INTRODUCTION TO POLYWORKS

☐ Workspace Manager
☐ Basic Options
☐ File and Project Structures
☐ PolyWorks License Manager

INTRODUCTION TO POLYWORKS| INSPECTOR SCANNING & PROBING

☐ User Interface
☐ Basic Options
☐ Visual Layout

REAL-TIME QUALITY MESHING

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

CREATING FEATURES AND ADVANCED ALIGNMENT TECHNIQUES USING POLYWORKS | INSPECTOR SCANNING AND PROBING

☐ Fitting and Probing Features
☐ Feature based Alignments

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INTRODUCTION TO POLYWORKS | MODELER

- ☐ User Interface
- ☐ Basic Options
- ☐ Importing Polygonal and CAD models
- ☐ Units and Scaling models

MODEL TOPOLOGY AND WATERTIGHTNESS

- ☐ Analysing Polygonal models or Triangular & Vertices errors
- ☐ Analysing Polygonal models for holes

OPTIMISING POLYGONAL MESHES

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

HOLE FILLING

- ☐ Automatically and Interactively hole filling
- ☐ Filling holes 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 up to curves

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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 PolyWorks | Inspector Projects etc

HOLE CUTTING

- □ Importing Features from PolyWorks | Inspector Projects
- □ Using closed Curves or Features from PolyWorks | Inspector 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

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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 PolyWorks | Inspector Projects
- □ Using closed Curves or Features from PolyWorks | Inspector Projects

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
- □ Simplifying Curve Networks on flat surface and complex networks

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