

Issued JAN.07.2013



## DESCRIPTION

Drawing instruments and representational techniques can be both enabling and restrictive to the design process. As one masters a particular instrument/technique one is able to surpass initial restrictions induced by the unfamiliar skill and begin to explore new possibilities arising from the technique itself. Computers and computer applications used in the design professions require a comprehensive understanding and almost intuitive use of the software in order to fully enable a fledging designer's creativity in the early stages of the design process. In addition to these new skills, students must become familiar with the conventions of representation; plans, sections, perspectives, line weights, annotations, etc. This course will focus 3D modeling and representational conventions as well as computer history and computational influences on design, computational and operational logic, and an introduction/overview to the fundamentals of computational thinking.

Assignment 1 asks you to select a hand-sized found object created by a **natural process**. The objects should (and will) have an inherent complexity but should still have a discernible logic. **To help you select your object you MUST bring 3 CONSIDERED natural objects to your FIRST lab with you;** your TA will help you choose a suitable object, help achieve applicable challenges between students, and help insure diversity of explorations. Each student should have their own object to model from and may not share their object with another student. More than one 'type' of object can exist in the lab providing that the object(s) have enough variation and differences.

As a natural object, they will have attributes that are **highly immeasurable** and will require the students to creatively interpret and abstract the subtleties of the object as a 'digital sketch' using 3D modeling techniques. The 3D models should **not** strive to be exact replicas of the natural object (this would be quite impossible); rather the 3D modeling software should facilitate creative explorations and interpretations conveying relevant formal and morphological characteristics. From this 3D digital model, 2D drawing conventions (plans, sections, elevations) will be extracted to further explain, filter, and document the complexity of the 3D object.

Successful projects will demonstrate an expertise in relevant 3D surface modeling techniques in addition to critical thinking for how to interpret a 3D object within the digital environment. With hard work and determination it will provide the fundamental skills necessary for you to successfully complete the first half of this course.

## OBJECTIVES

Upon completing this assignment students should:

- Be able to creatively apply 3D modeling techniques to facilitate an interpretation of a found natural object.
- Be able to successfully navigate a 3D modeling environment (Rhino) and utilize orthographic and perspectival views.
- Be able to coordinate uses of geometry types (points, curves, surfaces, solids, and meshes) to produce a 3D model.
- Be able to utilize commands, cameras, and viewport settings to produce 3D and 2D technical documentation.
- Be able to manage model information through the use of object properties and layer information.
- Be able to manage files and rework models to operate within appropriate file sizes.
- Have a sufficient understanding of image resolution (dots per inch/cm) and pixels.
- Have a basic understanding and ability of generating various image files and print.
- Have an ability to present a select object in three dimensional perspectives, line drawings, and renders
- Have a basic understanding of image manipulation in Photoshop.
- Have a basic understanding of image layout with InDesign.
- Have the ability to manipulate technical drawing attributes, such as line type and weight in Rhino and Illustrator.
- Have a basic understanding and ability to render three dimensional models and save as a raster/image file

## SUBMISSION REQUIREMENTS

- 1 – 24 x 36 (landscape) Printed Page. 1 - PDF Digital Copy (300 dpi) and 1 - JPG Digital Copy (200 dpi):
  - 1 photograph of the original found object
  - 3 perspective/renders (300 dpi at full-size) with shadows (1 'aerial' and 2 'abstract spatial')
  - 2 elevation drawing/render composites (line drawings with line-weight layered on top of shaded rendered views.)
  - 2 shaded views/diagrams to communicate model construction.
  - 2 section drawings
  - 1 paragraph describing model construction techniques used in your project.
  - Title Block including, 1. *Your Name*, 2. *TA's Name*, 3. *Course Number + Section*
  - Labels for all drawings

### PROGRESS SUBMISSION 01

- 1 Photograph of found object
- 3 'screen captures' of your 3D Rhino Model (Shaded view!)
  - 1 Perspective
  - 1 Top view
  - 1 Side view
- **Digital files to be uploaded to Arch 223 shared Dropbox Folder**
- Filenames:
  - ARCH223\_F13\_LastnameFirstname\_1.jpg
  - ARCH223\_F13\_LastnameFirstname\_2.jpg
  - ARCH223\_F13\_LastnameFirstname\_3.jpg

### PROGRESS SUBMISSION 02

- DRAFT LAYOUT 24 x 36, Digital JPG (200 DPI)
- Include work-in-progress imagery of *ALL SUBMISSION REQUIREMENTS*
- **Digital files to be uploaded to Arch 223 shared Dropbox Folder.**
- Filenames:
  - ARCH223\_F12\_LastnameFirstname.pdf
  - ARCH223\_F12\_LastnameFirstname.jpg

### FINAL SUBMISSION

- **Final 24 x 36 Printed Layout. PRINT on quality paper.** Pin-Up in Main Gallery on Due Date
- **Final 24 x 36 Digital Copy in 2 formats:** PDF Digital Copy (300 dpi) and 1 - JPG Digital Copy (200 dpi);
- **Digital files to be uploaded to Arch 223 shared Dropbox Folder.**
- Filenames:
  - ARCH223\_F12\_LastnameFirstname.pdf
  - ARCH223\_F12\_LastnameFirstname.jpg

### Questions to ask yourself before the final submission...

- *Does my 3D model concept display creative thinking?*
- *Does my 3D model show excellent technical craft and detail?*
- *Does my submission contain **ALL** required drawings?*
- *Does my layout clearly show all information with hierarchy and points of emphasis?*
- *Do my renderings look high resolution with clean lighting and color?*
- *Do my line drawings look clear and crisp on screen and when printed?*
- *Are all my drawings labeled with the appropriate font size?*