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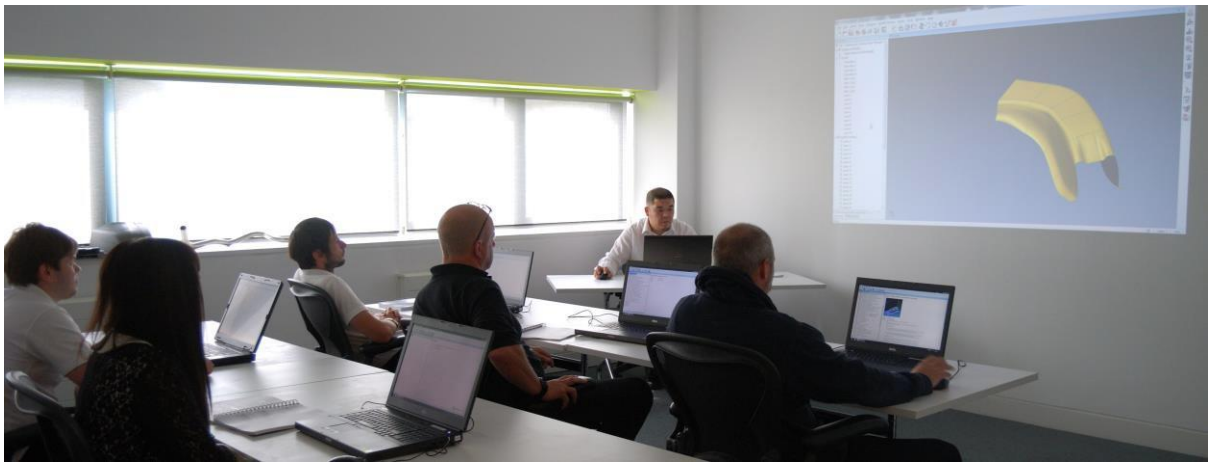
PolyWorks|Inspector™ Premium + PolyWorks|Modeler™ Premium Training Course



Introduction to PolyWorks

- Workspace Manager
- Basic Options
- File and Project Structures
- IMKey License Manager

Introduction to IMInspect

- User Interface
- Basic Options
- Visual Layout

Real-Time Quality Meshing

- Scanning Parameters
- Quality Metrics
- Unifying models using Targets and Best Fit

Basic Workflow

- Importing References & Data
- Basic Alignments
- Basic Colour Map Comparison
- Creating Report Tables
- Taking Snapshot
- Create Formatted Report

Units

- Importing objects with different units

Scaling

- Scaling models using “Units Conversion”

CAD Based-Clean-Up

- Quick removal of noise and over scans

Tolerances

- Applying tolerances to CAD surfaces

Feature Creation

- Creating Nominals from CAD or Polygonal models
- Creating Measured from Polygonal or Point Cloud models

Feature Extraction

- Setting up feature properties to extract the measured from the nominals

Geometry Controls

- Dimensional Controls
- Geometric Dimensioning & Tolerancing (GD&T) Controls
- Editing Annotations
- Templates

Feature Based Alignments and Alignment History

- Planes, Axes, Center Point (3-2-1)
- Center Points
- Perpendicular Planes
- Datum Reference Frame Alignment
- Using Alignment Groups and reverting back to previous alignments

Reference Targets Alignment

- Creating Surface and Feature Reference Targets

Data Colour Maps and Point Annotations

- Displaying the Deviation between the Data and Reference Objects, Feature Primitives or other Data
- Customizing the Colour map and Enhanced Colouring
- Picking points on model for error annotation readings

Cross-Sections

- Creating Standard, Offset and Section View Cross-Sections

Comparison Points and Virtual Surfaces

- Creating Comparison Points on Surfaces, Cross-Sections, Polylines, Trimmed Edges and Hemmed Edges
- Enabling and using Virtual Surfaces

Basic Measurements and Feature Based Measurements

- Picking on 3D or 2D points to measure between
- Measuring distances or angles between 2 features
- Measuring 2D Cross-Section Features

3D and 2D Calipers

- Creating Standard and Cross-Section Calipers
- Single Axis or Offset Axes (depth gauge)

Flush & Gap Gauges

- Measured between 2 models
- Alignment using Flush & Gap Gauges

Profile Gauges

- One or Two radii measurements

Volume Measurements

- Measuring Data or Plane or Data to Data

Coordinate Systems

- Creating and managing Coordinate Systems

Reporting

- Taking and editing Snapshots
- Creating Formatted Reports and using Report Editor

Automatic Updates

- Enabling/Disabling and its functionality
- Editing Measured Data Points

Multiple Piece Inspection

- Multiple inspections in one project
- Statistical Process Control (SPC)

Surface Data SPC and creating Deviation Models

- Deviation Colour Map of Multiple Data Models
- Creating Deviation Models as Point Clouds or Polygon Models

Offline Simulation & Sequencer

- How to create complete inspection programs offline with device or parts
- How to rearrange the sequence or measurements and further programming of inspection projects

PolyWorks | Viewer

- Free Project Viewer

Additional Airfoil Gauge Module

RPS 6 Point Nest Alignment

- Used to align Airfoil Blades

Airfoil Gauges

- Creating Airfoil gauges and Best Fit and Cross sections

Introduction to IMEdit

- User Interface, Basic Options and Typical Workflow

Importing Models

- Importing Polygonal and CAD models

Units

- Importing objects with different units

Scaling

- Scaling models using “Units Conversion”

Creating Primitives

- Creating Planes and Points Primitives

Alignment Techniques

- Manual Alignment
- Rotate Plane A to Plane
- Translate to Plane

Creating Features and Advanced Alignment Techniques using IMInspect Scanning and Probing

- Fitting and Probing Features
- Feature based Alignments

Model Topology and Watertightness

- Analysing Polygonal for Triangular & Vertices errors
- Analysing Polygonal model for holes

Optimising Polygonal Meshes

- Optimise Mesh
- Improve Equiangularity
- Subdivide Mesh
- Reduce Mesh

Hole Filling

- Automatically, Interactively, using Surfaces and Merging Models

Smoothing Meshes

- A tool that smooths Vertices along surfaces

Reconstructing Meshes

- A tool that deletes selected triangles and reconstructs them

Creating and Editing Curves

- Standard Curves
- Boundary Curves
- Feature Center Curves
- Fillet Tangent Curves
- Edge Curves

Boundary and Sharp Edge Reconstruction

- Reconstructing triangles by using Curves

Creating Fillets, extending boundaries and slicing models

- Creating Fillet rads
- Extruding boundary surface
- Slicing Models with Planes and Curves

Importing Objects from other Projects

- Importing objects such as Models, Features, Cross-Sections etc from other Projects such as IMInspect Projects etc

Creating Cross-Sections

- Create Cross-Sections by Anchoring 2 points or Numerically

Hole Cutting

- Using closed Curves or Features from IMInspect Projects

Offset Models

- Offset selected triangles in a selected direction with the option of keeping the original or even creating walls around the boundaries

Mirror Models

- Mirror selected triangles about a standard or created plane

Extracting Sketch Outlines

- Defining Sketch Planes and creating Sketch Outlines from either a Single Cross-Section, Multiple Cross-Sections or a Silhouette Edge

Measuring Draft Angles

- Measuring from 2 points and Inward vs Outward Draft Angles

Creating Sketch Entities

- Creating Lines, Circles, Arcs, Splines and Rectangles
- View Auto-Relations and Entity Deviations

Editing Sketch Entities

- Modifying entities numerically, adding relations, dragging entities, replacing entities, rebuilding entities and deleting entities

Adding Dimensions

- Linear Dimensions
- Angular Dimensions
- Radial Dimensions

Creating Curves Networks

- Creating a grid of curves to create typically 4 sided patches

Creating and Editing NURBS Surface Patches

- Creating smooth typically 4 sided surfaces
- Creating N-Sided Surface Patches
- Edit the Curves to modify and improve quality of NURBS patches

Fitting NURBS Surface Patches

- Fit the NURBS patches to the surface of the Polygonal model
- Loose and flexible fitting NURBS fit closer to the Polygonal model but may have lower quality surfaces
- Tight and stiff fitting NURBS have higher quality surfaces by may not fit as we well

Cutting Holes Through NURBS Models

- Importing Features from IMInspect
- Scanning and Probing project to cut holes

Planar and Symmetry Constraints

- NURBS patches and Curves can be projected and constrained to Planes for planar/symmetrical surfaces

CAD Reconstruction

- Creating NURBS Patches from Scan Data to reconstruct original CAD Models

Alternative Servicing Processes

- Measuring features to export into original 3D CAD Packages as surfaces to reverse engineer
- Breaking scans into smaller & simpler models
- Simplifying curve networks