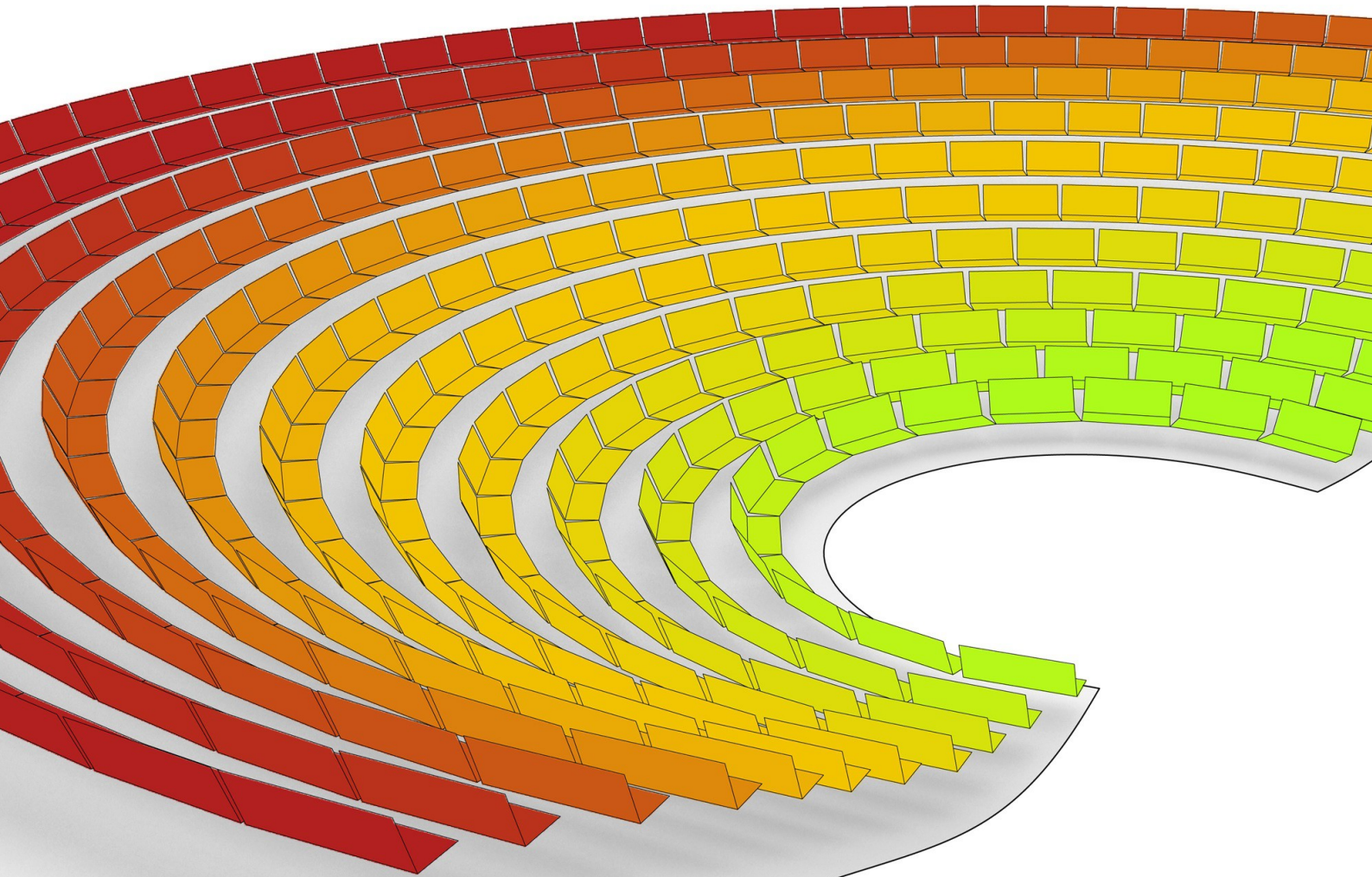


# RhinoPython

online webinar



4-day introduction

Scripting, automating and making the most of the new programming language for Rhinoceros 5.0 in Windows and Mac.



# RhinoPython 4-day online webinar

The webinar is intended for all Rhino users who want to get started with the basics of Rhino.Python scripting or update their RhinoScript skills. Through this webinar, participants will learn how to handle basic Python codes, run macros to automate commands, perform calculations and successfully develop codes for geometry in Rhino 5 for Windows and for Mac. As a participant you will also learn how to write your own functions, manage different data structures and extend your Grasshopper experience by combining it with iterative and recursive Python codes.

## Structure

The webinar is divided in three morning sessions of three hours and an optional assessment session at the end of the week. During the webinar we will learn how to write, debug and optimize our Rhino.Python scripts. We will start by getting familiar with the scripting editor, both in Rhino 5 and Grasshopper, run existing scripts, import and use Rhino functions. We will cover Rhino's geometrical entities, building through vectors, points, curves, meshes, surfaces and polysurfaces, and analyzing where to find information on all their methods and obtain an understanding of the differences and potentials of different elementary types.

This class is taught fully on-line. The assessment session allows access to the certificate of evaluation, including final percentage. You can ask to participate without marks, in which case a certificate of completion will be sent to you.

## Audience

This webinar is intended for Architects, Engineers and Designers who are familiar with Rhino modeling techniques and interface. No previous Rhino.Python experience is required. A basic programming knowledge, especially with Python, will allow you to follow the class entirely. If you need to gain basic Python knowledge, please contact us at least a week in advance and we will advise you on where to find useful information.

## Results

- After this course, participants will have the foundations to:
- Understand how to run, edit and compose Python code for Rhinoceros
- Identify and correct common bugs that can prevent code from executing
- Distinguish variables, functions and other procedural and object-oriented paradigms
- Find their way to access available resources both online and offline

## Prerequisites

Rhinoceros 5 (you can get the evaluation version from [here](#))

Grasshopper (latest from [www.grasshopper3d.com](http://www.grasshopper3d.com))

GhPython (latest from <http://www.food4rhino.com/project/ghpython>).

# Program

## Outline

### Day 1, Monday – Setup

- Get familiar with the Python Script Editor
- Write your first code : The ‘Hello world’
- Access Online resources
- Learn about assignments, statements, variables and conditionals
- Arithmetic operations and functions

### Day 2, Tuesday – Graphics from macros and functions

- Websites with sample code
- Modules
- Parsing files and categorizing data
- Coloring elements based on conditions: adjacency on a surface and evaluation of points
- Curves and surfaces: construction from control points

### Day 3, Wednesday – Graphics and macro-style

- String manipulation and specification on Python method vs. function calls
- Recursion, with Koch curve
- User interface management: built-in and custom functionality
- Locations to find additional modules online
- Using a pure-Python library, such for example to print charts and graphics

### Day 4, Saturday – Test and final questions

- User questions
- Assessment quiz
- Compiling modules for release