

ARCH 548 L: Media for Landscape Architecture: 3D Design

University of Southern California, Department of Landscape Architecture

3 Units

Spring 2016

Friday 9-Noon

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Office hours are by appointment



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SURFACE, PROCESS, + ANALOGUES

The landscape surface is richly complicated with notions of process, transformation, texture, and pattern.

Abstract smoothness is a fleeting moment in the landscape project. Once a surface becomes exposed to the parameters of inhabitation, vegetation, and environment, roughness overtakes. This course will explore the generation of form as it relates to the surfaces and processes of landscape and environment. Moving between prescriptive and plastic methodologies, intuition and logic, students will develop a series of three-dimensional analogous terrains. Through these studies we will explore the representational boundaries and techniques of physical and digital space.

The course will explore various techniques using physical tools and digital aids to address methods for creating 3-d landscape models. Moving between process work and finished products, students will experiment with modes of graphic and physical representation. Students will become familiar with the 3d modeling environment of Rhino and use this in conjunction with other design media to investigate 3-dimensional surfaces, the simulation of process and texture. These explorations will be processed into two-dimensional representations using the adobe suite, v-ray rendering techniques and animation. Additionally digital form will be processed into three-dimensional physical models, where students will combine physical and digital fabrication outputs.

The course will be structured as a series of workshops and pin ups, where each class session is an opportunity to learn new techniques and build on the work of the current assignment. Students will be encouraged to experiment with both material and formal concepts.

Course Requirements

Reading:

There is required reading for each assignment, intended to enrich students understanding of the work and contextualize it within the discipline.

Lisa Iwamoto, "Contouring", *Digital Fabrication: Architectural and Material Techniques*.

Bowring, Jacky and Simon Swaffield. "Diagrams in Landscape Architecture" in *AD Reader: The Diagrams of Architecture*, ed. Mark Garcia. Wiley, 2010.

Karen M'Closkey, "Synthetic Patterns: Fabricating Landscapes in the Age of 'Green'" *Journal of Landscape Architecture*, Spring 2013.

Required Software:

Sketch Up Pro

Google Earth Pro

Rhino w/ Vray + Grasshopper

Adobe Suite: Illustrator, Photoshop, After Effects

Required Materials:

Basic Modeling tools – straight-edge, cutting mat, pins, exactos, rulers, dividers.

Various Modeling materials- Wood, various boards (chipboard, museum board), plaster, fabric, foam, etc.. *These materials will be used throughout the semester, these do not need to be purchased in advance.*

Grading

All Assignments are due as detailed in the schedule, grades will be issued the following week.

Assignment 01	30%
Assignment 02	30%
Assignment 03	30%
Final Review	10%

Assignments

Assignment 01	<p>Geographic Models and Digital Manipulations</p> <p>This assignment introduces students to working with digital elevation models and basic digital surface modeling techniques. Students will test a variety of surface manipulations as a way of developing processes for generating and refining design ideas. A series of models exploring the techniques using faceting, sectioning, and contouring will be digitally fabricated using the laser cutter.</p> <p>Reading: Lisa Iwamoto, "Contouring", <i>Digital Fabrication: Architectural and Material Techniques</i></p>
Assignment 02	<p>Process + Flows</p> <p>Using the initial model series students will assign attendant processes and flows to their surfaces, these will be explored through digital simulation and the use of Grasshopper scripts. The final output will be a set of composite drawings addressing the challenges of representing dynamic landscapes and transformative terrains using digital models, animation, and drawings.</p> <p>Bowring, Jacky and Simon Swaffield. "Diagrams in Landscape Architecture" in <i>AD Reader: The Diagrams of Architecture</i>, ed. Mark Garcia. Wiley, 2010.</p>
Assignment 03	<p>Final Analogues</p> <p>A final set of analogues or models will be constructed by translating the studies from Assignment 02 into a set of composite digitally fabricated and hand crafted models.</p> <p>Karen M'Closkey, "Synthetic Patterns: Fabricating Landscapes in the Age of 'Green'" <i>Journal of Landscape Architecture</i>, Spring 2013.</p>

Schedule

(subject to change)

Week 01	<p>01/15</p> <p>Class Introduction</p> <p>SURFACE</p> <p>Lecture: Surface, Process, Analogue</p> <p>Tutorial 01: Surface Manipulations</p> <p>Distribute: Assignment 01</p>
Week 02	<p>01/22</p> <p>SURFACE</p> <p>PIN UP Assignment 1.1: Models</p> <p>Reading 01: Discussion</p> <p>Tutorial 02: Network Surfaces</p>
Week 03	<p>01/29</p> <p>SURFACE</p> <p>Tutorial 03: Folded Surfaces</p>
Week 04	<p>02/05</p> <p>SURFACE</p>

Tutorial 04: Digital Fabrication: Laser Techniques

Week 05	02/12 SURFACE <i>PIN UP Assignment 01</i> Lecture 02: Landscape Process Distribute: Assignment 02
Week 06	02/19 PROCESS <i>PIN UP Assignment 2.1</i> Tutorial 05: Visualizing Process 2D-3D Grasshopper Flow
Week 07	02/26 PROCESS Tutorial 06: Vray and Texture Maps
Week 08	03/04 PROCESS Tutorial 07: Animating Process
Week 09	03/11 PROCESS Tutorial 08: Rendering Animation Work Session/Desk Crits: Assignment 02
Week 10	03/18 SPRING BREAK
Week 11	03/25 Midterm Review Assignment 01+02
Week 12	04/01 ANALOGUE Lecture Analogue Distribute: Assignment 03 Tutorial 09: Paneling Tools
Week 13	04/08 ANALOGUE <i>PIN UP Assignment 3.1</i> Tutorial 10: Paneling Tools 2
Week 14	04/15 ANALOGUE Tutorial 11: Digital Fabrication File Preparation Work Session: Fabrication Lab Time: Desk Crits
Week 15	04/22 ANALOGUE Work Session: Fabrication Lab Time: Desk Crits
Week 16	04/29 EXPO Week – No class (desk crits by appointment.)
Week 17	Final Review Date TBD

Policies

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 A.M.–5:00 P.M., Monday through Friday. The phone number for DSP is (213) 740-0776.

Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Accreditation

The Master of Landscape Architecture degree program includes three curricula. Curriculum +3 for students with no prior design education and Curriculum +2 for students admitted with advanced standing have full accreditation by the Landscape Architecture Accreditation Board. Information about landscape architecture education and accreditation in the United States may be found online at <http://www.asla.org/Education.aspx>.

Religious Holidays

The University of Southern California recognizes the diversity of our community and the potential for conflicts involving academic activities and personal religious observance. The University provides a guide to such observances for reference and suggests that any concerns about lack of attendance or inability to participate fully in the course activity be fully aired at the start of the term. As a general principle, students should be excused from class for these events if properly documented and if provisions can be made to accommodate the absence and make up the lost work. Constraints on participation that conflict with adequate participation in the course and cannot be resolved to the satisfaction of the faculty and the student need to be identified prior to the add/drop date for registration. After the add/drop date the University and the School of Architecture shall be the sole arbiter of what constitutes appropriate attendance and participation in a given course.

Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

School of Architecture Attendance Policy

A student may miss the equivalent of one week of class sessions (in this case, **ONE, TWO, OR THREE (faculty, edit this as needed) excused** absences are permitted) without directly affecting the student’s grade and ability to complete the course. An excused absence is a confirmed personal illness, family emergency, or religious holiday. For each absence over the allowed number, your grade can be lowered by 1/3-letter grade. If additional absences are required for a personal illness, family emergency, pre-approved academic reason/religious observance, you must discuss the situation with your faculty member immediately.

Any student not in class within the first 10 minutes is considered tardy, and any student absent (in any form including sleep, technological distraction, or by leaving mid class for a long bathroom/water break) for more than 1/3 of the class time can be considered fully absent. If arriving late, a student must be respectful of a class in session and do everything possible to minimize the disruption caused by a late arrival. It is always the student’s responsibility to seek means (if possible) to make up work missed due to absences, not the instructor’s, although such recourse is not always an option due to the nature of the material covered.

Sustainability Initiative

The School of Architecture has adopted the 2010 Initiative for Sustainability. Solutions to design problems must engage the environment in a way that dramatically reduces or eliminates the need for fossil fuel.