



Hudson House, Speranza Architecture + Urban Design, Rendering by Gillian Hevey

ARCH 222, Design Communication II (Intro to Computing)

Instructor: Philip Speranza, speranza@uoregon.edu
 Graduate Employee: Ryan Maruyama, maruyam@uoregon.edu
 Location: Tuesdays and Thursdays, 8:00-9:50AM, LA 115; Labs T & W in LA 100 & 383

*"I'd like to think that we are now entering a third, more mature phase in our relationship to digital technology. Thanks in part to a new generation of architects who have been educated entirely within the digital regime, and on the other hand to the first generation of digitally trained architects who have continued to evolve their thinking, the computer is beginning to have a **practical** impact, beyond the formal or the metaphorical."* - Stan Allen, *If...then... Architectural Speculations*

Design communication pervades the way design approaches today may be seen as systematic frameworks for participation that evolves through understandings of human experience from the bottom-up. This course will investigate design communication methods to explore the experience of each student's design intent in three parts: I. Unit Diagrams; II. Analog Parametric Design; and III. Digital Parametric Design. Students will bridge analog and digital media to explore a systematic approaches to measure existing and proposed environmental conditions. This method of systems thinking allows students to use digital media to understand human and natural conditions not as singularities but as a more powerful parametric approaches. The course will introduce theoretical ideas in a lecture format, meet for one hour in small computer lab settings and provide opportunities for one-to-one studio based learning in a design studio setting.

Software Requirements: **MS Windows** & Adobe Creative Cloud (PC Preferable) (Photoshop, Illustrator and In-Design).

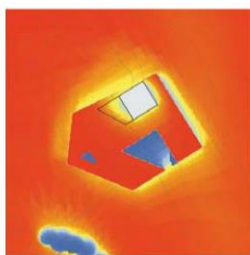
*The department will provide lab license access to Rhino 5.0 and V-Ray for Rhino.

*Hardware and Software Requirements: <http://aaa.uoregon.edu/computing/purchasing/student#architecture>

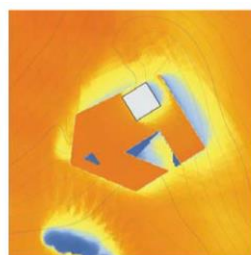
***We require:** an external monitor, a mouse, ethernet cable and a minimum 8+ GB RAM.

*Virtualization software such VMware or Parallels is optional.

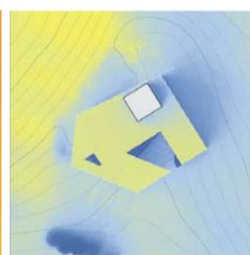
*You must register for an associated one-hour lab section. Thank you.



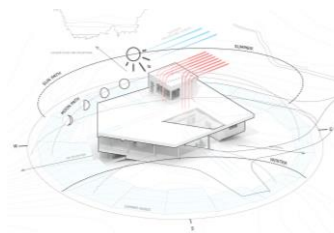
SUMMER
courtyard canopies deployed

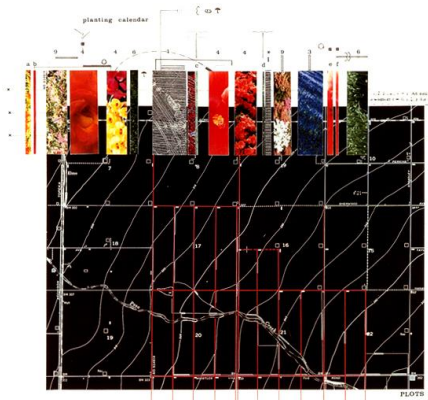


SPRING / FALL
no canopies



WINTER
no canopies





James Corner, Time, Material, Place Diagram

Course Objectives

Students will use design communication to explore the following architecture objectives:

- I. **Diagramming:** Drawing relationships as a generative design tool
 - Diagramming object/environment affect
 - 3D to 2D workflow, modeling to drawing
 - Single idea “d” diagrams: ink drawings and digital hard-lined
 - Collage Diagrams: vectoral space, materials/textures, time
 - Time-Based Diagrams
 - 4th degree generative diagrams
 - Simple volume surface modeling for use in diagramming precedents
 - Abstracting plan and section from volumetric models
- II. **Analog Parametric Modeling:**
 - History of tiling types as used in patterning
 - Two-dimensional tiling exercises, including transformative step-by-step diagrams of operations
 - Three-dimensional tiling exercises, considering volumetric implications and scale
 - Lighting and mapping, consideration of affect and human interface
- III. **Digital Parametric Modeling:**
 - Analysis of studio design intent, generative diagrams, and material affect to create a parametric wall system and optionally for a plan/section organizational system for the studio project
 - Considering mapping data sets into the parametric system to inform a single operation such as a material assembly with consideration of affects to human experience
- *. **Presentation Methods:**
 - Studio board layout and other communication methods will be studied using case-study examples and diagrams to support the final studio presentation
 - Design Communication II final as an exploratory digital fabrication connecting virtual and physical media tested in a 1:1 mockup of material affect.

STUDENT PERFORMANCE CRITERIA ADDRESSED

- A.3, VISUAL COMMUNICATION SKILLS

Course Goals:

- Teach new media emphasizing design process, strengthening skills to be used in a studio.
- Introduce integrated methods encompassing digital and non-digital media.
- Develop learning strategies for changing technology including systems and non-linear design.
- Design problems that will challenge students at all levels.

Critical Design Issues

- Context
- Organizational systems
- Performative systems
- Documentation and Analysis
- Synthesis of systems
- Abstraction of systems
- Material Affect
- Non-Linear Parametric Design

Course Method

This course is organized as one lecture group and smaller lab groups as coordinated with studio sections in which students engage in independent project-based learning. The course time will be split between lectures, discussion and workshops using the analog and digital media in the studio environment. The work will be shared in class to foster peer-to-peer learning. Class meetings include a variety of communication formats including lectures, tutorials, desk-critiques, pin-ups, reviews, in-class discussions and reading assignments. **Students are required digitally post work to the weblog by 11:59pm midnight unless stated otherwise: *last_first_222_F18_01.jpg* at 2000x2000 pixels.

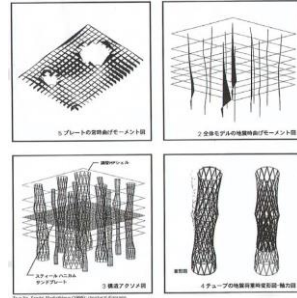
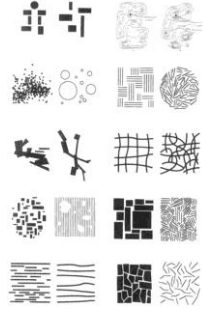
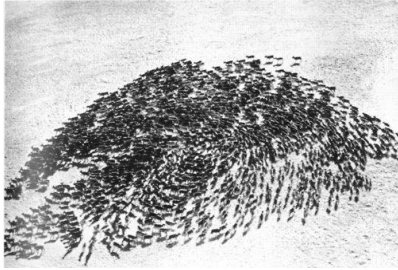
// Student should watch tutorials as homework BEFORE class.

Evaluation, Assessment and Feedback

Performance will be graded as per the outline below. Student work will be evaluated for understanding of each week's lecture information, posted information and learning objective in each assigned exercise.

Attendance Policy

Attendance is mandatory. Lateness will be counted 15 minutes after class has started. Absences will be counted 30 minutes after class has started. After 3 unexcused absences your grade will be lowered by a grade point for each additional absence if you do not have a written medical, school or religious excuse and should be reported to the instructor prior to the missed class if at all possible. All students are expected to participate in class discussions and develop projects beyond the minimum requirement.



Reindeer herd reacting to helicopter overhead; Field condition diagrams by Stan Allen, Toyo Ito diagrams

Grading

- 10% PROJECT 1.1 /// Diagramming
- 10% PROJECT 1.2 /// Time-based diagrams
- 10% PROJECT 1.3 /// Generative Diagrams + Precedent
- 10% PROJECT 2.1 /// 2D Tiling
- 10% PROJECT 2.2 /// Lighting and Mapping
- 30% PROJECT 3.1 /// Parametric Material Experience
- 10% PROJECT 3.2 /// Final Studio Presentation
- 10% PROJECT 3.3 /// Final Fabrication

Students will not receive a final grade until all work has been uploaded for digital submission.

Projects

The projects for this course are designed to encourage exposure to various means of communicating your designs through a variety of tools including everything from hand sketching to digital modeling. Detailed descriptions and requirements will be given at the time each project is assigned.

Schedule *(this schedule may change with notice)*

Diagramming

Week 1	T	04/03	Diagrams Introduction	Lecture/Workshop
	Th	04/05	Collage Diagrams	Workshop
Week 2	T	04/10	Time-Based System	Lecture/Workshop
	Th	04/12	Data	Workshop
Week 3	T	04/17	Generative Diagram+Parti	Lecture/Workshop
	Th	04/19	Sectioning/Layout	Workshop

Analog Parametric Design

Week 4	T	04/24	2D Tiling Exercise	Lecture/Workshop
	Th	04/26		Workshop
Week 5	T	05/01	Lighting/Mapping	Lecture/Workshop
	Th	05/03		Workshop

Digital Parametric Design

Week 6	T	05/08	Grasshopper Principles	Lecture/Workshop
	Th	05/10		Workshop
Week 7	T	05/15	Grasshopper Operations	Lecture/Workshop
	Th	05/17		Workshop
Week 8	T	05/22	Grasshopper Analysis Input	Lecture/Workshop
	Th	05/24		Workshop

Week 9	T Th	05/29 05/31	Presentation Exercise	Lecture/Workshop Workshop
Weeks 10-11	Th	06/07	Final Event	Hayden Gallery / Courtyard

Project Ownership, Publication, And Publicity

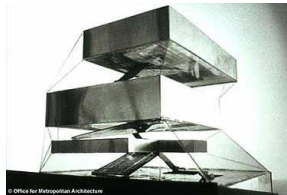
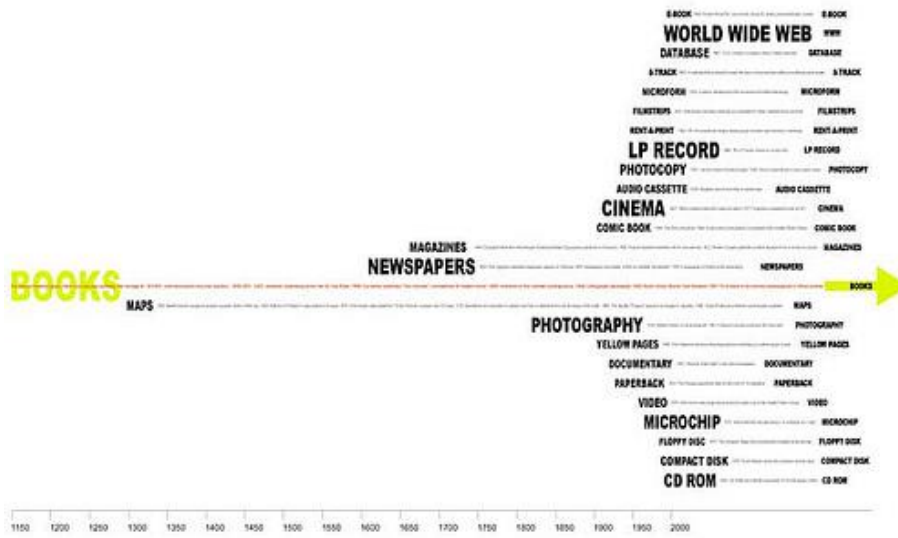
Work created for credit and/or using the facilities of the School of Architecture and Allied Arts belongs jointly to the school and the student. The AAA reserves the right to document and display all original work for the purpose of documenting student performance as mandated by the National Architecture Accrediting Board [NAAB]. Furthermore, the school reserves the non-exclusive right to use images or likenesses of the work for publicity and display in print and electronic media as well as to submit such work for competitively reviewed exhibitions or to various award programs, The School and its representatives [including faculty and teaching staff] have the non-exclusive right to use such work as illustrations in scholarly and/or technical publications and presentations.

Accommodations

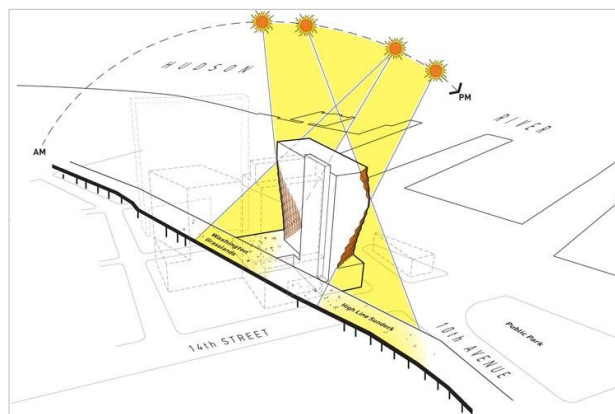
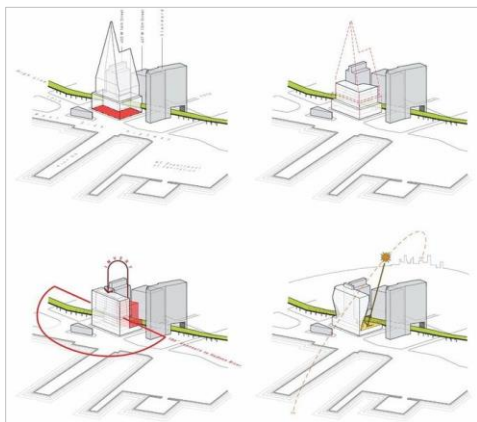
If you have a documented need for and anticipate accommodations in this course please communicate with the instructor as soon as possible. You may also request that the counselor for students send a letter verifying the need for accommodations. This is intended to support a accessible learning environment and is in way intended to inhibit privacy.

Reading List

Allen, S. (1999), "Field Conditions," *Points and Lines*, Princeton Architectural Press, New York, NY.
 Allen, S. (1998), "Diagrams Matter", in *ANY 23*, Dec. 1998
 Koolhaas, R. (1994), *Delirious*, Monacelli, New York, NY.
 de Landa, M. (2000), *A Thousand Years of Nonlinear History*, Zone Books, MIT Press, Cambridge, MA.
 Latour B. and Albená Yaneva (2008), "Give Me a Gun and I Will Make All Buildings Move: An Ant's View of Architecture," in *Explorations in Architecture: Teaching, Design, Research*, edited by R. Geiser, Basel: Birkhäuser
 Schwartz, P. (1991), *The Art of the Long View*, Doubleday, New York, NY
 Zaera-Polo, Alejandro (2010) "Between Ideas and Matters: Icons, Indexes, Diagrams, Drawings and Graphs", *AD The Diagrams of Architecture*, Wiley, West Sussex, England
 Zaera-Polo A., Stan Allen, Jeffrey Kipnis, Sarah
 Whiting, Jesse Reiser, Daniel Lopez-Perez, Pep Aviles (2009) "Envelope, Faculty Conversation," *Pidgin No. 7*



OMA, Rem Koolhaas, Seattle Public Library



Studio Gang, Jeanne Gang. Initial force diagrams for the Solar Carve Tower (left)
Architectural schematic design for the Solar Carve Tower (right)