



Rhino NURBS Modeling

In this comprehensive 3-day class you'll learn to create and edit accurate free-form 3-D NURBS models. This fast-moving class covers most of Rhino's functionality, including the most advanced surfacing commands.

- First, every module begins with a command section that provides with detailed explanation of the commands and tools in Rhino 4.0.
- Next, the command section is followed by tutorials that are created using these commands. This approach allows the student to use the text initially as a learning tool and then later use it as a reference material.
- Lastly, the students will work on specific company projects that show the preferred method of application of Rhino 4.0 at their company.



Course Syllabus

I. IDENTIFYING INFORMATION

Course: Rhino NURBS Modeling
Prerequisite: Basic computer skills (preferable CAD)
Time Frame: 24 contact hours
Instructor: Lee Kittredge
Mobile: (248) 844-9090
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II. REFERENCE MATERIALS

1. Rhinoceros Level 1 Training Manual by Robert McNeel & Associates

III. COURSE GOALS AND OBJECTIVES

1. Create and edit accurate free-form 3-D NURBS models
2. Create Lines, Circles, Arcs, and Curves
3. Create 3D models from 2D objects
4. Use copy, move, array, rotate, trim, split, scale, and join commands
5. Use Boolean operations
6. Render using shade, render, spotlights, and materials
7. Export and Import models



IV. METHODOLOGY

This course provides the solid fundamentals of the CAD tool to prepare the student for more specific and advanced functions. Each module will introduce new material that will prepare the student for the projects to be completed.

Lectures

Each detailed subject will be presented in a lecture format outlining the theory and standardized accepted methodology. A PDF file of the lecture material will be provided for the student's personal use as reference material. Lecture note outlines will be distributed to the students for each lecture to help the student capture personal notes.

In-Class Assignments

Using the theory and industry examples the student will conduct several projects that outline each key principal on in-class projects. These projects will increase in complexity as the students further develop their skills in applying these tools and techniques.



V. **COURSE OUTLINE AND ASSIGNMENTS**

Module 1: Introduction

User interface	Discussion
Graphics Area	Discussion
Command Line	Discussion
Toolbars	Discussion
View Manipulation	Discussion
Exercises 1 and 2	Assignment

Module 2: Objects in two dimensions

Drawing curves	Discussion
Layers	Discussion
Object selection	Discussion
Modeling Aids	Discussion
Exercises 3-9	Assignment

Module 3: Precision Modeling

Coordinates	Discussion
Object Snaps	Discussion
Complex curves	Discussion
Exercises 10-31	Assignment

Module 4: Editing Objects

Fillet, Blend and Chamfer	Discussion
Move and Copy	Discussion
Transformations	Discussion
Trim and Split	Discussion
Extend	Discussion
Nudge	Discussion
Exercises 32-51	Assignment

Module 5: 3-D Modeling and Editing

Creating Deformable Shapes	Discussion
Modeling with Solids	Discussion
Creating and Editing Surfaces	Discussion
Exercises 52-66	Assignment

Module 5: Additional Operations

Rendering	Discussion
Printing, Annotations	Discussion
Customizing the work environment	Discussion
Exercises 67-75	Assignment