

## **Day 1: Introduction to ANSYS Design Modeler**

**Time: 9.00am – 5.00pm**

1. Introduction to Workbench and Design Modeler Overview (~30 min)

2. Design Modeler GUI (~ 30min)

Workshop: GUI Navigation (~15 min)

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Break (~10 min)

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3. Sketching Mode (~45 min)

Workshop: Sketching & 3D modeling (~30 min)

4. Basic 3D Geometry (~45 min)

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Lunch (~45 min)

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Basic 3D Geometry (continued)

Workshop: Catalytic Converter (~40 min)

5. Advanced 3D Geometry (~45 min)

Workshop: Enclosure, Pattern, Midsurfacing (~30 min)

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Break (~10 min)

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6. Concept Modeling (~20 min)

Workshop 7: Beams and shell modeling (~25 min)

7. Parametric Modeling (~20 min)

Workshop 7: Pulley Model (~25 min)

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## Day 2: Introduction to ANSYS Simulation ( Part 1)

**Time: 9.00am – 5.00pm**

1. Introduction (~15 min)
  2. Simulation Basics (~60 min)
    - GUI
    - Simulation Wizard
    - Basic Procedure
    - Instructor Guided demo (~30 min)
    - Workshop: Simulation Basics (~30 min)
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Break (~15 min)

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3. General Preprocessing (~45 min)
    - Geometry Definition
    - Contact Definition
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Lunch (~60 min)

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3. General Preprocessing Continued... (~50 min)
    - Meshing Controls
    - Named Selections
    - Coordinate systems
    - Workshop: Mesh control (~30 min)
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Break (~15 min)

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4. Structural Static Analysis (~ 50 min)
    - Geometry & Elements
    - Contact and Types of Supported assembly
    - Loads and Supports
    - Solving Models
    - Result and Post-processing
    - Workshop: Linear Structural Analysis (~30 min)
    - Workshop: 2D Structural Analysis (~ 30 min)
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## Day 3: Introduction to ANSYS Simulation (Part 2)

**Time: 9.00am – 5.00pm**

### 5. Modal Analysis (~30 min)

Free Vibration analysis

Free Vibration with Pre-Stress analysis

**Workshop: Free Vibration Analysis (~20 min)**

**Workshop: Pre-stressed Modal Analysis (~20 min)**

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Break (~15 min)

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### 6. Thermal Analysis (~45 min)

Geometry

Contact

Heat Loads, Solution Options

Result Post-processing

**Workshop: Steady State Thermal Analysis (~30 min)**

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Lunch (~60 min)

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### 7. Linear Buckling Analysis (~20 min)

**Workshop: Linear buckling (~20 min)**

### 8. Result Post-processing (~35 min)

Viewing, scoping, exporting results

Coordinate system and Directional Results

Solution Combination, Stress Singularity, Convergence

**Workshop: Advanced Result Post-processing (~30 min)**

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Break (~15 min)

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### 9. CAD and Parameters (~30 min)

CAD Interoperability

DesignXplorer Parameter Manager

**Workshop: DesignXplorer Parameter Manager (~20 min)**

### 10. APPENDIX (~60 min)

Shape Optimization

Fatigue Module

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