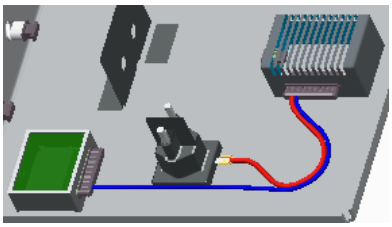
PTC university

Cabling using Creo Parametric 2.0

Overview

Course Code	TRN-3909–T
Course Length	3 Days



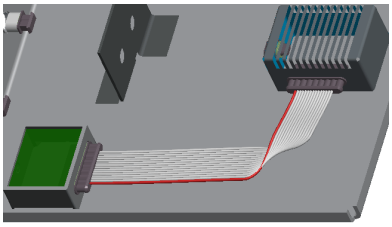
In this course, you will learn how to create 3-D electrical harnesses using Creo Parametric 2.0. This includes using Creo Schematics to pass schematic diagram information into the 3-D harness designs created within Creo Parametric 2.0. You will learn how to route electrical harnesses both with and without schematic diagram information, create flattened harnesses for manufacturing, and document harness designs by creating flattened harness drawings that include customized BOM tables and wire list information.

A significant portion of the course is devoted to a cabling design project, during which you will create a full wiring harness with minimal “picks and clicks” to solidify techniques learned previously in the course.

After successfully completing the course, you will be able to create 3-D electrical harnesses and associated manufacturing deliverables using Creo Parametric 2.0. Optionally, you may wish to attend the Introduction to Creo Schematics course. This will enable a full understanding of the schematic design process used to provide schematic data for the creation of electrical harness assemblies in Creo Parametric 2.0.

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

Course Objectives



- Learn the basic Creo Parametric cabling process
- Create harness assembly structures
- Set up for cabling
- Route wires and cables
- Modify wire routings
- Route and utilize networks
- Establish logical references
- Create harness components and cosmetics
- Create flat harness

- Document harness designs
- Comprehensive design project

Prerequisites

- Introduction to Creo Parametric 2.0 or equivalent experience
- Introduction to Creo Schematics 2.0 (optional)

Audience

- This course is intended for engineers involved in the 3-D routing and documenting of electrical wiring and cabling harnesses. People in related roles will also benefit from taking this course.

Agenda

Day 1

Module	1	Introduction to the Creo Basic Cabling Process
Module	2	Creating Harness Assembly Structures
Module	3	Setting Up for Cabling
Module	4	Routing Wires and Cables
Module	5	Modifying Wire Routings

Day 2

Module	6	Routing and Utilizing Networks
Module	7	Establishing Logical References
Module	8	Routing Wires and Cables using Logical Data
Module	9	Creating Harness Components and Cosmetics
Module	10	Creating Flat Harnesses

Day 3

Module	11	Documenting Harness Designs
Module	12	Project (Creo Schematics-Based)
Module	13	Project (Manual Routing)

Course Content

Module 1. Introduction to the Creo Basic Cabling Process

i. Step 1: Assembly and Cabling Setup
ii. Step 2: Routing Wires and Cables
iii. Step 3: Flattening the Harness
iv. Step 4: Creating the Harness Drawing

Knowledge Check Questions

Module 2. Creating Harness Assembly Structures

i. Understanding Cabling Assembly Structure
ii. Understanding Electrical Assembly Structure: Sub-Assembly
iii. Understanding Electrical Assembly Structure: No Sub-Assembly
iv. Understanding Electrical Assembly Structure: Sub-Assemblies at Top Level
v. Utilizing Simplified Representations for Cabling
vi. Creating Cabling Assembly Structures
vii. Sharing Routing Geometry using Copy Geometry
viii. Sharing Routing Geometry using Shrinkwrap
ix. Creating and Configuring Connectors
x. Assembling Connectors

Knowledge Check Questions

Module 3. Setting Up for Cabling

i. Understanding the Cabling Interface
ii. Creating a Harness Part
iii. Creating a Wire Color Appearance File
iv. Manually Designating Connector and Entry Ports
v. Creating Wire Spools
vi. Creating Cable Spools
vii. Creating Ribbon Cable Spools

Knowledge Check Questions

Module 4. Routing Wires and Cables

i. Routing Wires using Simple Route
ii. Inserting and Editing Wire Locations
iii. Creating Wire Locations from References
iv. Routing Wires using Follow Cable
v. Rerouting Wires
vi. Routing Cables
vii. Routing Ribbon Cables

Knowledge Check Questions

Module 5. Modifying Wire Routings

i. Deleting Wires and Segments

ii. Editing Location Properties
iii. Modifying Wire Packing
iv. Modifying Routing Dimensions
v. Modifying Wire Lengths
vi. Utilizing Information Tools

Knowledge Check Questions

Module 6. Routing and Utilizing Networks

i. Creating Networks
ii. Checking Networks
iii. Routing using Networks
iv. Modifying Networks While Routing
v. Sharing and Connecting Networks

Knowledge Check Questions

Module 7. Establishing Logical References

i. Logical References Overview
ii. Investigating Creo Schematics Diagrams
iii. Exporting Data from Creo Schematics
iv. Importing Creo Schematics Data Into Creo Parametric
v. Autodesignating Components
vi. Viewing Designation Information

Knowledge Check Questions

Module 8. Routing Wires and Cables using Logical Data

i. Routing with Logical Data
ii. Routing with Logical Data and Networks
iii. Viewing Routing Information
iv. Updating Creo Schematics Designs
v. Updating Creo Parametric with New Creo Schematics Data

Knowledge Check Questions

Module 9. Creating Harness Components and Cosmetics

i. Creating Splices with Logical Data
ii. Creating Splices Manually
iii. Creating Sheath Spools
iv. Creating Bundles
v. Creating Cabling Cosmetics
vi. Creating Custom Components

Knowledge Check Questions

Module 10. Creating Flat Harnesses

i. Creating a Flat Harness Model
ii. Using Manual Fan

iii. Using Auto Fan
iv. Modifying Flattened Segments
v. Assembling Harness Components
vi. Analyzing Harness Component Operations
vii. Viewing Harness Information
viii. Closing Loops
ix. Investigating Additional Flatten Features

Knowledge Check Questions

Module 11. Documenting Harness Designs

i. Creating Cabling Assembly Views
ii. Creating Harness Views
iii. Creating Harness Report Tables
iv. Placing Harness BOM Tables
v. Placing Connector Pinout Tables
vi. Placing Spool BOM Tables
vii. Placing Harness From and To Tables
viii. Showing Cabling Detail Items

Knowledge Check Questions

Module 12. Project (Creo Schematics-Based)

i. The Electrical Cabinet
ii. Set Up for Cabling
iii. Routing Wires and Cables
iv. Modifying Wires and Cable Routing
v. Flattening the Harness
vi. Creating a Harness Drawing

Module 13. Project (Manual Routing)

i. The Electrical Cabinet
ii. Set Up for Cabling
iii. Routing Wires and Cables
iv. Modifying Wires and Cable Routing
v. Flattening the Harness
vi. Creating a Harness Drawing