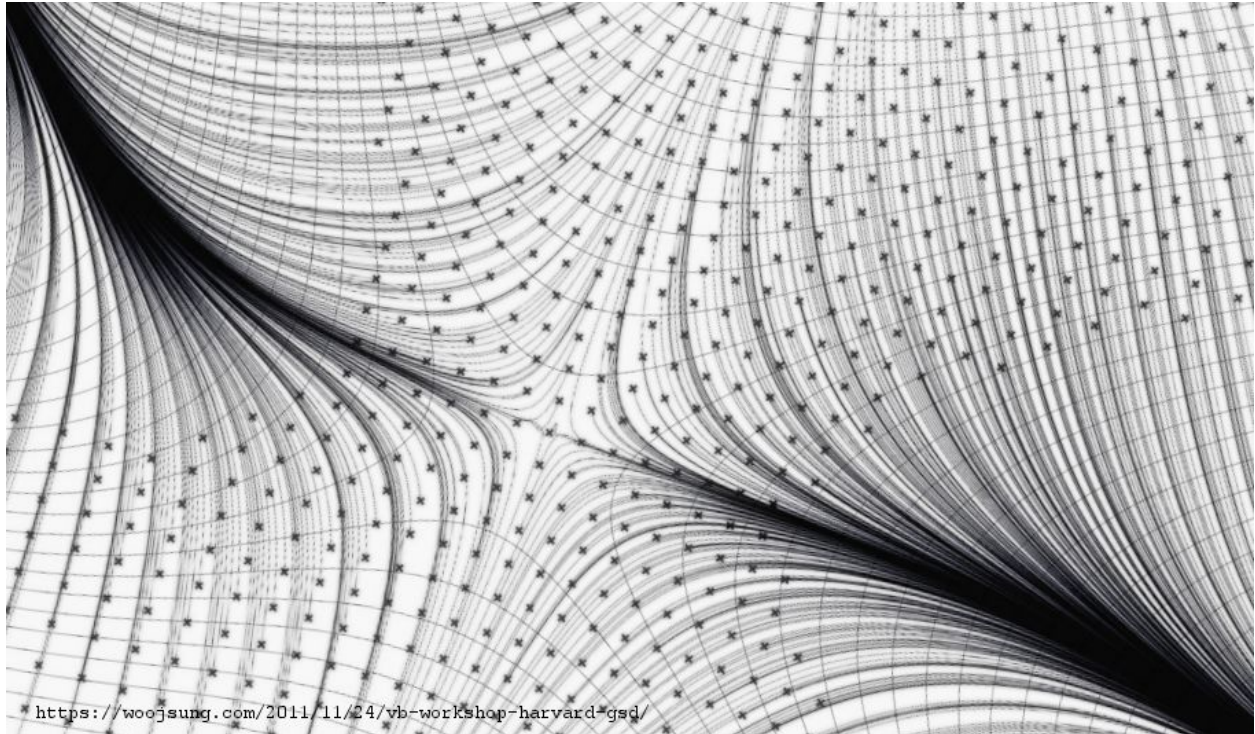


TOOLS FOR LANDSCAPE PERFORMANCE ASSESSMENT



Instructor: Junhak Lee (junhakl@uoregon.edu), Dept. of Landscape Architecture, Univ. of Oregon
LA 459/559: Spring 2021 - online course (4 units course). Office Hours: TBA

Landscape performance refers to a measure of the effectiveness with which landscape solutions fulfill their designed purpose and contribute to sustainability. Performance measures are essential to demonstrate the positive impact of a design and systematically show how the design solutions embrace sustainability. This course will introduce the student to tools for assessing the performance of natural and built landscape features. Students will learn how to conduct performance assessments for different benefit categories (land, water, carbon-energy-air, social, and economic) using various computer software applications. This course will also teach students how to use the Landscape Performance Series Benefits Toolkit (selecting tools, preparing data, running the applications, and interpreting the result) as well as other environmental simulation tools (such as Ladybug tools, Rainwater+, etc.) running within 3D modeling software.

This course is intended for landscape, environmental design/studies/science, and planning students, but it is opened to students from other disciplines who want to explore various methods that measure ecosystem services and sustainability.

Course Objectives

- Determine what and how to measure the performance of natural and built environments by using the introduced assessment tools.
- Understand opportunities and challenges of assessment tools for landscape performance
- Learn the process of assessing the performance of a landscape project design

- Be familiar with using computer application tools for real-world landscape performance evaluation.

Textbook

- No textbook is required

Materials

- Hardware
 - Computer (Linux, Mac, or Windows)
 - Device with a camera (smartphone, digital camera, action camera, laptop, etc)
- Software - all software programs are free except Rhinoceros 6. You can use 90 days free trial or computers in DCL if you do not have the license
 - Windows OS
 - QGIS (free and open source GIS software)
 - CloudCompare (3D point cloud processing software)
 - Spreadsheet program (Excel, Numbers, Google Sheets, etc)
 - Rhinoceros ver. 6 (3D computer graphics and design application software)
 - Grasshopper plugins - Ladybug tools, Rainwater+

Course Mechanics

Although this course is online (on Canvas) and proceeds asynchronously (i.e. students can access class materials and conduct lab exercises anytime on their own time schedule), the class activities and assignments (video lectures, readings, quizzes, and lab exercises) will be released on a weekly basis (with weekly due dates). Hence, course workloads are evenly distributed throughout the term. The weekly hands-on exercises cover different benefit categories (land, water, carbon-energy-air, social, and economic) using various computer software applications.

In addition to online assistance, the instructor will be available during office hours and via appointments to work one-on-one with students wishing in-person assistance.

* This course requires **Windows OS** (to run software applications). If you have a Mac, you need to have a Windows OS on your Mac using either Bootcamp or virtualization software (such as VMWare, Parallels, VirtualBox, etc)