

## **Department of Architectural Technology**

**ARCH 1210**

### **ARCHITECTURAL DESIGN II: FOUNDATIONS**

6 lab/studio hours, 3 credits

**Course Description:** Architectural Design II: Foundations is the second course in the one year foundation sequence which increases the student's ability to perceive visual cues, create visual design, formulate concepts, and render ideas in two or three dimensions. Students will use a combination of hand and digital skills to aid in the creation and interpretation of three dimensional objects and space, and the delineation of the same using standard projection systems

**Course context:** This is a required course in the design sequence.

**Prerequisites:** ARCH 1110 Architectural Design I: Foundations and ARCH 1191 Visual Studies I both with grades of C or higher

**Co-requisites:** ARCH 1291 Visual Studies II

#### **Required Texts:**

In following articles will be available in a reader:

1. Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. pp. 56-67.
2. Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships, pp.58-65.
3. Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. pp. 168-175.
4. Lupton, Ellen and Jennifer Cole Phillips. Graphic Design: The New Basics, pp. 70-83.
5. Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. pp. 204-213.
6. Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships, pp.96-117.
7. Twombly, Robert ed. Louis Kahn: Essential Texts, pp. 266-280.

**Attendance Policy:** No more than 10% absences are permitted during the semester. For the purposes of record, two lateness are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

**Course Structure:** This course is a design studio which will include lectures, student presentations, guest critics, in-class workshops, and charrettes. The students will be given sequential weeks. Each problem will involve a cyclical iteration of the design process in which new skills in a variety of media will be acquired. Students will give verbal and graphic presentations of their designs which will demonstrate agility with vocabulary, concepts, and result in a critical class discussion to assess quality of the work. Work will be completed both in and outside of class. Written evaluation for each week will be provided by the professor and fellow classmates. Students should keep record of their own progress in a spreadsheet.

**Grading:**

Weekly Sketches	15%
Projects	80%
Class Participation	5%

**Academic Integrity:** Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

**Learning Objectives**

Upon successful completion of this course, the student will:

1. **Implement** an iterative design process from problem identification, information gathering, solution generation and evaluation, implementation, presentation, and overall project evaluation. (Knowledge)
2. **Incorporate** design concepts and vocabulary into design process and presentations. (Knowledge)
3. **Distinguish** between media and **determine** the appropriate method and media required to complete a drawing or model. (Gen Ed)
4. **Communicate** ideas and information both verbally and through writing. (Gen Ed)
5. **Develop** and **apply** professional vocabulary. (Gen Ed)
6. **Produce** orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)
7. **Utilize** analogue and digital media to create drawings and models. (Skill)
8. **Incorporate** color and materials into designs and presentations. (Skill)
9. **Represent** human scale and proportion in design drawings. (Skill)

**Assessment**

To evaluate the students' achievement of the learning objectives, the professor will do the following:

1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups. (Los: 1, 2, 3, 6, 7, 9)
2. **Assess** the students' use of professional vocabulary during oral presentations. (Los: 2, 4, 5)
3. **Review** students' written descriptions of design work and feedback. (Los: 4, 5)

**Course Outline:****WEEKLY SKETCHES**

A total of 10 weekly sketches will be completed per semester as homework. Each sketch has a clearly defined focus and method such as blind contour form study, positive and negative space, shade and shadow, texture, light, depth, perspective, and scale. Sketches will explore a variety of paper and drawing media. Thumbnail study sketches should be completed in a sketchbook prior to preparing the final sketch on 8½"x11" paper. Hand letter on the back of each sketch the intention, time it took to complete, and the location.

**WEEK 1:**

*Lecture:* **HUMAN PERCEPTION:** Discuss how humans perceive form, and how we can intentionally distort this perception.

*Lab & Homework:* **EXERCISE 1**

1. Construct a 4" cube out of foam core. Cubes will be tested in a die for accuracy.
2. Construct two (2) additional 4" cubes out of a material of your choice. One should enhance the attributes of a cube (supercube), and one should be unrecognizable as a cube (uncube). All cubes must measure exactly 4".
3. Draw an axonometric of your supercube and uncube and render by hand.

*Reading:* Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. pp. 56-67.

**WEEK 2:**

*Lecture:* **DYNAMIC BALANCE:** Discuss how we can create dynamic and complex groupings of curvilinear volumes based on hierarchy, proportion, and dominance while achieving structural stability.

*Lab & Homework:* **PRESENTATION OF EXERCISE 1**  
**EXERCISE 2: CURVILINEAR FORM**

1. Make 12 curvilinear volumes (sphere, cone, cylinder, ovoid, and slices of any of these).
2. Identify the dominant, subdominant, and subordinate forms. Identify the dominant axis of each volume.
3. Assemble groupings of 3 curvilinear volumes (a total of 4 groupings) and secure to a ½" thick foam-core base.

*Reading:* Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships, pp.58-65.

**WEEK 3:**

*Lecture:* **DYNAMIC BALANCE CONTINUED:** Discuss how we can create dynamic and complex groupings of curvilinear volumes based on hierarchy, proportion, and dominance while achieving structural stability.

*Lab & Homework:* **EXERCISE 2**

4. Make 12 curvilinear volumes (sphere, cone, cylinder, ovoid, and slices of any of these).
5. Identify the dominant, subdominant, and subordinate forms. Identify the dominant axis of each volume.
6. Assemble groupings of 3 curvilinear volumes (a total of 4 groupings) and secure to a ½" thick foam-core base.

**PRESENTATION OF EXERCISE 2**

**WEEK 4:**

*Lecture:* **COLOR BASICS:** Discuss basic color concepts (hue, value, chroma) and their relationships.

*Lab & Homework:* **EXERCISE 3**

Using a Munsell Color chart and a corresponding envelope of color chips, arrange the chips so that the values and chromas are arranged in the proper order.

1. From the list of words describing colors, choose twelve and pick the colors from the Munsell charts that correspond.
2. Start a color collage on one wall of the studio to be added to throughout the semester where different color samples (paper, cloth, metal, foil, tree bark, cardboard, paint samples, leather, and others are all cut to the same size) are assembled according to Munsell's chart.
3. Duplicate one of the Munsell Color charts digitally (Adobe Illustrator) in RGB and CMYK.

*Reading:* Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. pp. 168-175.

#### **WEEK 5:**

*Lecture:* **COLOR HAS EFFECT:** Discuss how to create a 2-D composition and apply primary, complimentary, and analogous colors in order to create a desired affect.

*Lab & Homework:*       **PRESENTATION OF EXERCISE 3**  
                                  **EXERCISE 4**

1. Generate a 2-D pattern on bond paper. Color with colored pencils or markers using 3 analogous colors.
2. Repeat same pattern, but color with 3 complimentary colors.
3. Repeat same pattern, but color with 2 sets of analogous colors that are compliments.
4. Digitize your pattern, and color with 2 sets of analogous colors that are compliments (Adobe Illustrator).
5. Assess and write the goal and outcome of each study.

*Reading:* Lupton, Ellen and Jennifer Cole Phillips. Graphic Design: The New Basics, pp. 70-83.

#### **WEEK 6:**

*Lecture:* **COLOR HAS EFFECT CONTINUED:** Discuss how to create a 2-D composition and apply primary, complimentary, and analogous colors in order to create a desired effect.

*Lab & Homework:* **EXERCISE 4**

1. Generate a 2-D pattern on bond paper. Color with colored pencils or markers using 3 analogous colors.
2. Repeat same pattern, but color with 3 complimentary colors.
3. Repeat same pattern, but color with 2 sets of analogous colors that are compliments.
4. Digitize your pattern, and color with 2 sets of analogous colors that are compliments (Adobe Illustrator).
5. Assess and write the goal and outcome of each study.

**PRESENTATION OF EXERCISE 4**

#### **WEEK 7:**

*Lecture:* **COLOR EXPRESSIONS IN SPACE:** Discuss how we can use color to evoke a strong emotion.

*Lab & Homework:* **EXERCISE 5**

1. Draw a 1-point or 2-point interior perspective of a given space. Duplicate so that you have two drawings for comparison. Mount to illustration board.
2. Select two contradictory emotions and select colors which relate to these feelings.
3. Using magazine images collage floor, wall, and ceiling colors over your drawing. Attempt to create smooth color.
4. Your choice in colors should achieve a set of objectives such as: color "temperature feeling": warm, neutral, or cool; color "mood feeling"; and apparent differences in size or proportions of space of the two rooms.

*Reading:* Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. pp. 204-213.

#### **WEEK 8:**

*Lecture:* **ARCHITECTURAL PALEONTOLOGY, THE BIG PICTURE:** Discuss how research is the basis for design.

*Lab & Homework:* **PRESENTATION OF EXERCISE 5  
EXERCISE 6**

Research a renowned architect's work and philosophy. In parallel research the context of their work in terms of art, culture, technology, zeitgeist, and other design fields. Create a compelling 2-D presentation of your findings.

1. Choose an architect from a list provided by the professor. The list will also make suggestions for other related areas of research in culture, technology, social issues, engineering, and industrial design.
2. Purchase 1 book on your architect and/or use the City Tech Library and internet to find writing and images.
3. Write 500 words, in your own words, with cited references on your research.
4. Create four (4) 11"x17" plates in an image editing software (Adobe Photoshop) to clearly and concisely communicate your research in images. Include excerpts from your writing. Organize your plates into the following: Architect, Art & Artist, Design of the Era, Socio-Political Themes.

**WEEK 9:**

*Lecture:* **ARCHITECTURAL PALEONTOLOGY, THE BIG PICTURE CONTINUED:** Discuss how research is the basis for design.

*Lab & Homework:* **EXERCISE 6**

Research a renowned architect's work and philosophy. In parallel research the context of their work in terms of art, culture, technology, zeitgeist, and other design fields. Create a compelling 2-D presentation of your findings.

1. Choose an architect from a list provided by the professor. The list will also make suggestions for other related areas of research in culture, technology, social issues, engineering, and industrial design.
2. Purchase 1 book on your architect and/or use the City Tech Library and internet to find writing and images.
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**PRESENTATION OF EXERCISE 6**

**WEEK 10:**

*Lecture:* **ARCHITECTURAL PALEONTOLOGY, A CLOSER LOOK:** Discuss how research is the basis for design continued.

*Lab & Homework:* **EXERCISE 7**

Focusing on one house designed by your architect from the previous exercise, prepare scaled multi-view drawings and paraline drawings of the work. Consider your previous research as input for how you choose to portray the work.

1. Find plans, elevations, and sections of your architect's house design. Scale these plans, elevation, and sections and draw over them in 2-D vector drafting software (AutoCad).
2. Refine your drawings to include doors, windows, and furniture. Use line weights, poche, and hatching to enhance the drawings.
3. Create two 2-D diagrams of the plan or elevation which extract the underlying geometry and program arrangement.

**WEEK 11:**

*Lecture:* **ARCHITECTURAL PALEONTOLOGY, EXPRESSED:** Discuss how research is the basis for design continued.

*Lab & Homework:* **PRESENTATION OF EXERCISE 7**

**EXERCISE 8: ARCHITECTURAL PALEONTOLOGY, EXPRESSED**

Build a physical model of an existing building which uses expressive materials and modifications to the architecture in order to emphasize the building's conceptual intent.

1. Print your plans, sections, and elevations from the previous exercise at 1/8"-1'-0" scale.
2. Determine a size and method for constructing your model base. Use this as an opportunity to exaggerate site attributes, or to integrate graphics in the model. Construct the base.
3. Determine the attributes of the architecture which are fundamental and then determine a creative method of building which highlights them. This is the concept for your model.
4. Select materials, color, textures, entourage, and foliage in relation to your concept. At least one element of the model should be laser cut.
5. Import 2-D drawings and extrude your plan to create a digital 3-D massing model.
6. Construct a plan oblique drawing of your house by printing your digital 3-D massing model and drawing over it on tracing paper. Add detail, line weights, and shading by hand.
7. Use the same graphic style as the previous exercise, and format your digital and hand drawings onto a series of 11"x17" plates.
8. Verbally present the model and your presentation boards from the previous two exercises to a jury.

**WEEK 12:**

*Lecture:* **ARCHITECTURAL PALEONTOLOGY, EXPRESSED Continued:** Discuss how research is the basis for design continued.

*Lab & Homework:* **EXERCISE 8**

Build a physical model of an existing building which uses expressive materials and modifications to the architecture in order to emphasize the building's conceptual intent.

1. Print your plans, sections, and elevations from the previous exercise at 1/8"-1'-0" scale.
2. Determine a size and method for constructing your model base. Use this as an opportunity to exaggerate site attributes, or to integrate graphics in the model. Construct the base.
3. Determine the attributes of the architecture which are fundamental and then determine a creative method of building which highlights them. This is the concept for your model.
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7. Use the same graphic style as the previous exercise, and format your digital and hand drawings onto a series of 11"x17" plates.
8. Verbally present the model and your presentation boards from the previous two exercises to a jury.

**PRESENTATION OF EXERCISE 8**

**WEEK 13:**

*Lecture:* **ADDITIVE AND SUBTRACTIVE:** Discuss additive and subtractive methods of creating form.

*Lab & Homework:* **EXERCISE 9**

Construct a series of cubes using both additive and subtractive methods and thoughtfully place them in a landscape. The design of each cube should be intentional and contribute to an overall narrative.

1. Working with chip board or card board, create one 3" and one 1 ¾" cube study model. One of the cubes should be "in-the-manner" of your architect from the previous exercise. The other cube should be defined by you.
2. Working with blue foam or Styrofoam, create the inverse of your 3" and 1 ¾" study models.
3. Working with chip board/cardboard and blue foam/Styrofoam create a 3" and 1 ¾" hybrid study model.
4. You will be given a 9" square contoured site. Roughly cut the contours out of cardboard. Site five (5) of your study models. Modify the contours to enhance the design.
5. Draft your modified contours in a vector drafting software (Rhino) and laser cut. Remake your 5 models out of bass wood and plaster of Paris. You may laser cut your bass wood as appropriate. Attach securely to your site.
6. Using a photograph of your model as an underlay, sketch two perspective views. Add entourage, shade, and color.
7. Scan your sketch and format an 11"x17" presentation board in page layout software (Adobe InDesign).

*Reading:* Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships, pp.96-117.

#### **WEEK 14:**

*Lecture:* **ADDITIVE AND SUBTRACTIVE CONTINUED:** Discuss additive and subtractive methods of creating form.

#### *Lab & Homework:* **EXERCISE 9: ADDITIVE AND SUBTRACTIVE**

Construct a series of cubes using both additive and subtractive methods and thoughtfully place them in a landscape. The design of each cube should be intentional and contribute to an overall narrative.

1. Working with chip board or card board, create one 3" and one 1 ¾" cube study model. One of the cubes should be "in-the-manner" of your architect from the previous exercise. The other cube should be defined by you.
2. Working with blue foam or Styrofoam, create the inverse of your 3" and 1 ¾" study models.
3. Working with chip board/cardboard and blue foam/Styrofoam create a 3" and 1 ¾" hybrid study model.
4. You will be given a 9" square contoured site. Roughly cut the contours out of cardboard. Site five (5) of your study models. Modify the contours to enhance the design.
5. Draft your modified contours in a vector drafting software (Rhino) and laser cut. Remake your 5 models out of bass wood and plaster of Paris. You may laser cut your bass wood as appropriate. Attach securely to your site.
6. Using a photograph of your model as an underlay, sketch two perspective views. Add entourage, shade, and color.
7. Scan your sketch and format an 11"x17" presentation board in page layout software (Adobe InDesign).

#### **PRESENTATION OF EXERCISE 9**

*Reading:* Twombly, Robert ed. Louis Kahn: Essential Texts, pp. 266-280

#### **WEEK 15:**

*Lecture:* **FORM AND LIGHT:** Discuss how architects use light to shape their designs.

*Lab & Homework:* **EXERCISE 10**

Design and build a working lamp based on additive and subtractive formal studies.

1. Choose two of your cubes from the previous exercise as a reference point. Sketch with charcoal the way that light interacts with these objects. Refine your sketches to define a clear light effect.
2. Create a study model out of chip board/cardboard and tracing paper to simulate with 3-D materials your light effect.
3. Refine your design through models and sketches.
4. Your final lamp must consist of a subtractive component made of wood or plaster, and an additive component made of an opaque sheet material of your choice, and a translucent/transparent sheet material of your choice.
5. The final lamp must have an integral light source and power supply.
6. Prepare 11"x17" presentation plates with your original charcoal sketches, photos of the process, multi-view drawings, and a final illustration of the design. Present your lamp and presentation plates to a jury.

**PRESENTATION OF EXERCISE 10**

**.Bibliography**

Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships. New York: Princeton Architectural Press, 2002. Print.

Lupton, Ellen and Jennifer Cole Phillips. Graphic Design: The New Basics. New York: Princeton Architectural Press, 2008. Print.

Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. Seattle: University of Washington Press, 1983. Print

Twombly, Robert ed. Louis Kahn: Essential Texts. New York: W.W. Norton & Company, 2003. Print.