



## **Pro/ENGINEER Mechanical Simulation using Pro/ENGINEER Wildfire 3.0**

Course Code TRN-1833-T

Course Length 5 Days

### **Overview**

This course is designed for new users who want to test, validate, and optimize product designs with Pro/ENGINEER Wildfire 3.0's Mechanical module. Mechanical enables you to simulate structural and thermal loads on product designs. You will also complete comprehensive, hands-on lab exercises that simulate realistic analysis and design optimization activities. Advanced topics such as combined mechanical and thermal analysis techniques are also covered.

After completing the course, you will be able to run engineering analyses and optimizations on your product design models.

Pro/FICIENCY assessments will be provided in order for you to assess your understanding of the course materials. The assessment results will also identify the class topics that require further review. At the end of the class, you will either take an assessment via your PTC University account, or your instructor will provide training on how to do this after the class.

### **Prerequisites**

3 months of Pro/ENGINEER Wildfire 3.0 experience or  
CADTrain Pro/ENGINEER Wildfire 3.0 Mechanical Primer

### **Audience**

This course is intended for design engineers and mechanical designers. People in related roles will also benefit from taking this course.

### **Topics**

- Simulating Mechanical and Thermal Loads in Machine Parts
- Introduction to the Mechanical Simulation Process
- Modeling Geometry, Material Properties, Loads, and Constraints
- Running Static, Modal, and Thermal Analyses
- Reviewing and Interpreting Results
- Assigning Design Variables

- Running Design Sensitivity and Optimization Analyses
- Best Practices for Simulating Mechanical and Thermal Loads in Machine Parts

## **Agenda**

### **Day 1**

Module 1 Introduction to Structural and Thermal Simulation with Pro/ENGINEER Wildfire 3.0

Module 2 Optimizing Structural Designs using Pro/ENGINEER Mechanica 3.0

Module 3 Simplifying Designs Using Idealizations

### **Day 2**

Module 4 Optimizing Models for Analysis

Module 5 Assigning Properties to Models

Module 6 Applying Constraints to Models

Module 7 Simulating Applied Loads on Models

### **Day 3**

Module 8 Creating and Running Analyses

Module 9 Comparing MPA and SPA Results

Module 10 Evaluating Analysis Results

### **Day 4**

Module 11 Running Sensitivity Studies

Module 12 Running Optimization Studies

Module 13 Applying Mechanica Analysis Concepts

### **Day 5**

Module 13 Applying Mechanica Analysis Concepts (Cont.d)

Module 14 Projects

