Behavioral Modeling using Pro/ENGINEER Wildfire 4.0

Overview

Course Code	TRN-2180-T
Course Length	1Day

This course is designed for experienced users who want to add additional features that enable you to meet or exceed the design specifications of your products. In this course, you will focus on learning advanced analysis skills unrelated to structural or thermal analysis in this comprehensive, hands-on course. You will learn how to analyze your models and create analysis features that can enforce your design intent. You will also learn how to create sensitivity and feasibility studies that aid you in determining how to reach your design goals. Furthermore, you learn how to create optimization design studies that enable you to configure the dimensions and parameters that Pro/ENGINEER can change in order to meet your design specifications. After completing this course, you will be prepared to work on critical component designs using Pro/ENGINEER Wildfire Behavioral Modeling. 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.
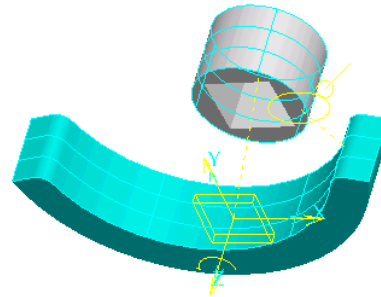
Course Objectives

- Applying the Behavioral Modeling process and concepts to your designs
- Creating measurement analysis features
- Creating relation, motion, Mechanica, and MS Excel analysis features
- Creating user-defined analysis features
- Conducting sensitivity analyses
- Conducting feasibility and optimization studies
- Design Project
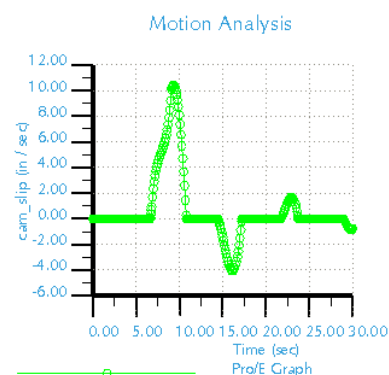
Prerequisites

- Introduction to Pro/ENGINEER Wildfire 3.0 or equivalent experience.
- Additionally, experience with MS Excel, Mechanica, Mechanism Design, and Mechanism Dynamics would be useful but not required.

Audience

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

Agenda

Day 1

Module	1	Introduction to the Behavioral Modeling Process
Module	2	Creating Measurement Features on Pro/ENGINEER Models
Module	3	Creating Model Property Features on Pro/ENGINEER Models
Module	4	Creating Analysis Features on Pro/ENGINEER Models
Module	5	Creating User-Defined Analysis Features on Pro/ENGINEER Models
Module	6	Conducting Design Studies and Optimizing Models
Module	7	Project

Course Content

Module 1. Introduction to the Behavioral Modeling Process
    i. Behavioral Modeling Process
    ii. Identifying BMX Analysis Types
    iii. Identifying the Differences Between Pro/ENGINEER Analyses
Knowledge Check Questions

Module 2. Creating Measurement Features on Pro/ENGINEER Models
    i. Comparing Pro/ENGINEER Measurement Analyses
    ii. Measuring Distance
    iii. Measuring Length
    iv. Measuring Angles
    v. Measuring Area
    vi. Measuring Diameter
Knowledge Check Questions

Module 3. Creating Model Property Features on Pro/ENGINEER Models
    i. Comparing Model Property Analyses
    ii. Measuring Mass Properties
    iii. Measuring X-Section Mass Properties
    iv. Measuring One-Sided Volume
    v. Measuring Pairs Clearance
Knowledge Check Questions

Module 4. Creating Analysis Features on Pro/ENGINEER Models
    i. Comparing Analysis Features
    ii. Creating a Relation Analysis Feature
    iii. Creating a Motion Analysis Feature
    iv. Creating a Mechanica Analysis Feature
    v. Creating an MS Excel Analysis Feature
    vi. Creating an External Analysis Feature
Knowledge Check Questions

Module 5. Creating User-Defined Analysis Features on Pro/ENGINEER Models
    i. Introduction to User-Defined Analysis Features
    ii. Creating Field Points
    iii. Creating a Construction Group
    iv. Creating User-Defined Analysis Features
Knowledge Check Questions

Module 6. Conducting Design Studies and Optimizing Models
    i. Comparing Design Studies
    ii. Translating Design Specifications
    iii. Performing Sensitivity Analysis

iv. Performing Feasibility Design Studies

v. Performing Optimization Design Studies

Knowledge Check Questions

Module 7. Project