Pro/ENGINEER Mechanica Simulation using Pro/ENGINEER Wildfire 4.0

Course Code TRN-2167-T
Course Length 5 Days

Overview

This course is designed for new users who want to test, validate, and optimize product designs with the Pro/ENGINEER Wildfire 4.0 Mechanica module. Mechanica enables you to simulate structural and thermal loads on product designs.

In this course, you will complete comprehensive, hands-on lab exercises that simulate realistic analysis and design optimization activities. You will also learn about advanced topics such as dynamic analyses, combined mechanical and thermal analyses, and Fatigue Studies. A module on Mechanica Best Practices is also included to help users avoid some of the more common problems that new users encounter.

After completing the course, you will be able to run engineering analyses and optimizations on your product design models. At the end of each module, you will find a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.

After completing the course you will be well prepared to complete Pro/MECHANICA analyses on product design projects in Pro/ENGINEER Wildfire 4.0.

Prerequisites

Three months of Pro/ENGINEER Wildfire 4.0 experience

Audience

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

Course Objectives

- Learning the basic Pro/MECHANICA Analysis Process
- Theory and Mechanica Model Topics
- Exploring Results
- Materials and Material Properties

- Understanding and Using Pro/MECHANICA idealizations
- Understanding and Using Structural Loads
- Understanding and Using Structural Constraints
- Running Structural Analyses
- Running Thermal Analyses
- Convergence
- Analyzing Assemblies with Pro/MECHANICA
- Completing Design and Sensitivity Studies
- Running Optimization Studies
- Advanced Topics
- Analysis Best Practices
- Analysis Projects

Agenda

Day 1

Module 1 The Pro/ENGINEER Mechanica 4.0 Process
Module 2 Theory and Mechanica Model Topics
Module 3 Results
Module 4 Materials and Material Properties

Day 2

Module 5 Idealizations
Module 6 Structural Loads
Module 7 Structural Constraints
Module 8 Structural Analysis I

Day 3

Module 9 Structural Analysis II
Module 10 Thermal Analysis
Module 11 Convergence
Module 12 Analyzing Assemblies I

Day 4

Module 13 Analyzing Assemblies II
Module 14 Design and Sensitivity Studies
Module 15 Optimization Studies
Module 16 Dynamic Analyses

Day 5

Module 17 Advanced Topics
Module 18 Analysis Best Practices
Module 19 Projects