



# McNeel Europe

European division of Robert McNeel & Associates

## **Rhinoscript Training**

Rhinoceros users are invited to Barcelona for a three-day intensive RhinoScript workshop. Participants in the workshop will be guided through the particularities of scripting within Rhino, including understanding variables, conditional statements, looping, and functions in order to extend Rhino's functionalities for personal and professional applications.

### **Course Outline:**

In this intensive 3-day workshop you will learn how to extend Rhino's functionalities and your user experience through creating and executing scripts. This class covers the basics of Visual Basic Script [vbScript] the main scripting language used within the Rhino environment. Participants will learn about using variables, arrays, conditional statements, looping, and custom functions in order to exploit the scripting functionality embedded into Rhino.

### **Structure:**

This class will begin by getting users acquainted with the scripting environment within Rhino. The scripting will move topologically, building through points, curves, and surfaces in order to achieve an understanding of the potential of working with Rhinoscript.

### **Outcomes:**

After this course, the participants are expected to be able to:

- Understand how to write, edit, and execute Rhinoscripts.
- Quickly identify and correct common bugs that can prevent scripts from running.
- Have a solid working knowledge of common Rhinoscript commands and how to understand the arguments necessary to successfully execute commands.
- Understand the resources available and how to find information when needed.

### **Target Audience:**

This course is intended for existing Rhino users that have completed LEVEL 1 training or have a good working knowledge of the Rhino modeling environment.

### **Prerequisite:**

Rhinoceros v4 SR(most recent)

Monkey Scripting Environment (available from Rhino Labs)

To make the most of the three day workshop, it is highly recommended that participants survey the available RhinoScript resources on the web, such as David Rutten's Rhinoscript 101 handout, prior to arriving in Barcelona for the workshop.

## Curriculum:

### DAY 1 (AM): Foundation

This introductory session will get participants acquainted with the scripting environment in Rhino.

- Monkey Script Editor
- RhinoScript Help
- Online Resources
- Variables
- YOUR FIRST SCRIPT!

### DAY 1 (PM):

Now that the participants have an understanding of what it means to run a script in Rhino, they will begin to learn the following scripting concepts:

- Variables + Arithmetic Operators
- Conditional Statements + Logical Operators
- Iterating through code: Looping
- Debugging
- One-Dimensional Arrays

### DAY 2 (AM):

Topology: Participants will build a topological understanding through scripting in order to move from points to curves to surfaces:

- User Interaction
- Topological RhinoScript: Coordinates vs Geometry
- Curve, Surface, and 3D Space

### DAY 2 (PM):

Topology 2: Once participants have an understanding of how to translate between dimensional spaces, certain data structures will need to be understood in order to organize and exploit data:

- Arrays: One dimensional arrays revisited
- Geometric Analysis

### DAY 3 (AM):

Script Development: Participants now have a clear understanding of the fundamentals of Rhinoscript. This last day will focus on developing a custom tool.

- Pseudo-Coding to map out script development
- Script versioning and compatibility
- Proof of concepts
- Custom Functions

### DAY 3 (PM):

Script Development 2: Complete the custom application

- Debugging and Code optimization
- Geometric Output strategies
- Script Variations