Course Policies

Attendance
Class will meet two times a week, on M/W, or Tu/F. Class attendance and completion of all assignments are mandatory. Four absences will constitute an automatic failure, three will result in a full letter grade penalty for the course, and two may result in a partial grade deduction.

Grading
In accordance with Northeastern School of Architecture grading policy, grades will be distributed according to the scale found online here.

Assignment grade breakdown is as follows:
A1: 30%
A2: 10%
A3: 25%
A4: 25%
Readings, effort, attendance and class participation: 10%

Recommended Texts
There is one book that is required for this course and several that are recommended:

Required: Architectural Graphics Ching

Recommended: Basics: Technical Drawing Bielefeld + Skiba

Recommended: Basics: Modelbuilding Schilling

Recommended: Basics: Design Ideas Bielefeld

Resources
The student is responsible for completing each assignment in a timely manner and is also responsible for the output of the work and the costs involved. The instructors rely on eMail as a form of communication with the class. Important information about class events, assignment hand-ins, and general queries will be handled in this manner. As such, the student is required to check their eMail accounts at least once a day for such information. In addition, we will be using this web site to post items such as assignment PDF’s, links to readings and other items of interest. Students should be sure to keep track of information as it is posted to the site.

In addition to course readings, you will need to become familiar with several on-line sources for information on both computer-aided design and architecture. The internet provides many directories and resources that can both inform you and answer questions in times of need. A select few of these will be linked to on this web site.

Use of Online Resources
All research done for the course should be through the various libraries that Boston has to offer. Any research done on the internet—unless explicitly encouraged by the instructor—will not be accepted in this course. Also, Instant Messaging (IM) during class time will not be tolerated, nor will viewing any kind of media that falls outside the content of the class. The time spent in class is intensive and should be spent on class assignments. If the instructor observes any IM sessions, or the like, in class, the student will initially be warned, any further reprimand will result in a grade deduction for that particular assignment. In order to facilitate this, each session will be instructed to disable their wireless connection to the NUWave system 15 minutes into class, or after an introductory lecture.
Software
Students are responsible for purchasing the Adobe Creative Suite, Parallels, Vista and AutoCAD (refer to the link here) and for loading the software onto their computers prior to the first week of the semester.

Digital Storage
Any information that you create on the computer is susceptible to erasure. It is therefore in the students best interest to invest in at least two methods of backup. Northeastern's MyFiles offers 2 GB for this use. In addition, the purchase of a USB flash drive for the storage of digital files, and transfer to the printers is recommended. Image files can be large, so the more storage space on the drive, the better. iPods can also be set to operate as external drives. Information on how to do this is here.

It is also advisable to keep a backup copy of your files on a CD or DVD. Loss of information relating to a project due to lack of backup will not be considered an acceptable excuse.

Printing
For each assignment, you will be required to submit both paper and digital files. This course relies on a number of output options for final hand-in, but also as an ongoing requirement during the assignments. The student is responsible for the printing of your work and the costs involved. The following are the available options for printing:

Small inkject printers are a good option for day-to-day prints. Sharing the cost of a printer with fellow classmates can be a cost-effective solution to output.

There is an 11 x 17 color laser in the Ruggles Studio. You may use it on a first come, first serve basis. See the instructions here for printing information.

Northeastern University's School of Architecture partners with Service Point for large scale printing needs. Click here for more information and instructions.

File Naming
You will be required to submit files along with prints for each assignment. These files should be named as follows: assignment number-lastname.filetype (for example: 01-yourname.pdf). Files named incorrectly will not be accepted.

Academic Honesty
Northeastern University is committed to the principles of intellectual honesty and integrity. All members of the Northeastern community are expected to maintain complete honesty in all academic work, presenting only that which is their own work in tests and assignments. If you have any questions regarding proper attribution of the work of others, contact your professor prior to submitting work for evaluation. More information is available here.
1. **Line variation**: In one page do parallel lines from light to dark using the same pencil controlling hand pressure. Also do another set of parallel lines, each line going from light to dark.

2. **Diameter circle on a page**: Explain use of construction lines. Make squares and division lines as construction lines, then draw circles within using construction lines as guides to proportion circle correctly.

3. **Line Distortion / Contour Profile**: Blind drawing with left and right hand. Draw bended hanger, one version could be to draw it with a line variation that goes from dark (closer to you) to light (line as it recedes into space). I suggest to bend hanger as to form an x,y,z condition. Some students may share same hanger.

4. **Contour Profile**: Blind drawing with left and right hand. Position hand in an interesting pose. Draw a portion of the hand or entire hand closely following profile and hand marks.

5. **Still Life**: Using studio objects create a still life (some students could share the same still life). Blind: Draw the profile, editing spaces within. Viewing: Draw profile including only main spaces within composition.

**Optional assignment**: Draw portion of hand fingers with equidistant lines as to form a series of contour lines. Think about line variation to communicate depth.

2nd week → PLAN & SECTION

**Explain Plan and Section**: Draw a plan and section of their drafting tables during class.
A2 Usonian

Frank Lloyd Wright designed a series of small, affordable houses from the 1930’s through the 1950’s, collectively known as Usonian Houses. Rather than approach the problem of affordability by designing a single house that could be replicated for various clients on different sites, Wright instead developed a building system that would allow for design variety—the house could respond the demands of its site and client—while maintaining design economy. This economy was achieved by employing a standard set of planning concepts, materials, dimensions and details for each house. Underlying this design strategy is a rigorous three-dimensional grid that organizes the space of each house and determines the precise location of each element—wall, window, door, clerestory, and ceiling plane. This grid will be the starting point for this assignment.

You each have been given the plan of one of Wright’s first Usonian houses from which you will produce sections and analytic diagrams to illustrate the fundamental architectural concepts of the Jacobs House.

In order to complete the drawings and diagrams, you will need to research additional photos, drawings and text. We have provided an initial text regarding the Jacobs’ House, in an essay by Michael Caldwell entitled *The Jacobs House: Burning Fields*. Additional research should be done offline, and although Northeastern’s Snell Library is nearby, the Boston Public Library and MIT’s Rotch Library are excellent resources, the latter being dedicated solely to architectural subject matter. You should also use the Avery Architectural Index—a online resource that searches architectural journals and magazines.

Plans and Sections

Plans and sections are types of drawings that architects and other designers use to transmit their thoughts to a specific audience. These types of drawings are referred to as orthographic projections, where the location of a cutting plane is projected onto a parallel surface. Plans are typically cut at 4’ above the floor that they are on, while sections are be placed at their most advantageous location to explain a spatial idea or concept. For further information refer to *Architectural Graphics*.

Process

You will draw two sections of the house using AutoCAD. Do not trace the drawing. Instead, begin your drawing with grid lines. Since each of the houses were designed using a rigorous grid system, beginning your drawing with this grid will result in dimensionally and proportionally accurate plans. Once you have completed the sections, you will choose elements of the house to diagram.

Once the plans have been completed in AutoCAD, you will export them into Illustrator to produce analytical drawings. All final section drawings will be printed at 1/8” = 1’-0” scale, centered on Tabloid (11” x 17”) paper, diagrams will be at the discretion of the student. For this assignment, you will be using the laser printer in the computer lab. It is your responsibility to obtain printing credits for test and final prints.

Resources (links)

Jacobs_House Autocad file
Plotting Screencast
Analytical Drawing
Lineweights

For this exercise you will use three lineweights. In AutoCAD, lineweights are typically specified by their color. The heaviest line you will use will be green at 0.30mm, blue at 0.15mm and grey at 0.05mm. These colors will correspond to the following layers: GRID (red), DARK (green), MEDIUM (blue), and LIGHT (grey). In a CAD program you typically draw objects at full scale (i.e. actual size), drawings are formatted to print at a specified scale (e.g. 1/4′=1′, 1/8″=1′, etc.).

Class Schedule

   Week xx Assignment Handed Out. Tutorial: Intro to Autocad, Plan and Section lecture.

   Week xx Preliminary Section complete. Plotting from Autocad Tutorial.

   Week xx Section Complete.

   Week xx Tutorial: Importing to Illustrator. Diagram lecture.

   October xx/October xx Assignment Due.
A3 ThickThin

In this assignment you will explore two fundamental architectural issues: the delineation of space and the occupation of that space.

On a defined field, you are to use the kit of wall elements to define at least three spaces on that field. You are to carefully consider the relationships between these spaces, the quality of these spaces, and the sequence of movement through them.

North

Only 1 wall can extend within dashed line.
The Field

The field is defined as a 27’ x 42’ upon which a 3’ x 3’ grid has been placed to define location and placement of walls.

Kit of Walls

Use the following kit of 6” walls to define space on the field:

In addition, you can use 6” roof planes at 9’ and/or 15’

The Rules

Use as many or as few wall elements from the kit as necessary.

1) All walls must be positioned along the 3’ grid. The inside or outside edge of the wall (not the center of the wall) is to align with this grid.
2) At least one edge of each wall must touch the outside edge of the field. Walls cannot extend outside the field and must be located within 6’ of the edge of the field.
3) One wall may violate the rule above. This wall need not touch the edge of the field and can be located anywhere on the field. It must, however, remain within the edges of the field.
4) Wall elements may touch. One edge of each wall element may be no more than 6’ from an adjacent wall element.
5) Roof planes must cover at least two-thirds of the field. Roofs can be at 9’ or 15’. Roof planes must share an edge (touch) and may overlap. Roof planes cannot extend beyond the field.
6) Walls must support the roof plane and must be at least 9’ tall. Walls may be no taller than 15’.
Relationships

Explore at least one of the following spatial or compositional concepts in your design:

- **Space within a Space**
- **Interlocking Spaces**
- **Adjacent Spaces**
- **Spaces Linked by a Common Space**

**Sequence**

A narrative should describe the movement through and occupation of the spaces you've defined. Because the space has no program or function, this will be an abstract narrative. Think about the quality of the spaces you are creating: scale, light, degree of openness, etc. How does each space prepare you for the experience of the next?
Software and Tactics

We will use AutoCad and Illustrator for this assignment. In addition, you will be asked to use freehand sketches and diagrams as a design tool. These should be created in your sketchbook or as a series of well kept trace sheets.

Physical Modeling

This assignment will require a series of sketch models and a final model to explain the narrative. For this you are asked to refer to the Modelbuilding Basics book, and the instructors will inform you of any materials that are to be purchased for each class session.
A4 MUSEUM STAIR

Part 1

In this assignment, you will begin to explore the spatial implications and types of perspective drawing. You will study two paintings and carefully analyze the spaces created by each artist:

Rogier van der Weyden, Flemish. ca. 1400-died 1464
Oil and tempera on panel; 54 x 43 in.

John Singer Sargent, American 1856-1925
Oil on canvas; 87 x 87 in.

Using those perspectives as a base, you will create a series of analytic diagrams that illustrate the spatial and perspectival concepts that you have discovered. These diagrams can address any of the following concepts—singularly or combined.

LIGHT
OVERLAP
FRAME
DIRECTION
MATERIAL
ELEMENTS
POSITION
SURFACE
LAYERING
PATTERN
FORM
GEOMETRY
SCALE
PROPORTION

Part 2

Plan and Section

The attached plan and section diagrams represent three spaces in a small university art museum. A new stair will be added to connect the spaces and serve as the major vertical circulation route for the museum. Your assignment is to design the stair that connects the two levels depicted in the drawings. The stair must be a subtractive spatial volume that runs up into either of the upper level galleries. In addition to the design of the stair, you will need to locate the various openings, windows, and skylights that will allow the only light into the rooms. Options for the placement of these elements are included in the attached drawings. You will also need to locate two paintings in the spaces linked by this stair.

An important decision that will need to be made is the location of the two (or more) entries into this particular sequence of spaces (other galleries exist on both levels of the museum that are not included in this design assignment). Pay attention to the intended ‘perceptual performance’ of your design proposal. For example, ‘how does the stair first present itself to the visitor,’ ‘how can light be used as a design tool,’ or ‘how do views of the paintings unfold as I move through the stair and rooms.’ Precise decisions linked to movement and views should be emphasized over symbolic or metaphorical narratives. Decisions about the arrangement of spaces and the elaboration of elements will build from a single (but not simplistic) story line.
General Rules

Minor transformations to the plan and section are possible if they are supported by decisions that grow out of development of the design. The following rules apply:

1) The volume of the stair can penetrate spaces on the first floor that are not included in the plan and section diagram (within the zone qualified in the attached drawings).
2) The design of the thresholds between the three spaces is a matter of design interpretation (i.e. you can design these connections).
3) At least one door must be provided ‘out of the system’ on each level of the project (therefore at least two doors must be provided).
4) The main entrance to the museum is on the first floor.
5) All new architectural elements should be primarily organized on the rectilinear grid of the existing spaces.
6) Assume that a handicap accessible elevator is located in a space immediately adjacent to the double-height space depicted in the attached drawings.

Stair Rules

1) The rise of the stair should be between 4” and 6”, the tread width should be between 12” and 17”.
2) Stairs that transverse more than 12'-0” in elevation require an intermediate landing. Landings typically need to be at least as deep as a stair is wide (for example, a stair that is 4’ wide should have a landing that is at least 4’ x 4’). For stairs that are wider than 5’, landings do not need to be deeper than 5’.
3) Handrails on stairs need to be 34” high. Guardrails at stairs, landings, and balconies need to be 42” high.
4) Guardrails must meet the ‘baby-head rule’, which means that a 4” diameter ball cannot fit through any opening in the guardrail. In addition, guardrails cannot create a ‘ladder effect’, ruling out horizontal railings.

Requirements

To be determined