

Department of Architectural Technology
Bachelor of Technology in Architectural Technology

ARCH 3510 ARCHITECTURAL DESIGN V

2 class hour, 6 lab hours, 5 credits

Course Description: This studio focuses on the design development and detailing of both a commercial and a residential project. This studio addresses the next level of design after schematic design: design development. This includes the integration of structure, mechanical, lighting, plumbing fixture selection, interior materials, finishes, space programming and furniture layout. Students will be required to meet current design and functional needs of the design problem's program as well as code requirements.

Prerequisites: ARCH 2410 with a grade of C or higher, or AAS degree in architecturally related field

Suggested Text: Architectural Graphic Standards [10th Edition], by Ramsey and Sleeper, published by John Wiley and Sons, Inc., 2000. [ISBN #0471348163]

Suggested Reference: Interior Graphic Standards by McGowan, Maryrose & Kruse, Kelsey, published by John Wiley and Sons, Inc., 2003.

Attendance Policy: More than two-unexcused absences will affect the final grade of the student. Two latenesses equal one absence.

Course requirements: A series of problems will be assigned to be developed by the student and presented to the class through architectural drawings and/or models. On going critiques and final jury presentations will be an integral part of the course.

Grading:

Project 1	40%
Project 2	45%
Class critiques and participation	15%

A final grade of C or higher is required in this course to use it as a prerequisite for subsequent courses.

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 shall:

1. **Develop** schematic design into design document level drawings. (Knowledge)
2. **Understand** the differences between different building systems (electrical, lighting, plumbing, HVAC and structure) and **integrate** them into the Design Development deliverables. (Knowledge)
3. **Research** materials, furniture and lighting specifications and **integrate** specifications into visual representations (models, drawings) and create presentation boards of selected products. (Knowledge)
4. **Apply** knowledge of building codes pertaining to egress and fire protection/suppression to design without compromising design aesthetics. (Knowledge)

5. **Understand** how humans perceive space and how human perception impacts design. (Knowledge)
6. **Demonstrate** knowledge of different societies' values regarding space and its social implications. (Knowledge)
7. **Distinguish** between media and **determine** the appropriate method and media required to complete a drawing or model. (Gen Ed)
8. **Generate** talking points for persuasive presentation of design. (Gen Ed)
9. **Research** precedents and implement information literacy. (Gen Ed)
10. **Apply** quantitative analysis to design. (Gen Ed)
11. **Collaborate** on group projects. (Gen Ed)
12. **Critique** written reports and oral presentations of fellow students. (Gen Ed)
13. **Produce** orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)
14. **Synthesize** site circulation, zoning, urban context, and views to design. (Skill)
15. **Analyze** and **reduce** complex media (print, visual, sites) to component parts. (Skill)
16. **Show ability** to contribute actively by applying knowledge to the identification and analysis of societal and professional problems to enact solutions. (Gen Ed)

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.
2. **Assess** the students' use of professional vocabulary during oral presentations and written work.
3. **Review** students' ability to incorporate a concept into their design work.
4. **Evaluate** students' ability to write descriptions of both existing spaces and their own designs effectively.
5. **Evaluate** students' participation in class discussions regarding students written and oral presentations.
6. **Review** students' accuracy with applying quantitative information to a design scheme.
7. **Evaluate** students' application of design precedents and product specifications.
8. **Review** students' ability to synthesize circulation, zoning, urban context, and views into a design
9. **Review** students' ability to synthesize construction types, hierarchy, and light into building design.
10. **Review** students' ability to incorporate environmental systems and sustainable concepts into their design work.
11. **Review** of group projects will be based on the completeness of the work as well as the effectiveness of the group's team work and communication skills.
12. **Evaluate** students' ability to diagram complex media.

Extent and duration of projects

Project 1

- 7 weeks
- *Commercial Project*, small scale project on a specific urban site
- Student to work with Community Group to Identify Issues
- **Community Organization:**
- Hester Street Collaborative's (HSC) mission is to empower residents of underserved communities by providing them with the tools and resources necessary to have a direct impact on shaping their built environment. We do this through a hands-on approach that combines design, education, and advocacy. HSC seeks to create more equitable, sustainable, and vibrant neighborhoods where community voices lead the way in improving their environment and neglected public spaces.

Board 1: Neighborhood Project Identified

- Board 2:** Site Analysis
- Board 3:** Conceptual and Final Physical Models
- Board 4:** Diagrammatic Site layout
- Board 5:** Conceptual Massing Diagrams
- Board 6:** Site Plan showing landscaping, paving, exterior furniture/seating...
- Board 7:** Floor Plans (may need more than 1 board) showing paving, furniture
- Board 8:** Sections (2 min.) showing furniture, people
- Board 9:** Elevations showing exterior materials, lighting, people and landscaping
- Board 10:** Enlarged ADA Bathroom Layout showing plan, elevations, materials and fixtures
- Board 11:** Reflected Ceiling Plans showing light fixture cuts
- Board 12:** Images of Model: Physical and Computer generated.

Project 2

- 8 weeks
- *Residential Project*, program restraints based on client needs.
Single Family Residence using Shipping Containers

- Board 1:** Client Board
- Board 2:** Site Analysis
- Board 3:** Conceptual ideas for Community with Defined Program
- Board 4:** Diagrammatic Site layout
- Board 5:** Precedent Studies
- Board 6:** Conceptual Massing Diagrams
- Board 7:** Site Plan showing landscaping, paving, exterior furniture...
- Board 8:** Floor Plans (may need more than 1 board) showing paving, furniture
- Board 9:** Sections (2 min.) showing furniture, people
- Board 10:** Elevations showing exterior materials, lighting, people and landscaping
- Board 11:** Enlarged Kitchen Layout showing plan, elevations, materials and appliances
- Board 12:** Enlarged Bathroom Layout showing plan, elevations, materials and fixtures
- Board 13:** Reflected Ceiling Plans showing light fixture cuts
- Board 14:** Images of Model: Physical and Computer generated.

Course Outline:

1. August 29th: Introduction to Project 1

HOMEWORK: Research the community and determine the weakness and positive elements in the neighborhood

Board 1: Community Analysis and Needs

2. September 9th: Review of the boards. Group needs of students into groups.

Week 2: Conceptual Ideas and Site Analysis.

3. September 12th: Site Discussion and Site Visit. Meet with Community Group.

Document your site by gathering photos and visiting the site and taking your own photos. Make sure you show a **map** and **site analysis**..

Answer the following:

SITE: Location- *The site should be related to major streets or landmarks previously existing. Aerial photographs help in this assessment stage. There should be documentation of distances and time from major places.*

SITE: Generalities- *Includes , neighborhood context, greenspace, places of interaction, accessibility, schools, places of worship, community centers, etc.*

SITE: Commerce *Includes hotels, restaurants, lounges, cafes, bars etc.*

SITE: Circulation/Pathways *Includes Residential to Commercial, Residential to Residential, Subways to Residential & Commercial, Schools to Commercial, etc.*

SITE: Urban Walls *Includes façade patterning, hierarchies, solid/void, rhythm, repetition, etc.*

SITE: Climate and Natural Light *Includes natural light intensity, natural light density, analysis over time/space, etc.*

SITE: History *includes neighborhood history*

Board 2: Site Analysis

4. **September 16th** Review of Conceptual ideas for project within the Community.
HOMEWORK: Finalize Conceptual Ideas.

HOMEWORK: Board 3 Conceptual ideas for Community with Defined Program

Week 3: Discussion of Impression of the Site and Community

5. **September 19th** : Discussion of Impression of the Site and Parti Development.

HOMEWORK: Impression of the site collages with 6 abstract models 3"x3"

Board 4A: Impression of the Site **Board 4B:** Images of the 6 3"x3" Concept Models

6. **September 23rd** : **Integration of Community Needs, Site and Parti**

HOMEWORK: Plans, Sections and Massing of Space.

Week 4: Development of Project

7. **September 26th**: Finalization of Concept into Plans, Sections and Massing

HOMEWORK: Development of Plans, Sections and Study Model

8. **September 30th**: **Introduction of Materials Flooring and Interior Materials And Displays**

HOMEWORK: Continuation of development of project along with flooring selection and displays

Weeks 5: Discussion of entrance, signage, exterior space and elevation. Elevation incorporating these elements required. Discussion of various ceiling types and uses. Discussion of the connection of the vertical and horizontal surfaces.

9. **October 3rd**: **Exterior Elevations and Materials**

HOMEWORK: Board 9: Exterior Elevations showing materials, landscaping, people...

10. **October 7th**: Commercial RCP

HOMEWORK: Board 11: Reflected Ceiling Plan and Cut sheets of lighting

Week 6: Review and development of all aspects of the design development and detailing of the project as previously discussed. Preparation of final documents for final Jury. The introduction of color and rendering into final presentation drawings.

11. **October 10th**: Presentation review / Final Desk Crits

12. **October 15th**: Final Desk Crits

Week 7: Jury critique of Project 1

13. **October 17th**: **Project 2 Presentations**

14. **October 21st**: Grading, Reflection and Posting of Final Work for Community

Week 8: Introduction to course content with discussion of the various factors affecting the design development of a design problem. Discussion of human space and needs.

15. **October 24th**: **CLIENT PROFILE** – One board with **images** and **text** describing your clients. Make sure you describe what each of your clients (both parents and children) need for their ideal prefabricated home. **This is the program for the house you are designing. This should be in written form along with images.**

HOMEWORK: Board 1: Client board

16. **October 28th**: Review Client Boards. Discussion of Program.

PROGRAM: You must also provide spaces that are required for living: bedrooms, bathrooms, kitchen, living spaces and whatever you think is appropriate for your client. It can be open or enclosed spaces, but all living spaces must have windows. Define what happens in each space and what type of furnishing each space will need. This should be done through images and text.

There must be an outdoor space incorporated into your design- garden on the ground floor terraces on upper floors. The exterior of the building must also be developed.

HOMEWORK: Board 2: Program board

Week 9: Introduction of Site Analysis and the Site

17. October 31st: Site Analysis discussion. Site Visit.
267 Pacific Street (25'x 88') or 92 Boerum Place (25'x75')

Document your site by gathering photos and visiting the site and taking your own photos. Make sure you show a **map** and a brief **site analysis** as to why this is an ideal location for your clients.

Answer the following:

SITE: Location- *The site should be related to major streets or landmarks previously existing. Aerial photographs help in this assessment stage. There should be documentation of distances and time from major places.*

SITE: Generalities- *Includes , neighborhood context, greenspace, places of interaction, accessibility, schools, places of worship, community centers, etc.*

SITE: Commerce *Includes hotels, restaurants, lounges, cafes, bars etc.*

SITE: Circulation/Pathways *Includes Residential to Commercial, Residential to Residential, Subways to Residential & Commercial, Schools to Commercial, etc.*

SITE: Urban Walls *Includes façade patterning, hierarchies, solid/void, rhythm, repetition, etc.*

SITE: Climate and Natural Light *Includes natural light intensity, natural light density, analysis over time/space, etc.*

SITE: History *includes neighborhood history*

HOMEWORK: Board 3 Site Analysis

18. November 4th: Review of Site Analysis. Discussion of site selection and orientation of program on site.

HOMEWORK: Board 4 Diagramatic Site layout

Week 10: Introduction to Residential Project. Interior planning design concepts and requirements. Discussion of furniture layout, space planning.

19. November 8th: Introduction of Shipping Containers.

SHIPPING CONTAINER: Here are the sizes and combinations of containers you can use to create your residence.:

(9) 20' shipping containers

The shipping container dimensions are:

Shipping Container	Inside length	Inside width	Inside height	Outside length	Outside width	Outside height
20'	19'- 5"	7'-8"	8'-10"	20'-0"	8'-0"	9'5"

Precedent studies for container architecture

HOMEWORK:

Board 5: Precedent Study: research on buildings that contain shipping containers

Board 6: Diagrams of Massing: Generate a series of diagrams showing different variations of the shipping containers organized to create your house. There should be at least ten different massings. They should be color coded or noted of which program is located in each container.

Week 11: Introduction of Interior design and space planning. Furniture and flooring layout. Enlarged kitchen layouts along with material and fixture cuts required.

20. November 11th: Pin-up Review of Conceptual Massing Diagrams and Precedent Studies

21. November 14th: Final Massing Selection. Flooring and furniture Lecture. Development of program in Plans, Sections and Massing. Desk Crits.

HOMEWORK: Plans, Sections and Massing of House and Flooring Selection.

22. November 18th: Kitchen Lecture. Desk Crits.

HOMEWORK: Board 11: Enlarged Kitchen Layout

Week 12: Bathrooms and kitchen layouts along with material and fixture selections to be discussed. Enlarged bathroom layouts along with material and fixture cuts required. Designing based on the clients program, need and budget. Integration of structural elements, stairs, fenestrations.

23. November 21st: Bathroom Lecture

HOMEWORK: Board 12: Enlarged Bathroom Layout

24. November 25th: Exterior Elevations: Materials and glazing. Landscaping and Exterior Spaces.

HOMEWORK:

Board 7: Site Plan

Board 10: Exterior Elevations

Week 13: Discussion about working as a team, using consultants and developing a cohesive project.

Discussion of various lighting techniques, ceiling types and different lighting types. A lighting plan and cut sheets of lighting selections required.

25. December 2nd: Lighting Lecture

HOMEWORK: Board 13: Reflected Ceiling Plan

26. December 5th: Presentation Lecture. Desk Crit

HOMEWORK: All Boards blocked out

Week 14: Review of project and discussion of presentation techniques and models.

27. December 9th: Desk Crits

28. December 12th: Pin-up of work (projection of preliminary presentation)

Week 15: Jury critique of Project 1:

29. December 19th Presentation

30. December 23rd Wrap up