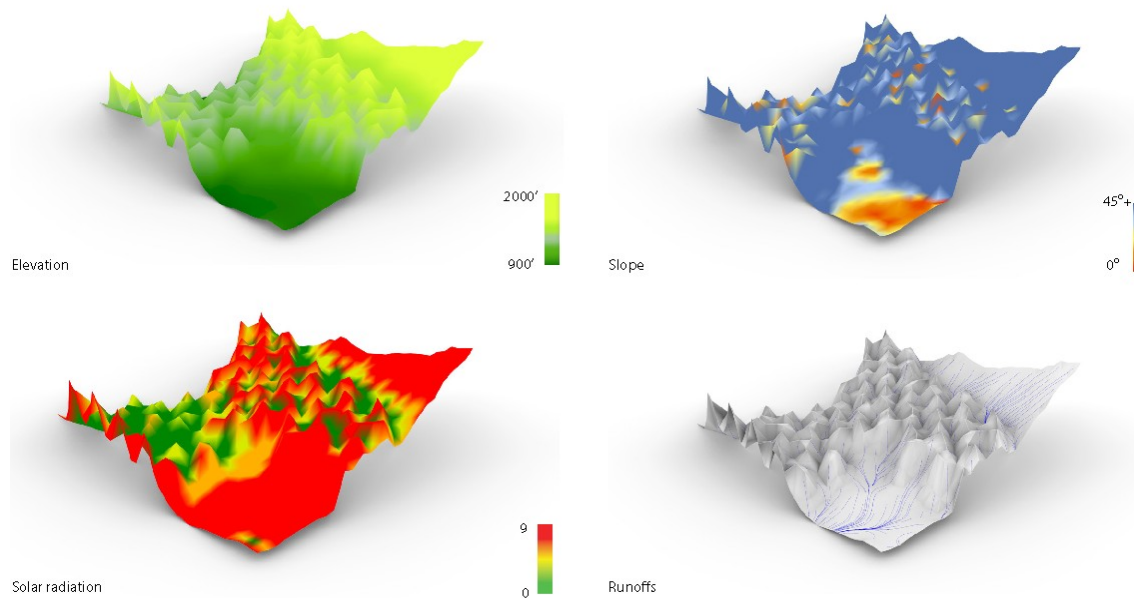


LA 4/550 Fall 2023

EVOLUTIONARY LANDSCAPES: *Advanced Digital Media for Landscape Architecture*

CRN 12854 / 12868 - Tuesday+Thursday 9:00-9:50am in 231 LA (2 credits)

Instructor: **Ignacio López Busón**, ilopezbu@uoregon.edu



Greenwald, Grover, Kurtz
Evolutionary Landscapes Fall 2021

COURSE DESCRIPTION:

The major technological breakthroughs resulting from the digital revolution at the end of the 20th century have allowed for dramatic advancements in the measurement, analysis, and prediction of complex environmental processes that have increased the general awareness of climate change and its consequences. In addition, growth in computational power and continuously evolving design tools allow architecture, landscape, and engineering professionals to model and evaluate projective scenarios at unprecedented speeds and scales.

As key stakeholders in designing and planning the urban and natural environment, landscape architects must have an active agency regarding digital tools and understand their potential and limitations. Only by engaging in this process can landscape designers remain relevant in the contemporary shaping of our physical environment and take the lead in facing the challenges of climate change.

This course focuses on the intersection of landscape design, environmental science, and computational tools by exploring the potential of evolutionary algorithms in the 3D modeling and manipulation of landforms based on the analysis of environmental phenomena.



Landscape Architecture Department
1206 University of Oregon, Eugene OR 97403-1206
TEL 541-346-3656 | FAX 541-346-3626 archenvironment.uoregon.edu/architecture

An equal-opportunity, affirmative-action institution committed to cultural diversity and compliance with the Americans with Disabilities Act

PREREQUISITES:

Although students are not expected to master the advanced tools introduced in the seminar (Rhino+Grasshopper+Twinmotion), they have to have previous experience with landscape design media and 2D/3D representation, including McNeel's Rhinoceros and the Adobe Suite package (photoshop + illustrator + indesign).

Some recommended classes before this course are:

- ARCH 222 Intro Arch Comp Graph (undergrads)
- LA 4/510 Landscape Media I
- LA 4/510 Intro Media II

If you have not taken any of the courses above, please contact the instructor.

METHODS AND COURSE DELIVERABLES:

This class aims to increase students' computational and design skills and teach them the critical agency of digital tools in contemporary landscape design processes.

The course is structured in five main phases:

1. A short initial boot camp phase to introduce the students to all the programs and tools
2. A digital analysis phase for the study of dynamic systems and their influence in the landscape
3. A 3D modeling phase to develop topographic models and manipulate them based on evolutionary algorithms and environmental simulations
4. A digital fabrication phase for the rapid prototyping of topographic physical models
5. A visualization phase for the documentation and communication of the entire design process

The initial tool-up phase will be individual to allow all students to become familiar with the programs and tools. After that, students will be expected to form teams of two or three for the subsequent phases. There will be a mid-term review to evaluate the overall progress. Students will be graded individually based on their contributions to the mid-term and the final booklet.

The expected outcomes for this course are a final documentation booklet and a physical model of their proposals. The final brochures will demonstrate a comprehensive understanding of all the techniques, digital methods, and processes covered throughout the entire term, including the necessary diagrams, drawings, and renders to explain the projects. To achieve this, students must keep up with the weekly assignments and upload them to a provided whiteboard online platform.

HARDWARE & SOFTWARE REQUIREMENTS:

1. PC with Microsoft Windows installed
(Mac is not recommended, but it will be accepted if users have bootcamp and Windows installed and working before the first day!)
2. Rhino 6.0 or 7.0 (Rhino for Mac will not work for some tutorials - must be Rhino for Windows)
3. Adobe Suite (Photoshop, Illustrator, Indesign, Premiere)
4. Twinmotion (Free for students at www.unrealengine.com/twinmotion)



Landscape Architecture Department
1206 University of Oregon, Eugene OR 97403-1206
TEL 541-346-3656 | FAX 541-346-3626 archenvironment.uoregon.edu/architecture

SUGGESTED READING:

Cantrell, Bradley. **Responsive Landscapes: Strategies for Responsive Technologies in Landscape Architecture.** ROUTLEDGE, 2017.

Cantrell, Bradley, and Adam Mekies. **Codify: Parametric and Computational Design in Landscape Architecture.** Routledge, 2018.

Cantrell, Bradley. **Modeling the Environment: Techniques and Tools for the 3D Illustration of Dynamic Landscapes.** 2012.

Lima, Manuel. **Visual Complexity: Mapping Patterns of Information.** Princeton Architectural Press, 2013.

Lynn, Greg. **Animate Form.** Princeton Architectural Press, 1999

Walliss, Jillian, and Heike Rahmann. **Landscape Architecture and Digital Technologies: Re-Conceptualising Design and Making.** Routledge, 2016.



Landscape Architecture Department
1206 University of Oregon, Eugene OR 97403-1206
TEL 541-346-3656 | FAX 541-346-3626 archenvironment.uoregon.edu/architecture