

## Cabling using Creo Parametric 3.0

### Overview

---

Course Code TRN-4515-T

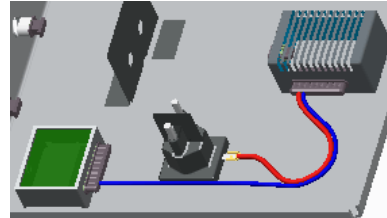
Course Length 3 Days

In this course, you will learn how to create 3-D electrical harnesses using Creo Parametric 3.0. This includes using Creo Schematics to pass schematic diagram information into the 3-D harness designs created within Creo Parametric 3.0. 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 3.0. 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 3.0.

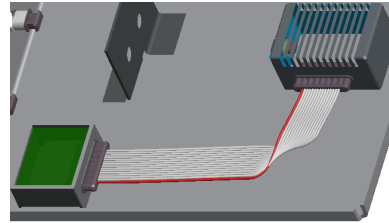
At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. At the end of the course, you will complete a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



## Course Objectives

---

- Understand 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 a flat harness
- Document harness designs
- Navigate through a comprehensive design project



## Prerequisites

---

- Introduction to Creo Parametric 3.0 or equivalent experience
- Introduction to Creo Schematics 3.0 (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 Parametric 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 Parametric 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. Designating Connectors using Entry Port Parameters
- vi. Designate Components On-the-Fly
- vii. Creating Wire Spools
- viii. Creating Cable Spools
- ix. 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
-