

Course Syllabus – Subject to Change

ARCHITECTURE 98 – Digital Tools For Architects

Spring 2017, Location: Wurster Hall

STUDENT INSTRUCTORS:

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Tiange Wang (Isabel)	Architecture Student (Junior) Isabel.tg.wang@berkeley.edu
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SUPERVISOR:

Andrew Atwood	Assistant Professor of Architecture College of Environmental Design 364 Wurster Hall #1800 atwood@berkeley.edu
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COURSE DESCRIPTION:

Architecture 98 is a DeCal class aims to offer a platform to discuss architectural digital tools and establish students' proficiency in manipulating these tools to their design intentions.

This course is offered as an introduction to digital tools that would further students' abilities to showcase design ideas. While it is quite impossible to cover every software program, every piece of hardware, and everything digital in between, this class attempts to introduce the critical basis of digital design through teaching the key software used in architectural representation: Rhino, Grasshopper, Revit, V-ray. It is a hands-on class that requires active participation and, in addition to class time, self-directed inquiry into the subject materials. Proficiency in using these tools in a constructive and inspiring way is always achieved by frequent practice and by the need and desire to externalize, communicate and produce. We must do in order to understand the why and do more. (1 credit)

COURSE LEARNING OBJECTIVES

Through the semester-long course, students will gain critical knowledge of and key skills in using digital modeling software to create innovative and aesthetic representations of architectural structures. Through in-depth inquiries into some of the most powerful functions of popular digital modeling software, students will be able to enrich their vocabulary in articulating architectural design ideas.

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Students will also develop creative approaches to investigate individual design projects, once they are able to manipulate these digital languages to meet their design goals.

In addition to the technical skills, students will be able to keep developing their digital skills independently. By the end of class, they should be comfortable using and exploring these tools. The course will prompt students to think about the roles of digital tools in academic and professional practice, architectural design history, and outside the field of architecture. Students will be able to incorporate design philosophies and recreate digital representation trends.

EVALUATION ATTENDANCE GRADING

Grades are based on attendance and either homework or a final portfolio. In the first class, students have the option of choosing between submitting homework throughout the semester or uploading a final portfolio by Friday of RRR week. Attendance counts 60% towards the final grade and homework/portfolio counts the other 40%.

The workload of this course will be fairly light since you can incorporate the things you learn in this class with your studio and produce work for both the course at same time. The assumed work load is 2 hours per week.

Pass: Attending at least 60% of the lectures (which means 8 classes out of 13 in this semester) and submitting all the required homework or the final portfolio by Friday of RRR week.

No Pass: Absent from more than 40% of the lectures (which means 5 classes out of 13 in this semester).

ASSIGNMENTS

Small projects will be assigned at the end of each topic. Projects will require use of skills demonstrated in class, and are designed to develop students' ability to represent and design. Students are encouraged to challenge the scope of the assignment. The projects will be evaluated on quality of representation and demonstration of skills learnt in lecture/readings. If an assignment does not meet a passing grade, the student may be asked to complete the project according to feedback within two weeks to pass the course. Submission will be through gdrive/box.

A simple portfolio of the projects will be required at the end of RRR week.

Deliverables format:

- upload original file in .pdf format
- 11x17 sized (# of pages as required)
- Potential of other files e.g. animation

Homework is assigned at the end of each class. Students are responsible to finish the tasks on time. Late assignments will be marked down 10% of the final grade of the assignments each day past due. No assignments will be accepted one week following the due date. Computer failure will not be an acceptable excuse for late or missing assignments. Students are responsible for making backups copies of your work, including drafts.

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FINAL PORTFOLIO

The final portfolio should consists of all the previously done classwork as well as homework, number of pages as required. Please make sure that the portfolio includes a cover sheet with your name and a table of contents that lists each project. Instructors are opened to other formats of portfolio e.g. animation, etc.

SOFTWARE

This Course will focuses on using: Rhinoceros 5, T-Spline & Grasshopper (Rhino Plugins), Revit 2016, Adobe Suite (Photoshop & Illustrator) & V-ray. The above software are equipped in the PCs in the computer lab.

CLASS SCHEDULE

Week (Date)	Topics	Instructor(s)
1 (Jan 19 th)	Introduction, Course Organization, General Overview of Course	All
2 (Jan 26 th)	Rhinoceros T-Spline Introduction	Isabel
3 (Feb 2 nd)	Rhinoceros Paneling Tools	Isabel
4 (Feb 9 th)	Introduction to Grasshopper	Anthony
5 (Feb 16 th)	Grasshopper drilling 1	Fei
6 (Feb 23 th)	Grasshopper drilling 2: Attractors	Fei
7 (Mar 2 nd)	Rhino Code and pepakura	Isabel
8 (Mar 9 th)	Revit Basics: Introduction to BIM system in practice / Revit interface / Introduction to Revit Family	Asami

9 (Mar 16 th)	Revit Basics #2: Building a full model	Asami
10 (Mar 30 st)	Spring Break	
11 (Apr 6 th)	Introduction to Vray & Photo editing in Photoshop + Illustrator	Anthony
12 (Apr 13 th)	Vray animation / Photoshop Animation	Fei
13 (Apr 20 st)	How to do a realistic render	Fei
14 (Apr 27 th)	How to do an artistic render + Course Conclusion	Anthony

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Reading List

Week 4: Introduction to Grasshopper

AAD_Algorithms-Aided Design: Parametric Strategies Using Grasshopper, Arturo Tedeschi, 2015, P.33-69

Week 5: Grasshopper Drilling: Louver System

Week 6: Grasshopper Drilling: Attractor Points/ Lines

HOT TO COLD: An Odyssey of Architectural Adaptation, Bjarke Ingels, 2015, P. 586-597 (Example)

AAD_Algorithms-Aided Design: Parametric Strategies Using Grasshopper, Arturo Tedeschi, 2015, P.112-121

Week 11: Introduction to Vray & Photo Editing in Photoshop + Illustrator

Digital Tools for Architects, Grant Adams, 2014, P.27-57, 169-199

Week 13: How to do realistic render

GA Document International 2015, A.D.A EDITA Tokyo., Ltd, 2015, P.66-71, 114-121, 160-167 (Example)

Week 14: How to do Artistic Renderings

El Croquis 184: Amid Cero9/mos, EL CROQUIS S.L, 2016, P.140-154, 170-185, 212-241 (Example)

GA Document International 2015, A.D.A EDITA Tokyo., Ltd, 2015, P. 26-31, 108-113 (Example)