Core 3D Modeling   **Spring 2021**
T/TH 9:30-12

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Catalog Course Description: Introduction to using software to create 3D models and computer animations. Students will be given a comprehensive introduction to the various components including modeling, animating, rendering and lighting.

Course Structure: Through specific problems we will move from the contained object to the conditions of site, space, and the use of digital. At the same time, we will be looking at the language embedded within different digital tools that could allow for original points of view and that might create provocative objects that respond to the conditions of virtual space and the ways that we get information into that space and back out into the physical world.

We are going to approach our research as a creative activity where tools and methods are used to generate unexpected forms. We will study the qualities of virtual space, and its systems and processes, as containing ideas that might be integrated into the things that we make; and we will try to locate ways to think through the language of the digital to create new objects that respond to different technologies.

The course will be loosely divided into three sections: getting stuff into virtual space; modifying and creating *in* virtual space; and getting stuff out of virtual space. We will figure out how to translate a flat image into three dimensions and how to capture and scan objects in physical space. We will learn and investigate various tools for modifying and transforming objects in virtual space; including ways of analyzing and organizing models. Finally, we will discuss methods of outputting digital models; testing the attributes of different machines for the physical production of virtual models.

Course Objectives: To understand and gain confidence in navigating and modeling three-dimensional space and objects, as well as recognizing how three-dimensional information can get into and out of virtual space. Our goal is to find the place where personal views intersect with technological language and ideas, and to use this territory as ground from which to generate unique solutions to both virtual and physical design problems. You should allow your thoughts and research to direct you towards the best possible means of relaying your concept to a public sphere. This should lead to intense experimentation with the virtual and physical attributes and problems of different programs and mediums, and further into consideration of how one generates these complex processes.

As you research different programs and possibilities, you should also be learning how to better research ideas. It is expected that you will generate proposals, give yourself a number of possible approaches, test these possibilities, and develop the approach of your choosing.

Alongside the technical experimentation required in the course, one should come away with a more developed critical vocabulary. We will discuss and try to expand the way that we respond to and interpret problems in conjunction with our expanding the possibilities of modeling in virtual and physical space.

Readings: This class will consist of lecture, discussion, and physical capture, modeling and outputting. I expect you to give the same energy to reading and discussion that you give to your digital work.

Evaluation
-Grading will be assessed by the following: completion and evaluation of research and assignments, focus and participation during class, attendance.

Completion and evaluation of assignments: A completion date will be given for all assignments so that we may have group discussions. It is expected that as much as possible will be done to bring your work to a high resolution for these events. This includes any necessary time outside of class. (60% of total grade)

Focus and participation during class; Exploration and inventiveness outside of class: It is expected that you will come to class attentive and ready to work. The time in class is imperative to understanding the material covered and your focus is essential in generating helpful discussion. Participation in class discussion will be considered– particularly in the case of borderline grades. In addition, you will be asked to find your own methods to solving problems posed in the class- any contribution towards contributing to class knowledge and group teaching will count towards your participation grade. Each of you will be asked to share a presentation on a modeling process that you found to have interesting possibilities. (30%)

Attendance: After three absences your grade will be lowered by one letter grade per absence. Tardiness over thirty minutes will count as a half-day absence. If you miss class and are out of contact for more than 2 weeks I will assume that you have dropped the class. (10%)

Rubric

A- -completion of all assignments
   -less than three absences
   -evidence of care and creative solutions in the finished work
   -analytical and observational participation in group discussion
   -attentiveness during class and openness to criticism

B   -completion of all assignments
   -less than three absences
   -evidence of effort given to finished work
   -participation in group critiques
   -attentiveness during class

C   -missing completion of one assignment
   -absence of more than three classes
   -evidence of effort given to finished work
   -lack of participation in group discussions
   -leaves class early on a regular basis

D   -missing more than one assignment
   -absent more than four classes
   -lack of effort given to finished work
   -no participation in group discussions
   -comes late and/or leaves class early on a regular basis

Tentative Schedule

T 2/16	Introduction to 3D modeling, getting used to navigating the space/ xyz axis and perspective.
TH 2/18	Watch video-building an object from an image.
T 2/23	Present models to group. Brief introduction to animation
TH 2/25	Turn in models. Watch video-navigating and modeling in Blender
T 3/2	Discuss modeling in Blender
TH 3/4	Turn in short animation. Watch tutorials by Blender Guru
T 3/9	Discuss ways of manipulating models. intersection, poly reduction, perforation
TH 3/11	Turn in donut and cup models. Watch video, part 2 modeling in Blender
T 3/16	Discuss models. Discuss additional methods for manipulating digital models.
TH 3/18	Turn in intersection sculpture and brief comment on decision making. Watch poly-reduction video

T 3/23	Discuss modifiers in Blender and discuss perforation techniques.
TH 3/25	Turn in poly-reduction sculpture and brief comment on decision making.
T 3/30	Intro to animation in Blender.
TH 4/1	Turn in perforation sculpture. Watch video on animation
T 4/6	More on animation in Blender
Th 4/8	Personal meetings. Watch video on lights, camera, render.
T 4/13	Turn in Blender animation. Present to group.
TH 4/15	Personal meetings. Watch video on Blender physics.
T 4/20	Discuss physics, particle systems
TH 4/22	Turn in Modify tutorial. Watch videos on particles.
T 4/27	Discuss rendering and outputting in Blender
TH 4/29	Personal meetings. Watch video on textures and UV mapping.
T 5/4	Turn in 3d Text. Present to group.
TH 5/6	Watch video on world texturing
T 5/11	Personal meetings. Work day
TH 5/13	Personal meetings. Work day
T 5/18	Turn in Final Project. Present final projects.