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Rhino Fundamentals

Rhino is a 3D computer graphics and computer-aided design (CAD) application software developed by Robert McNeel & Associates. Rhinoceros geometry is based on a NURBS mathematical model, which focuses on producing mathematically precise representation of curves and freeform surfaces in computer graphics. Rhino uses real world dimensions in modeling. Among its many strengths is the preparation of models for 3D printing and CAD/CAM operations. While Rhinoceros is developed for Microsoft Windows operating system, a beta version with a reduced toolset is available for OS X.

This course offers a basic knowledge and understanding on Rhino. This course is for those who want to efficiently learn the basic concepts and features of Rhino around navigating the 3D space and to start becoming comfortable creating and manipulating basic 3D models. Learn how to create 2D curves, Model surfaces, how to create solids and transform them to make more complex models. Get comfortable modeling and using multiple techniques to create your model.

This Fundamentals class will be a hands-on workshop

Upon completion, you will be able to:

- Draw curves and model simple surfaces
- Create 3D solids
- Transform and edit your simple model to create more complex models
- Create a simple 3D set and props

Prerequisites

- Basic level computer skills recommended.
- Previous drafting and modeling experience helpful but not required.
- A familiarity with the terminology of Rhino – Completion of the Rhino Intro class recommended

Software and Hardware Requirements

- The class will be presented on Rhino 5
- To download Rhino 90 day Trial version: Click HERE
- For reference only:
- Operating system requirements: Mac OS X 10.8.5 or Microsoft Windows 7, 8 or 8.1
- Hardware: 64-bit Intel or AMD multi-core processor, 1 GB of RAM (8GB recommended), 600 MB disk
- free disk space for install and a three button mouse. OpenGL 2 capable video card recommended.

Questions?

Please call us at 800-336-3375.

Course Outline

Day 1

Welcome and Introduction

Drawing in 2D

- Overview of lines and polylines
- Constructing rectangles and polygons
- Drawing arcs, circles and ellipses
- Creating free-form curves

Modeling Simple Surfaces

- Construction stratagems
- 3D surface types
- New curve extrusion types
- Modeling with extrusions
- Lofting to create surfaces
- Create surfaces with Revolve and Rail
- Sweep 1 and 2 rail options
- Network Surface for complex surfaces

Creating 3D solids

- (Creating a simple 3D set and props)
- Solids overview
- Creating solids with primitives
- Creating solids with extruded curves
- Boolean functions
- Workarounds for Solids and Booleans
- Utilizing new solid control points
- Sub-object selection

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Day 2

Aids in modeling

- Deconstructing modeling aids
- Grid snap and attributes
- Orthographic modeling
- Planar modeling aid
- Object snaps
- Utilizing cursor constraints
- SmartTrack selection filter dialogIsometric Settings
- Establish symbology and layout settings
- Quick Isos
- Production Isos
- Edit Iso
- Export to Pipe Component File (.PCF)

Transform and Edit

- (Modifying a simple 3D Set and Props)
- Using fillet and chamfer on corners
- Trim and split
- Drag and nudge
- Copy and paste
- Undo and redo
- Group objects
- Scale objects
- Mirror command and alternative functions
- Utilize arrays for sets and copies