



Pioneering engineering software systems, support & services.

Training Course Content

ANSA for Modeling

Fee: \$600

Prerequisites:

- Must have a basic knowledge of Finite Elements.
- No prior pre- and post-processing experience needed.

Following are the primary topics covered in the ANSA for Modeling training:

DAY 1:

- GUI Introduction
 - GUI Layout
 - View Manipulation
- CAD Translation
 - Native CAD formats
 - Neutral CAD formats
- Geometry Healing
 - Automatic
 - Manual
- Middle Surface Extraction
 - Stamped Parts
 - Casted/Plastic Parts
- The ANSA Part Manager
- Surface Meshing
 - Algorithms
 - Seeding Controls
 - De-featuring
 - Quality Controls
 - Reconstruct/Reshape

DAY 2:

- Batch Meshing
- Handling Non-Geometry Mesh
- Working with FE & Geometry
- Depenetration
- Volume Meshing
 - Structural Tetra
 - Sweep/Extrude
 - Mapping
- Assembly
 - Connections Manager
 - Creation of Connections
- Model Management - Intro to pre-processing decks

META Basics

Fee: \$300

Prerequisites:

- Must have a basic knowledge of Finite Elements.
- No prior pre- and post-processing experience needed.

Following are the primary topics covered in the META Basics training:

DAY 1:

- Introduction
- Load Model and Handle Geometry
- Read and View Results
 - Load Result File
 - Animation
 - Cut Planes
 - Fringe Plots and Range
 - Append Results
- Queries
 - Identification - Advanced Filter
 - Statistics
 - Annotations
 - Part Manager
- 2D Plot
- Model Comparison
 - Import Second Model
 - Overlay Session
 - Overlay Project
- Exporting Files
- Reporting
 - Model Report
 - Report Composer
 - Spreadsheet Editor

ANSA for CFD

Fee: \$600

Prerequisites:

- Attendees must have a basic knowledge of CFD.
- No prior Preprocessing experience needed.

Following are the primary topics covered in the ANSA for CFD training:

DAY 1:

Session 1:

- GUI customization
- View management
- Solver Outputs / Inputs
- Cad translation

Session 2:

- Model Management
- CAD Cleanup

DAY 2:

Session 1:

- Cad Cleanup continued
- Cad Sealing
- Surface Meshing

Session 2:

- Proximity / Intersection Adjustments
- Wrapping
- Layers, Solid elements
- Batch Meshing from shells to solids

META for CFD

Fee: \$300

Prerequisites:

- Attendees should have prior knowledge of Computational Fluid Dynamics

Following are the primary topics covered in the META for CFD training:

DAY 1:

- Introduction
 - Concepts
 - META GUI and Layout
 - CFD results import
 - Model handling
- Visualization
 - Scalar and Vector results
 - Cut-planes, Stream lines, Iso-surfaces
 - Custom results
 - 2D plotting
 - Annotations
 - Image and Video recording
- Advanced Tools
 - Views Management
 - Statistics Tool
 - CFDPost Toolbar
 - Report Composer
 - Multi-model Comparison
 - Introduction to Automation

Attendees are encouraged to bring sample results files for a discussion on customized post-processing.

ANSA & META for Crash & Safety

Fee: \$900

Prerequisites:

- Must have a basic knowledge of Finite Elements.
- No prior pre- and post-processing experience needed.

Following are the primary topics covered in the ANSA & META for Crash & Safety training:

DAY 1:

- "What-where"- Interface
- Model Management in ANSA
- Materials Handling
- Sets and Contacts
- Includes Management

DAY 2:

- Assembly Tools
- Loadcase set-up/solution controls
- Model Checks
- Reporting
- Kinematic Mechanisms Handling
- Dummies Handling
- Seatbelt tool
- Includes Configurations
- Task Manager Basics
- Utilities and Geometry Modification Techniques

DAY 3:

- Load Models & Results
- Display Results & Animations
- 2D Plots
- Max Intrusion
- Undeform State
- Identify and Query
- Section Forces
- Video Synchronization
- IIHS Toolbar
- Pedestrian Safety
- FMVSS_201U

NVH Console

Fee: \$900

- Introduction to NVH Console
 - Overall GUI, plugins solution (refresh issue)
 - Working directory, settings
- Open Assembly (XML) & ANSA Database
 - Difference between using ANSA database & XML
 - Resizing boxes, align, zoom, rotate
 - Highlight, show only
- Creating Components
 - Conception of owners
 - General components
 - FS group
- Create the demo model (all components)
 - Rigid bodies
 - Bean stiffeners
 - Creating Connectors
 - Manual
 - Auto
 - XML
 - Different type of connectors
 - UJOINT
 - CBUSH
 - Rigid
 - MPC
- Exercise: Connectors
 - Local Coordinate Systems
 - All 4 methods
 - Load case Manager
 - Configurations, edit modal model
 - Exclusive groups (create exclusive groups)
 - Changing Representations
 - Modal, FRF, ASCII
 - Switch between different representations
 - Output XML, sharing by ANSA database
 - Updating Console Model (counter measure development)
 - New bulk data file
 - Running only few components ("used")
 - Load case setup
 - Simple loads, multi load creation
 - Participations
 - Energy responses
 - Running NASTRAN
 - System modes
 - System FRF
 - Standard Load cases
 - Job submission

ANSA for NVH

Fee: \$600

Prerequisites:

- Must have a basic knowledge of Finite Elements.
- No prior Preprocessing experience needed.

Following are the primary topics covered in the ANSA for NVH training:

DAY 1:

- Interface and Terminology
- Database Browser
- File Input
- CAD Translation
- Geometry Healing
- ANSA Part Manager
- Property and Material Lists
- Surface Meshing
- Batch Meshing
- Handling Legacy Mesh
- Middle Surface Extraction
- Volume Mesh
- Assembly Connections

DAY 2:

- Sets
- Grids and 1-D Elements
- Connectors
- Mass Trimming
- Includes Manager
- Cavity Meshing and Coupling
- Nastran Keywords
- Display Model
- Loads and Load Case Manager
- SOL200
- Model Validation
- File Output

The next ANSA topics will be covered as time permits.

- Damping Patches
- Exterior Acoustic for ACTRAN
- Strategy for converting LS-Dyna to Nastran

META for NVH

Fee: \$300

Prerequisites:

- Must have a basic knowledge of Finite Elements.

Following are the primary topics covered in the META for NVH training:

DAY 1:

- Introduction
- Load Model and Handle Geometry
- Read and View Results
- Queries
- 2D Plot
- Model Comparison
- Export Files
- Reporting
- Data Transformation
- Modal Correlation (MAC) tool
- Modal Response
- Response on Fluid Nodes
- FRF Assembly
- Identification of Global-Local Modes
- Strain Energy Bar Chart

ANSA for Structures & Durability

Fee: \$600

Prerequisites:

- Must have a basic knowledge of Finite Elements.
- No prior Preprocessing experience needed.

Following are the primary topics covered in the ANSA for Structures & Durability training:

DAY 1:

- Interface
- Model Management
- Solver files I/O
- Materials and Properties Handling
- Laminates
- CAD Translation
- Clean-up Techniques
- Middle surface Extraction
- Batch Mesh - Specific meshing requirements

DAY 2:

- Assembly Tools
- Sets, Contacts and Pre-tensions
- Definition of boundary and loads & STEP Manager
- Transformations
- Model Checks
- Delete Unused Data
- Reporting

The next ANSA topics will be covered as time permits.

- Includes Management & Configurations
- Control of Numbering Schemes
- Kinematic Mechanisms Handling & Positioning
- Task Manager Basics
- Keeping the model up-to-date
- Utilities and geometry modifications techniques
- Introduction to Morphing

META for Structures & Durability

Fee: \$300

Prerequisites:

- Must have a basic knowledge of Finite Elements.

Following are the primary topics covered in the META for Structures & Durability training:

DAY 1:

- Introduction
 - About META
 - META Launcher
 - Screen Layout
- Load Model and Handle Geometry
 - Read Geometry
 - Views
 - Set Visible Entities
 - Focusing on Entities
 - Drawing Styles
- Read and View Results
 - Load Results File
 - Animation
 - Cut Planes
 - Fringe (contour) Plots and Range
 - Append Results
- Queries
 - Identification & Advanced Filter
 - Statistics
 - Annotations
 - Part Manager
- 2D Plot
 - Create Curves
- Model Comparison
 - Import Second Model
 - Overlay Session
 - Overlay Project
- Export Files
 - Save Images
 - Save Videos
 - Save Data
 - Save Curves
- Reporting
 - Model Report
 - Report Composer
 - Spreadsheet editor

ANSA for Morphing & Optimization

Fee: \$300

Prerequisites:

- Attendees must have a basic knowledge of Finite Elements.
- No prior Preprocessing experience needed.

Following are the primary topics covered in the ANSA for Morphing & Optimization training:

DAY 1:

- Intro to ANSA morphing
- Basic concept and entities
- Box morphing
 - Defining and modifying morph boxes
 - Free movement morphing -mv free, slide
 - Controlled morphing- translate, extend, offset
 - Cylindrical box morphing
 - 2D box morphing
 - 1D morphing
 - Geometry morphing
- Direct morphing
 - Direct Fit Morphing (DFM)
 - 4 side curve fit
 - Multi curve fit
 - Beads
 - Strakes/features optimization
 - Creating 2D/3D ribs and bulkheads
 - Creating flanged openings
- Sensitivity based morphing
 - Morphing based on OPEN FOAM sensitivities data
 - Smoothing of sensitivity data
 - Mapping and visualization of sensitivity data on the models
- Parametric morphing
 - Defining parameters
 - Concept of ANSA morphing with optimizer in batch mode

ANSA for Morphing & Optimization Advanced

Fee: \$300

Prerequisites:

- Attendees must have a basic knowledge of Finite Elements.
- Attendees must have prior ANSA Morphing experience.

Following are the primary topics covered in the ANSA for Morphing & Optimization training:

DAY 2:

- Optimization setup with ANSA
- Setting morph, gage, and materials design variables in optimization task
- Defining parameters using DV from Entity option
- Weld optimization
- Discrete and continuous parameters setup
- Additional tasks setup for automated optimization
 - Visibility control for selecting appropriate morphing regions
 - Adding session commands to optimization task
 - Adding automated element quality checks, fixes, and reports
 - Outputting mass, volume, etc. info from the model in batch mode
- Adding user defined scripts to handle specific morphing and pre-processing requirements
- Simulating the shape changes and recording videos
- Final Testing: Running optimization task for the upper and lower bounds of the design space
- Running DOE:
 - Choosing DOE algorithms and generating DOE matrix
 - Defining solver and post processor setup for DOE
- Setting up ANSA node in the workflow of the commercial optimization software
- Use of "Morphing Library" advanced module
- Topology optimization setup

Scripting for ANSA

Fee: \$600

Prerequisites:

- Basic knowledge of Finite Elements.
- Basic knowledge of the ANSA Interface.

Recommended:

- Conceptual knowledge of programming logic.
- Experience in using ANSA.

Following are the primary topics covered in the Scripting with ANSA training:

DAY 1:

- Python Intro
 - Basic Python Introduction and Practice
 - Data Types
 - Variables
 - Logic
 - Loop/Flow Control
 - Functions
 - ANSA Scripting Intro
 - Intro to ANSA Python
 - Keywords
 - Modules
 - Script Editor
 - Interacting with ANSA Entities

DAY 2:

- ANSA Scripting
 - Interacting with connections
 - Weld Realization
 - Connection Manager
 - Post-Realization Function Example
 - Batch-Meshing
 - Creating Sessions and Scenarios
 - DM Interactions
 - Batch Mode
 - Running Non-GUI Jobs
 - ANSA Customization
 - Custom GUI Building
 - Line Edits, Line Edit Paths
 - Combo Boxes
 - Buttons
 - Wizard Example
 - User Buttons and Plugins
 - Running Scripts and Packages
 - User Menus
 - Customization Options
 - Interface and TRANSL Automation

Scripting for META

Fee: \$300

Prerequisites:

- Basic knowledge of Finite Elements.
- Basic knowledge of the META Interface.
- Scripting with ANSA course

Recommended:

- Conceptual knowledge of programming logic.
- Experience in using META.

Following are the primary topics covered in the Scripting with META training:

DAY 1:

- META Scripting
 - META Intro
 - Sessions
 - Running and Parameterization of Session Files
 - Scripting
 - Modules
 - META Classes
 - Variables
 - Using Global META Variables
 - Report Example
 - Using Session Commands and Data Report APT with Report Composer
- META Customization
 - User Toolbar
 - Convert Report Example into a User Toolbar
 - Customization Options



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