

Digital Modeling & Fabrication

DESOB 3024 Spring 2009
Monday / Wednesday 6-9pm
Room 1255, Sullivan

Instructor
Chris Reilly
creilly@saic.edu
(312) 629-6688

Course Description

Digital Modeling and Fabrication is a 3-credit course dedicated to the use of digital modeling methods and corresponding digital output techniques that are used in the production of physical objects.

This course will focus mainly on a 3D modeling software package called Rhino[ceros]*, which offers many standard 3D modeling tools, some of which are optimized nicely for the modeling considerations that must be taken when working towards physical output.

3D modeling in any program is a skill that must be learned--with lots of practice--over time. Just like hand-drawing or sculpting, it can take months or even years to develop proficiency. With that in mind, this class will focus on developing a solid foundation of basic tools and techniques that can be expanded on in later semesters.

For the first half of the semester, our class time will be spent on the instructor's demonstration of various techniques and workflows in Rhino, with students following along.

For the second half, each student will be assigned projects based on individual skill level, and will work independently and with help of the instructor. More advanced students will be challenged with projects that are more complex. Students may also bring their own project and work on the 3D modeling aspect of their project with the instructor.

Rhinoceros, or any other 3D modeling software for that matter, is almost impossible to master in a single semester. The goal of this course is to get students to be as comfortable with the software as possible so that he/she can further explore and improve on their own even after the course's end.

*Currently, Rhino is supported only as a Windows-based software. Students registering for this class must have a MacBook Pro with at least a 1.83GHz processor, 2GB RAM and an 80GB hard drive. (PC laptops will **NOT** be supported!)

Students registering for this class are charged a \$200 per semester technology fee. The fee covers installation and support of both Mac OSX and Windows XP operating systems, Rhino and other relevant software on a qualifying laptop.

Installing the dual-boot software template requires erasing your hard drive, including all of your data. Please be sure to back up all of your data before your templating session with the CRIT Help Desk.

All software/laptop issues should be addressed to the CRIT Help Desk:
<https://startit.artic.edu/kb/support/student.html>

CRIT Help Desk Locations

37 S. Wabash	112 S. Michigan Ave.
Room 401	Room 905
Monday - Friday	Monday - Friday
8:30 a.m. - 5 p.m.	8:30 a.m. - 5 p.m.

312-345-3535
crithelpdesk@artic.edu

Course Objectives

- Develop fluent use of Rhino/basic 3D modeling techniques.
- Use Rhino modeling as a pathway to physical output techniques (ie, Rapid Prototype / Laser cutter, etc.).
- Use Rhino as a visualization/presentation tool (eg, 3D rendering, curve export to Illustrator).
- Introductions to CNC machining / 3D scanning.

Course Schedule

Week 1 (Jan 26/28) : Basic Training

Please arrange to have your laptop templated at the CRIT Help Desk before the second class session.

We will discuss basics of the dual-boot template, best-practice info such as backups, troubleshooting and where to ask for laptop help.

Wk 2-7 : HARDCORE RHINO training

Students will be put in a situation where he/she needs to understand the workings of Rhino and master the techniques (as much as, as quickly as possible).

Each student should be able to model in 3D basic shapes and objects.

Wk 8-9 : Prototyping in RP & 2-3 Presentations/class

Based on the skills developed from the first phase, students will produce a physical object using a RP machine.

Each student should understand the RP process and its requirements in rhino modeling

Wk 10-13 : Early final project & 2-3 Presentations/class

In order to avoid the end of the semester final crunch for multiple classes you have, we will finish our final projects early. (Further details for the final projects will be given in the future)

Wk 14-15 : Rendering tutorials & 2-3 Presentations/class

During the last part of the semester, we will cover other important techniques such as rendering your 3d model to create life-like images for presentation.

Class Requirements

In addition to the general requirements outlined below, each student will be responsible for four main assignments over the course of the semester, as follows:

- (3) Ten-minute presentations in front of the class outlining the details of one Rhino command. Presentations will be conducted on a rotating schedule, with 2-3 students presenting in a class period. Students must research ahead of time the parameters of the command and what it does, give examples of situations of how/when it would be useful, and show examples of a Rhino file where the command has been used.
- One final project, which will be due mid-semester. This will hopefully give you a chance to spend more time on the final for this class, as you will not have to juggle final projects from other studios simultaneously. Details TBA.

Attendance

You will not receive credit if you have 6 or more absences (since we meet twice a week); or, you are consistently late or leave early (three tardies will be counted as one absence).

Etiquette

Cell phone use, texting, instant messaging, unrelated web-surfing and work not relevant to this course are all completely unacceptable in class. Every student must work to maintain the professional atmosphere that a very expensive college-level course such as this deserves.

Work Ethic

In order to gain credit for the class it is vital that you make productive use of class time; that you are prepared for class; that you participate adequately in class activities, discussions and critiques; and that you complete the assigned work.

Communication

The instructor's contact number and email address are listed on the front page of this syllabus. Please make every effort to contact the instructor if you are ill or expect to miss a class. It is your responsibility to catch up with any work that you miss due to absence.