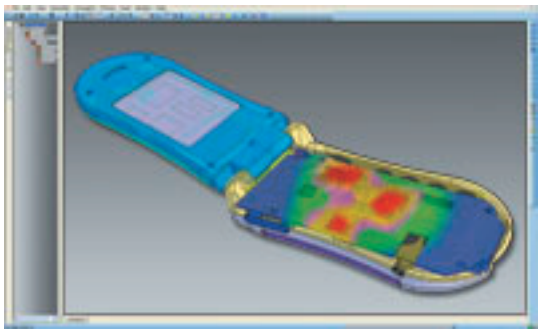
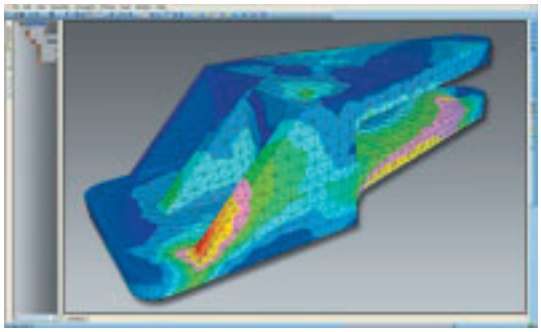
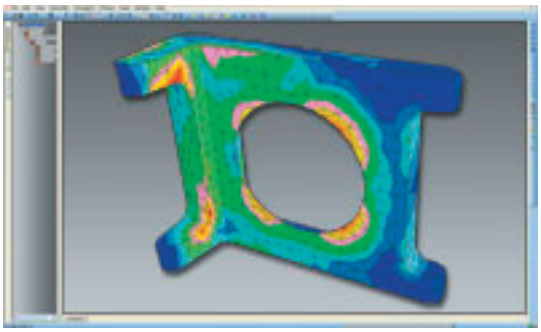
SO101

# MSC.SimOffice







## Course Description

MSC.SimOffice is an easy to use Finite Element Analysis (FEA) product that does not overload the user interface with too many options that are rarely used in the most common analyses. SimOffice allows you to perform a Linear, Non-linear, Normal modes, Buckling, Thermal, Frequency or Transient Analysis using the power and technology of MD Nastran. SimOffice is designed to help you get to work quickly, with a short learning curve. Its user interface features menus that guide you through the most common tasks of creating and solving an analysis problem. The emphasis of this seminar is on using the program to solve engineering problems. The capabilities of the program, including typical applications, are covered in detail. Hands-on workshops and example problems reinforce the lecture material.

By the end of the course, attendees should have a basic understanding of how to perform each of the above mentioned analyses using MSC.SimOffice.

## Prerequisites:

- Prior knowledge of FEA is recommended.

## Topics:

- Introduction
- Overview of MSC.SimOffice
  - Course objectives
  - SimOffice features
  - Benefits
- Getting Started
  - Starting SimOffice
  - The User Interface Layout
  - The SimOffice Button
  - Tabs
  - Main Menu Continued
  - Treeview
  - Right Click Menus
  - Prompts
- Case Study: Linear Static Analysis of a Aircraft Landing Gear Fitting
  - Design Overview
  - Properties
  - Open the Transmit File
  - Change View and Render Style
  - Apply Constraints
  - Add Total Load
  - Create Physical Properties
  - Mesh the Solid
  - Run the Analysis
  - Evaluate the Results
  - Workshop 1, “Bracket Stress Analysis”
- Geometric Modeling
  - Geometry
  - Geometry Building Blocks
  - TopologicalStructures
  - Steps to Create a Trimmed Surface
  - Steps to Create a B-rep Solid
  - Workshop 2, “Lug Geometry Construction”
  - Condition
  - Create the Property
  - Mesh the Solid
  - The Complete Model
  - Run the Analysis
  - Evaluate Results
  - Workshop 7, “Thermal Analysis of a Heat Sink”

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## Topics:

- Case Study: Frequency Response of a Satellite Dish
  - Problem Description
  - Apply Constraints
  - Create Properties
  - Create the Mesh
  - Run the Analysis
  - Normal Modes Results
  - Frequency Response of a Satellite Dish
  - Add the Frequency Response Study
  - Add the Acceleration Load
  - Run the Analysis
  - Evaluate Results
  - Export to Excel Spreadsheet
  - Workshop 8, “Frequency Response of a Modified Satellite Dish”
- Case Study: Transient Response of a Satellite Dish
  - Problem Description
  - Add the Transient Response Study
  - Add the Load
  - Run the Analysis
  - Evaluate Results
  - Workshop 9, “Transient Response of a Satellite Dish”
- Case Study: Pipe Bend
  - Design Overview
  - Properties
  - Create a Database File
  - Create Construction Points
  - Create the Form (Arch)
  - Create the Work Piece
  - Create the Sleeve
  - Create Element Properties
  - Create the Mesh
  - Apply Loads and Constraints
  - Contact for Work Piece (Pipe)
  - Contact for Rigid Form
  - Load the Rigid Sleeve
  - The Complete Model
  - Run the Analysis
  - Evaluate Results
  - Workshop 12, “Contact Sheet”
- Programming SimOffice
  - Case Study: Programming an Excel Spreadsheet
  - Start SimOffice
  - Create the Model
  - Run the Analysis
  - Save the Macro
  - Open a New Excel Spreadsheet
  - Macro Spreadsheet
  - Add a Button Control
  - Add Properties for Button

For more information on this course please contact Riekert Leibbrandt 0861237837 or email r.leibbrandt@esteq.com

## Topics:

- Programming SimOffice
  - Case Study: Programming an Excel Spreadsheet
  - Start SimOffice
  - Create the Model
  - Run the Analysis
  - Save the Macro
  - Open a New Excel Spreadsheet
  - Macro Spreadsheet
  - Add a Button Control
  - Add Properties for Button
  - VBA Interface
  - Import the file “Study.bas”
  - Add the Subroutine to the Module
  - Create Variables
  - Assign Spreadsheet Values
  - Final Program
  - Test the VB Code
  - Workshop 10, “Programming Points using Visual Basic and Excel”
- Installation, Licensing & Support
  - Installation
  - Installation Wizard
  - Testing
- Introduction to the Finite Element Method
- Dynamics Fundamentals