solid Edge Wiring Design

ID : PLM-2023-SEE

Duration: 3 days

Prerequisites: No 3D design requirements.

Overview: Be able to create a complete electrical diagram with Wiring Design with Wiring Design and create the connections with the 3D modeling with Solid Edge Electrical Routing.

TOPICS:

Day 1

- Discover the Solid Edge Electrical interface.
- Create a new project.
- Organization of the different diagrams.
- User management.
- Discussion of the software's scope and limitations.

Day 2

- Focus on the symbol library.
- Creation of symbols and editing of the library.
- Explanation of the different objects present in the software.
- Introduction to the creation of electrical diagrams in Wiring Design.
- Partial exercises to work on specific cases.
- Creation of a complete electrical diagram Analysis of its how it works.

Day 3

- Exporting to Solid Edge.
- Use of the gateway between Solid Edge and Solid Edge Electrical.
- Presentation of Solid Edge Electrical Routing.
- Complete exercise and assessment of the software.
- Review of all the knowledge.

Solid Edge Harness Design

ID : PLM-2023-SEHD

Duration: 2 days

Prerequisites: No 3D design requirements.

Overview: Be able to make a beam diagram with Harness Design.

TOPICS:

Day 1

- Discover the Solid Edge Electrical interface.
- Create a new project.
- Organization of the different diagrams.
- User management.
- Discussion of the scope of the software and its limitations.
- Focus on the symbol library.
- Creation of symbols and editing of the library.
- Explanation of the different objects present in the software.
- Initiation to the creation of beam diagrams on Harness Design.
- Partial exercises to work on specific cases.
- Creation of a complete beam diagram.

Day 2

- Focus on Harness Design.
- Exercises of increasing difficulty allowing you to understand everything that can be done with the software.
- Complete exercise and assessment of the software.
- Review of all the knowledge acquired during the rest of the the rest of the training

Solid Edge Routing

ID : PLM-2023-SER

Duration: 1 day

Prerequisites: No 3D design requirements.

Overview: Be able to define and modify the trajectory of wires, cables and strands Know how to import and export data to electrical CAD software.

Produce a "nail board" type wiring plan.

TOPICS:

Day 1

- Reminder on the Assembly environment.
- Modeling electrical wiring in an assembly.
- Create 2D or 3D paths.
- Create wires, cables and strands.
- Assign terminals to parts.
- Use the bundle wizard to define wiring Export the
- BOM of connectors.
- 3D sketches.
- Use the 3D sketching environment.
- Generating the nail board (from ST5).
- Drawing an electrical wiring Adjusting the wiring paths wiring paths.
- Add the connectors plans Annotate the plan.
- Create the conductor table.
- Application exercises / Various questions.

Solid Edge Simulation

ID : PLM-2023-SES

Duration: 2 days

Prerequisites: No 3D design requirements.

Overview: Learn how to validate the design of parts and assemblies in the Solid Edge environment : definition of boundary conditions, meshing, interpretation results.

Know how to perform a thermal analysis in stationary, transient stationary, transient and coupled.

TOPICS:

Day 1

- What is a finite element simulation?
- Principles of finite element analysis Equations of strength of materials Description of the different types of analysis.
- The dangers of over-interpretation of results.
- Calculating the deformation of a part Creating a static structural analysis Put in data.
- Create an automatic mesh Analyze and validate the results Create a report.
- Prepare a model for the calculation.
- Create simplified models of parts and assemblies.
- Extract the median surface of a sheet or a part.
- Redraw surfaces to create contacts Use symmetries to simplify symmetries to simplify the calculation, Refine a mesh.
- Merge bodies to create mesh connections.
- Calculate the deformation of an assembly Create connectors between connectors between components Use connectors bolt connectors.
- Use a mixed surface/volume mesh Analyze the results.

Day 2

- Buckling and modal analysis, Principle and interest of a modal analysis.
- Realization and interpretation of a modal analysis.
- Realization and interpretation of a buckling analysis
Realization of a frame analysis of a frame analysis.
- Thermal calculation, The principles of heat exchange.
- Create a thermal analysis in stationary regime Create a thermal analysis in transient thermal analysis Perform a coupled thermal/structural analysis
- Dynamic response calculation.
- Principles of a vibration study.
- Vibration analysis on a structure.
- Resonance and fatigue analysis of a system.
- Optimization.
- Optimizing a shape and its mass.
- Minimize a displacement, a constraint Modify a natural frequency
- Application exercises / Various questions.

Cinématique pour Solid Edge

ID : PLM-2023-CPSE

Duration: 1 day

Prerequisites: No 3D design requirements.

Overview: Perform kinematic calculations of rigid bodies in order to dimension a spring, to calculate the power of a motor, to motor, to define a cam or to determine the functional loads functional loads for a finite element calculation.

TOPICS:

Day 1

- Introduction to Kinematics.
- The principle of solid dynamics calculation A simple example
- Construction of a mechanism Define fixed and moving parts
- Specify the mechanical links Apply a motion.
- Obtaining the reactions of forces.
- Advanced tools.
- Place springs and dampers Apply forces and moments Create 3D contacts.
- Plot trajectories, velocities and accelerations.
- Transfer results to a finite element simulation.
- Couple dynamic analysis with static deformation analysis in Solid Edge Simulation.
- Application exercises/miscellaneous questions.

FloEFD – Initiation

ID : PLM-2023-CPSE

Duration: 2 days

Prerequisites: No 3D design requirements.

Overview: Perform kinematic calculations of rigid bodies in order to dimension a spring, to calculate the power of a motor, to define a cam or to determine the functional loads functional loads for a finite element calculation.

TOPICS:

Day 1

- Discovery of the user interface.
- Preparation of the model.
- Simplification of the model.
- Check the geometry, search for leaks and create plugs.
- Choose the study to be carried out.
- Mastering the pre-processing.
- Creation of an analysis.
- Definition of the calculation domain. Insert boundary conditions.
- Define porous media and heat sources. Inserting objectives for the study.
- The mesh.
- Generate a mesh.
- Procedure and tools for mesh refinement.
- Mastering post-processing.
- Display of results: visualization planes, surface visualization, streamlines.
- Export of results to Excel.
- Animation of results and creation of video.

Day 2

- Project management and calculations
- Clone a project.
- Grouped launch.
- Follow-up of the calculation on line.
- Use of the technical database (porous media, fans, materials...).
- Control parameters of the calculation.
- Study of different types of flows
- Thermal study with radiation.
- Study of rotating regions (pumps, fans, ...).
- Study of free surface (tank emptying, ...).
- Study in transient regime. Study of particles.
- Optimization of a model
- Study of the variation of a value on a model.
- Optimization of a model according to a target.
- Comparison of the new model with the previous one.
- Application exercises / Various questions

FEMAP – Initiation

ID : PLM-2023-CPSE

Duration: 4 days

Prerequisites: No 3D design requirements.

Overview: Prepare a model, run simulations and interpret results.

TOPICS:

Day 1

- Discovering the Graphical Interface
- Navigate the menus, icon bars, status bar, graphical status bar, graphical windows, etc.
- Selection methods, Selection windows, graphic selection options, snapping and input options.
- Units
- General information and unit systems.
- Coordinate systems
- Definitions and creation of coordinate systems.
- Groups
- General description, creation, activation, display and operations. As well as the referenced groups.
- Display parameters
- View & Visibility menu, icon bars, colors, transparency etc.

Day 2

- Pre-processing.
- Geometry: Importing CAD files, The work plan.
- The creation, modification and use; curves, surfaces and solids.
- Additional operations on geometry.

- Cleaning, modification and deletion of geometries in surface and volume.
- Materials & properties: Definition, types, application, modification and display.

Day 3

- Pre-processing (continued)
- Meshing: General information on element types.
- Geometric meshes; tetrahedral and hexahedral meshes.
- Surface and line meshes linear mesh.
- Non-geometric meshing and specific elements.
- Model verification: Quality of the elements, normals, edges & free surfaces, as well as free surfaces, as well as coincident nodes & elements and measurement tools.
- Loading & boundary conditions:
- Definition, types, application, modification and display.
- Contacts: Contact elements: types/regions/properties. Creating and matching of contacts (connectors).
- Non-linearity in contacts.

Day 4

- Analysis
- Theory of Nx Nastran, dataset and Nx Nastran files, types of analysis, multiple loading cases of multiple loadings, parameters and an example of linear static analysis.
- Post-processing
- Overview of the tools: Postprocessing
- Toolbox, deformed, contour, cuts, cut scale management, data table, graphical exports graphical exports etc.

WELCOME TO PLM RESOURCES SARL

CONTACT US



ADDRESS: ALT FECHENHEIM 78A
60386 FRANKFURT AM MAIN
PHONE: (+49)(0)1721648692
EMAIL: INFO@ALLPLM.COM WEB: WWW.ALLPLM.COM



ADDRESS: 24 MOHAMED ABDOU STREET,
90000 TANGIER, MOROCCO
PHONE: (+212)0539936354
EMAIL: PLMMAROC@ALLPLM.COM



ADDRESS: 126, IBN KHLADOUN STREET
7000, BIZERTE, TUNIS
PHONE: (+216)72422504
FAX: (+216)72422298
EMAIL: INFO@ALLPLM.COM

MEET THE TEAM

OUR EXPERTS



ABDELKADER BELHI

Diplôme d'ingénieur en génie mécanique de l'ESIM Tunisie avec un DEA de l'INSA de Lyon en 1988. Option CAO mécanique. Il cumule plus de 30 ans d'expérience dans le monde industriel en Europe orienté CAO, FAO, IAO et PLM. Il gère le partenariat de PLM Ressources avec Siemens digital industries Software (NX, Teamcenter, Simcenter, Tecnomatix, Solid Edge).



SABRI BOUSSAMI

Diplôme d'ingénieur en génie industriel de l'école nationale d'ingénieurs de Bizerte Tunisie en 2018. Ayant une expérience confirmée dans la formation et le conseil dans NX, Teamcenter PLM et teamcenter visualisation. Sa dernière livraison réussie a été chez Capgemini autour de PLM Teamcenter et Teamcenter visualisation .



WADIA SAIDI

Lauriat de la promotion ingénieur en génie industrielle de l'ENIB Tunisie en 2022. Il a assuré des formations académiques sur Tecnomatix et Sim centre Starccm+ telles que la formation d'ingénieur de la Société Algérienne Gaz et électricité pour simuler le comportement d'un avion militaire atterrissant à côté d'une usine de gaz. Il pilote plusieurs missions de consulting au profit des sociétés nationales et internationales. .