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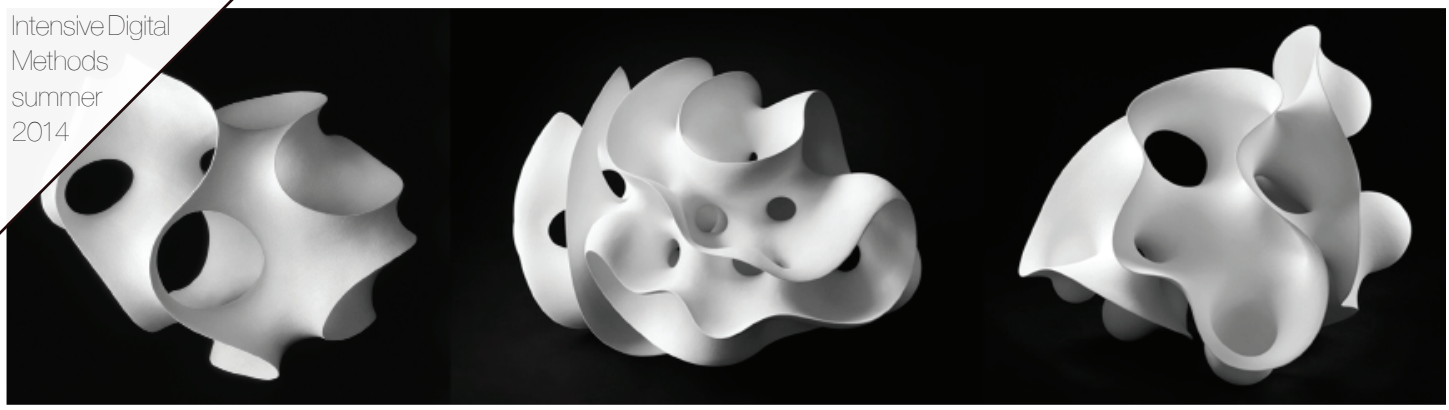
Intensive Digital Methods summer 2014



Department of Architecture
School of Design
University of Pennsylvania
Summer 2014 – Intensive Digital Methods PPD

PPD Post-Professional Program in Architecture

Winka Dubbeldam, Director

The Department of Architecture will hold a week of intensive digital preparation for students entering the post-professional program this fall. This workshop is primarily intended to introduce students to digital techniques used in the graduate design studios. Sessions will meet from approximately 9 am to 5 pm and will include both work and other orientation sessions provided for new students.

Intensive Digital Methods

August 18-22

Instructors: Ezio Blasetti, ezioblasetti@gmail.com
Danielle Willems, willems@maetadesign.com

MODEL _ SCRIPT _ VISUALIZE _ FABRICATE

This workshop will provide a comprehensive introduction to four elements critical to the digital workflow of PennDesign graduate studios: modeling, scripting, visualization and fabrication. Short daily lectures situating digital techniques in contemporary design practice will be followed by hands-on tutorials in Maya and Rhinoceros. The first half of the workshop will provide an operative knowledge of the many geometry types, modeling techniques and simulation tools available for studio work. Basic scripting techniques will also be introduced. During these sessions, each student will use the demonstrated methods to quickly develop an abstract spatial module capable of dynamic transformation. The second half of the workshop introduces visualization and fabrication techniques. Using the abstract module as a case study, students will learn to quickly produce shaded renderings, animations and technical line drawings. Students will also learn protocols for transferring data between various design software packages and creating fabrication data compatible with PennDesign digital fabrication equipment.

Topics to include:

__PennDesign : network basics: email, plotting, and computer lab procedures
__MAYA: Interface / Modeling (Polygons, NURBS & Subdivision Surfaces) / Animation / Rendering
__RHINO: Interface / Basic Modeling / Creating technical drawings and fabrication data
__ADOBE CS3: Post-processing techniques for raster and vector output with Photoshop and Illustrator
__SCRIPTING: Basic scripting concepts and techniques with Python for Rhino / MEL

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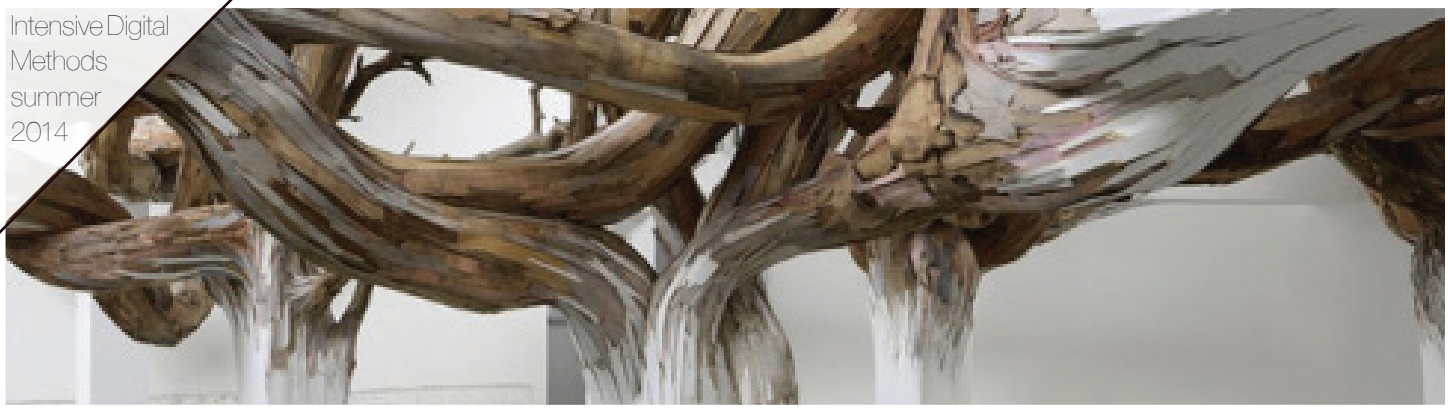
Intensive Digital Methods summer 2014



Department of Architecture
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COMPETITION

MoMA PS1 Ephemeral Pavilion

LOCATION: Entrance & Courtyard of MoMA PS1 22-25 Jackson Ave, Long Island City.
The site, MoMA PS1 ' s large triangular entrance courtyard and outdoor sculpture area, is an integral part of the museum ' s popular music concert series, Warm Up, which features experimental music, live bands, and DJs. The site is open to visitors throughout the summer.

THE PROPOSAL: The design of a freestanding temporary contemporary showcase Pavilion. The Pavilion should feature the element of surprise, unexpected juxtapositions and non sequitur. It should be a covered or partially covered, open space for sitting, talking, socializing, presentations, gatherings and musical events. The objective of the project is to provide visitors with an outdoor recreational area. Proposals could also investigate the extension of a temporary art exhibition / event / performance to the courtyard as a starting point for an architectural narration.

BUILT: This is a non-build, ideas competition. Conceptual rigor, technical precision and carefully crafted aesthetics are key components for this architectural experimentation. In parallel, materials and their behavior, scale and its economy relative to affects, articulation and constructibility are also invaluable ingredients for winning entries.

DEADLINE: WEDNESDAY AUGUST 27th

ENTRY FORMAT: (2) pdf boards /size : A1 (printed and digital submission)
Please put the student name and project title in the file name.

PRIZES/ AWARDS: Winning proposal will receive a book from the Director of the PPD program. The competition boards will be pinned up in the upper gallery space on the first day of studio, in order to be viewed by the jury. Please make sure to use the provided competition font and templates.

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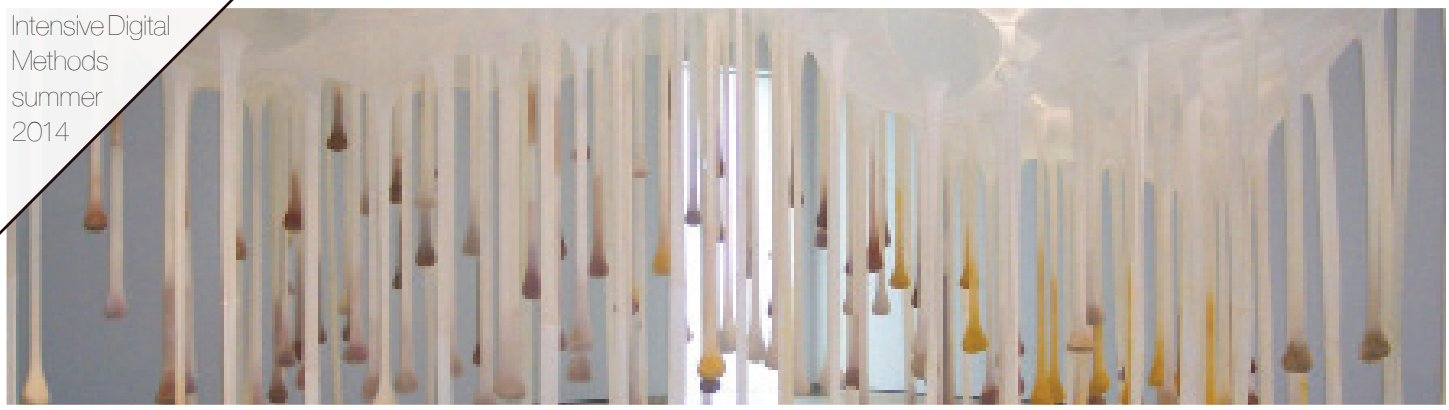

SCHEDULE

Monday, August 18, 2014 / 9:00 AM – 5:00 PM

9:00 – 12:00 IT Orientation / Network Navigation / Software Download & Preparation
12:00 – 1:00 LUNCH
1:00 – 5:00 Software Capabilities (slide presentation)
Part 1: Maya Orientation & Warm Up [eb/dw]
Part 2: Precision Modeling: 3D knot typology [dw]

- Basic Interface orientation, Keys/shortcuts, use of Hotbox
- Layer Management / Model Organization
- Modifying polygon primitive solids
- Tools for manipulation/sculpting
- Basic editing of Mesh Commands
- Editing / Adjusting / Extracting

Assignment: Knot/ Sculpture Topology, Part A: 3d model a work of sculpture from given references
//deliverable 1-3 renders/screen shots organized on template given (.pdf format)

Tuesday, August 19, 2014 / 9:00 AM – 5:00 PM

9:00 – 1:00 Part 1: Maya & Grasshopper Workflow [dw]

- Maya to Rhino to Grasshopper
- Workflow & Introduction to Grasshopper
- Mesh Data Construction & Box Morph Component

1:00 – 2:00 Lunch
2:00 – 5:00 Part 2: Maya Advanced Polygon / Subdivision Modeling [eb]

- Advanced Selection Methods
- Polygon Count Economy
- Articulation of Surface & Texture

Part 3: Basic Make 2D Drawings / Illustrator Import [dw]

- Plan / Section
- Axonometric / Perspective Generation
- Introduction to Rhino / Vray Rendering
- Illustrator Input – line weights / types

Assignment: Deep Sea Creatures, Part B: continue to edit/detail/aperture your
//deliverable 1-4 renders+drawing organized on template given (.pdf format)

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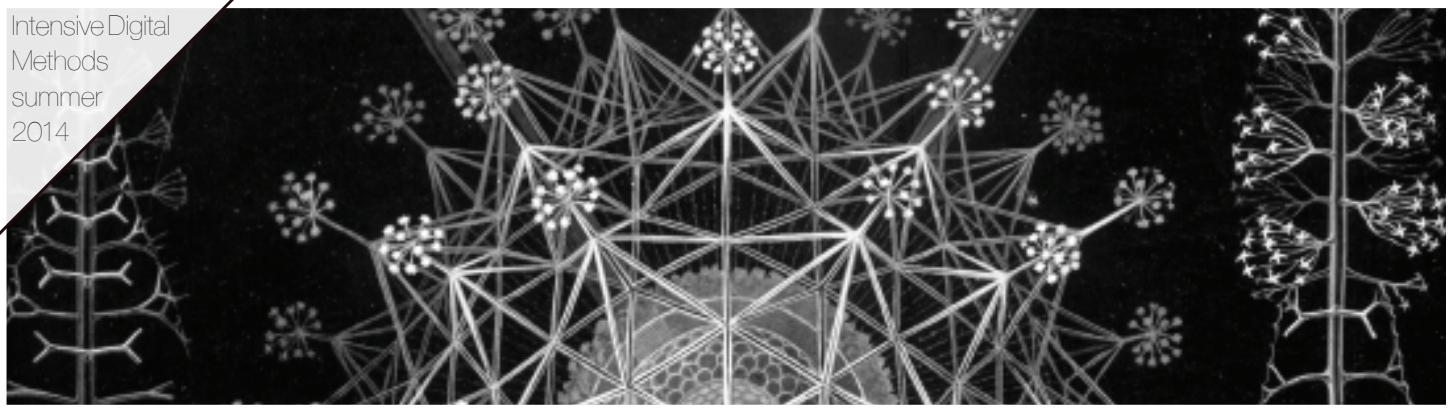
Intensive Digital Methods summer 2014



SCHEDULE

Wednesday, August 20, 2014 / 9:00 AM – 5:00 PM

9:00 – 1:00 Part 1: Dynamic Geometry & Simulation [eb]

- nCloth + nDynamics
- nCloth inflatable volumetric model
- nCloth surface catenary model

1:00 – 2:00 Lunch

2:00 – 5:00 Part 2: Dynamic Geometry & Simulation [eb]

- Vector Fields in Grasshopper
- Hair Dynamics in Maya

Part 3: Maya output [dw]

- Material Rendering
- Output Drawings
- Workflow through Rhino/Illustrator

Assignment: Part C: continue to edit/details/apertures . Consider revisiting even initial massing studies to incorporate simulation techniques and methods. First concept model of PS1 Pavilion. //deliverable Board 1 completed (.pdf format)

Thursday, August 21, 2014 / 9:00 AM – 5:00 PM

9:00 – 12:00 Part 1: Python Script Workshop / Demonstration 1 [dw]

- Introduction to Python
- Mathematical construction of Curves and Surfaces

12:00 – 1:00 Lunch

2:00 – 5:00 Part 2: Python Script & Grasshopper Workshop / Demonstration 2 [eb]

- Mesh Navigation and Manipulation

Part 3: Maxwell Render

- Interface introduction
- Basic Material & Lights

Assignment: Part D: Concept Proposal for the PS1 Pavilion PPD Competition. //deliverable Boards 1 and 2 - organized on template given (.pdf format) We will view each proposal. Please upload pdf to Juno

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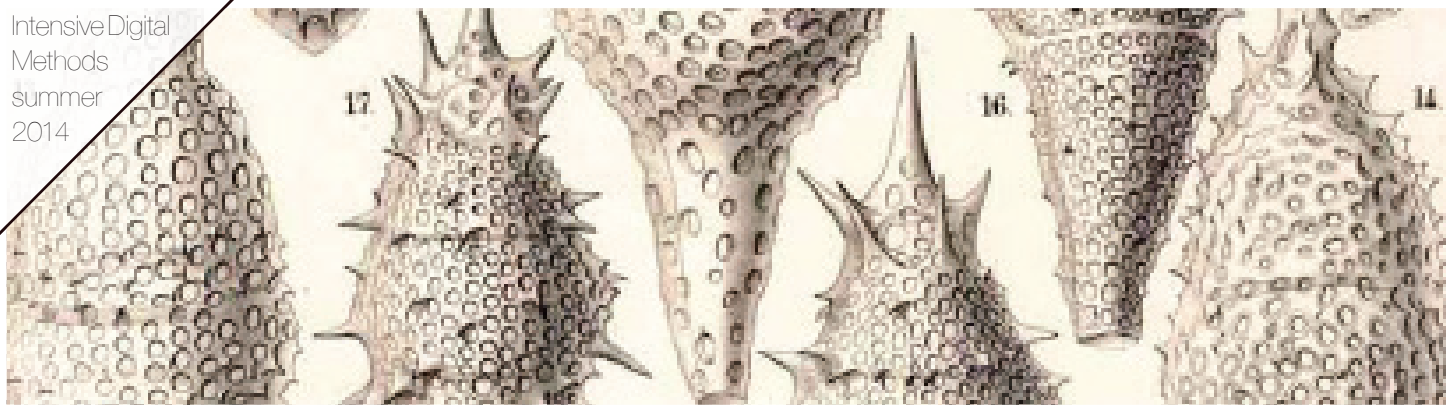

SCHEDULE

Friday, August 22, 2014 / 9:00 AM – 2:00 PM

9:00 – 2:00 Advanced Tricks & Tips [eb]

- Isosurfacing & Sectioning for Medical Imaging Software
- Millipede & Other Plugins for Grasshopper
- Q&A Session

Assignment: Continue working on Competition entry

DEADLINE: WEDNESDAY AUGUST 27th (print boards and pin-up)