Department of Landscape Architecture
School of Design
University of Pennsylvania
Spring 15, LARP 542-001 & 542-002
Instructor: Keith VanDerSys

Media II: Digital Media (Fundamentals of 3d Modeling)

LARP542 continues the curricular emphasis on visual communication and design. The course provides an intensive hands-on inquiry into the exploration, enhancement, and extrapolation of digital media and the subsequent modes of conceptual, organizational, and formal expression. Through a series of working labs, students are introduced to various software applications and numerically driven techniques as a means to learn rigorous surface construction and control through form processing. Instead of understanding computer modeling simply as an end, this course considers digital media as a compulsory tool in design processes.

The course will provide students with the necessary digital modeling techniques to explore and examine precision surface profiles and landforming strategies. These models provide a basis to speculate on what processes and programs might be engendered or instigated. Through an emphasis on ***temporal and relational techniques***, Media II addresses the increasing recognition that ***dynamic processes*** are explicit components of analysis and generation.

Design is increasingly dependent on the collection and control of organized information. Cheap computing and the pervasiveness of data have led to an increased ability to analyze and visualize complex physical organizations and processes. The result is that the description of a terrain is no longer limited to mapping spatial structure or perceptible features alone, as objects and surfaces, but also includes ***topological properties***, which chart relationships among a variety of processes that flow through the landscape. Generated from data and parametric relationships, today's geometric organizations are imbued with information in ways not previously possible.

Course Objectives

This course provides a platform to teach a range of computer skills that are essential for all designers, not just those interested in production of complex forms. It will address appropriate strategies for managing and converting data and methods for streamlining workflow through various computer applications.

As in analog media, ***craft*** is paramount in digital media. Information is not limited by scale or medium. As such, digital models not only need to look good, they need to perform well. Poorly executed and managed models flatten their potential to mere image. An intelligent computational strategy allows for an endless expansion of digital information to be expressed through material outputs.

Course Structure

The class will meet during one action-packed session per week. Each session will include a demonstration of relevant techniques, precedents, and readings (available online as a PDF). In-class laboratory time, with expert guidance, will be provided. Most time will be spent, however, working on developing your familiarity and skills within the three-dimensional modeling environment. Lab time will also be provided outside of class meetings. This time will be set with teaching assistants and will be posted online.

The course will use a series of short skill-based exercises to introduce concepts, tools, and techniques. Exercises offer an opportunity to attempt different approaches and methods.

Students will work individually throughout the semester.

Assignments

Modeling assignments will emphasize the precise collection, assembly, and refinement of data across a variety of software platforms. Assignments are due on a weekly basis. The short assignments will culminate with a half-semester exploratory project. All assignments must be submitted digitally.

Course readings provide a basis for understanding the larger intellectual implications of crafting digitally conceptualized environments. Students are required to submit a 200 word summary of each required reading. All summaries must be submitted digitally.

Seminar Software

Rhino will be the primary modeling platform. Associated plug-ins of Grasshopper, Rhino Terrain, V-ray, and T-Splines will help extend the toolset. GIS will facilitate the collection of extent data. The Adobe CS6 Creative Suite will also be used for documenting and expressing modeling processes through static and time-based visualizations.

Grading

Class attendance and punctuality is mandatory, as much of the content involves hands-on demonstrations. More than three absences will result in a reduced grade. Late submittals will be penalized 1/3 grade per day.

The weekly assignments comprising the first part of the semester will account for 30% of the course grade. In the latter animation projects, you will work towards creating a composite animation, which will account for 60% of the course grade. Course participation constitutes 10%. Projects will be presented in class, for review, during the seventh week and on the final day of meeting. A digital copy of both weekly pieces and final compilation will be required for final grade assignment.

A+ (4.0) = Excellent; exceptional work quality + no missed or late assignments
A (4.0) = Very Good; above average work quality + no missed or late assignments
A- (3.7) = Good; above average work quality + a missed or late assignment
B+ (3.3) = Satisfactory; average work quality + a missed or late assignment
B (3.0) = Marginal; average work quality + missed or late assignment(s)

B- (2.7) = Unsatisfactory; below average work quality + missed or late assignment(s)
C+ (2.3) = Very poor; poor quality + missed or late assignments
C (2.0) = Unacceptable; poor quality + missed or late assignments
C- (1.7) = Unacceptable; poor work quality + missed or late assignments
F (0.0) = Unacceptable; poor work quality + missed or late assignments

Cheating is a serious academic offense and grounds for course failure and/ or school expulsion. Cheating is the use or attempted use of another's material as your own. This includes any idea, image, drawing, or text that is taken from another source, such as an article or online. Any use of ideas or materials must be properly credited by citing the author(s) and source(s). Refer to the *Code of Academic Integrity* for details:
http://www.upenn.edu/academicintegrity/ai_codeofacademicintegrity.html

Pre-requisites

Each core course is a pre-requisite of the one that numerically follows it. The Department of Landscape Architecture will drop a student from a core Studio, Media or Workshop course if the student has not successfully completed the course in the previous semester or resolved an "Incomplete" grade prior to the start of the subsequent semester, unless special circumstances prevail.

Technical Assistants

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PRELIMINARY SCHEDULE

Week 1 (Jan. 15)	ORIENTATION Course overview Orientation & Interface	
Week 2 (Jan. 22)	DIGITAL TERRAINS Computational Geometry Points, Lines, & Surfaces	*(SCHENK-WOODMAN DUE)*
Week 3 (Jan. 29)	NETWORKED TERRAINS Data terrains GIS search indices Assignment #1 – Orthographic Surfaces; Reading #1—Pedagogical Foundations: Deploying Digital Techniques in Design/ research Practice, Walliss et al.	
Week 4 (Feb. 5)	EXTENSIVE TERRAINS Topological terrains Rhino Terrain Assignment #2 – Networked Terrains	
Week 5 (Feb. 12)	PARAMETRIC TERRAINS Iterative surfaces Digital sketching Assignment #3 – Extensive Terrains	*(PLAYSCAPE ASSIGNED)*
Week 6 (Feb. 19)	IN-FORMED TERRAINS Trees, Lists, & Maths Assignment #4 – Parametric Terrains; Reading #2—Digital Culture of Landscape Architecture, Picon	
Week 7 (Feb. 26)	IN-FORMED TERRAINS II Slopes & aspects Sorting & sampling Assignment #5a – In-formed Terrains	
Week 8 (Mar. 5)	PLIANT TERRAINS Land molding T-Splines Assignment #5b– In-formed Terrains II	*(502 MID-REVIEW)*
Week 9 (Mar. 12)	SPRING BREAK	*(NO CLASS!)*
Week 10 (Mar. 19)	PLAYSCAPE INTERIM Review	*(PLAYSCAPE MID-REVIEW)*

Week 11	HYBRID IMAGE	
(Mar. 26)	Atmospheric notations	
	Playscape Development	
	Reading #3—Structuring Relations: From Montage to Model in Composite Imaging, M'Closkey	
Week 12	MOVEMENT & MEASURE	
(Apr. 2)	Temporal captures	
	AfterEffects & Bongo	
	Playscape Development	
Week 13	PLAYSCAPE INTERIM	*(PLAYSCAPE REVIEW)*
(Apr. 9)	Playscape Development	
Week 14	WORKING SESSION	
(Apr. 16)	Playscape Development	
Week 15	FINAL	*(PLAYSCAPE FINAL!)*
(Apr. 23)	Review	

FINAL SUBMITTAL: CD's with all Playscape Files must be submitted at the Final Presentation to pass this course.