**ARCH 105A: Fundamentals of Design Communication**

University of Southern California, School of Architecture
Fall 2024 / 2 Units

Location: Watt Hall B10 Studios

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**Syllabus**

**Course Description**

Representation and visual communication are central to architectural education. Throughout their time at school and in their career, a designer communicates their ideas through drawings, models, photographs, renderings, diagrams, prototypes, computations, texts, videos—the list goes on. These formats are not only final outputs but also instruments and tools that facilitate exploring and understanding ideas about design. Each medium comes with specific conventions—materials, techniques, and interpretations—and it is the architect's work to not only become proficient in but also, perhaps, advance several genres.

Key to an understanding of architecture is an ability to move between aesthetics and geometry, spatial concept and materiality, art practice and technical production. This course will introduce basic drawing, digital and physical modelmaking, and post-processing skills and encourage experimentation with these diverse methods of working, providing students with opportunities to build and expand an understanding of what constitutes architectural representation. By iteratively working through various types of representation techniques, students will not only enhance their ability to communicate both visually and verbally, but also improve the final output of

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Thomas Demand, Zeichensaal (1996), photograph of a paper model of an architecture drafting room.
their studio projects.

The course will be comprised of four project-based assignments, each presented with accompanying lectures, readings, and precedents. The projects are cumulative, with each focused on a specific representation technique more advanced than the previous. Design concepts introduced across these projects, including figure-ground, composition, color, orthographic and paraline drawing, etc. will be explored for their architectural significance. Content for each project may draw from resources outside the discipline, encouraging students to challenge preconceived assumptions about architecture through engagement with diverse media.

**Learning Objectives**

ARCH105a creates a foundational toolkit of basic software knowledge and a working palette of notational and graphic methods that help express design thinking. Through this class, students will develop:

- An understanding of how to translate 3D objects into 2D drawings and, inversely, 2D drawings into 3D objects
- An understanding of scale as a concept and tool in the production of these translations
- An understanding of drawing conventions, including lineweights and linetypes
- An understanding of and skills to produce drawing types including plans, sections, elevations, and paraline drawings
- How to plot and print at designated scales
- Familiarity with softwares including Rhino, Adobe Illustrator, and Adobe Photoshop as well as an understanding of workflows to navigate between these applications
- Skills to build physical, scaled models utilizing a range of materials
- An understanding of concepts including form, composition, and color, in tandem to considerations of function and construction

For more about how these learning objectives meet NAAB Accreditation criteria, please see section "NAAB Accreditation."

**Assignments**

**Assignment 1: Orthographic Projection & Analysis**
Assignment 1 introduces the fundamentals of orthographic projection and layout, namely understanding how to construct a basic set of plans, sections, and elevations using Rhino and Adobe Illustrator. Each student's drawings will be based on actual measurements of an object of their choosing. An added analytical drawing will guide the students in producing a full set of drawings, featuring architectural drawing conventions of lineweight and type, that demonstrate a critical engagement with their object as a designed composition of parts.

**Assignment 2: 2D-to-3D Translation**
Assignment 2 guides students from two-dimensional drawing to three-dimensional modeling. From a survey collection of important single-family residences by architects, each student will select and then reconstruct the plans, sections, and elevations of a precedent project. Then, building off of their new understanding of how orthographic drawings are produced, students will each reconstruct, in 3-D, cropped chunks of their precedent house. Students will learn how to represent these 3-D models, again in 2-D, through the production of oblique projections. By the end of Assignment 2, students should have a foundational set of capabilities in Rhino and an understanding of drawing conventions.

**Assignment 3: Architectural Collage**
Assignment 3 introduces students to principles of composition, such as part-to-whole relationships, proportion, and figure-ground, through the act and production of collage. In pairs, students will combine Assignment 2’s ready-made architectural chunks into 3-D hybrid collages by resolving the differences between each chunk’s geometries and details by: scaling, intersecting, extracting, replicating, reducing, sampling, and so on. The resulting 3-D objects will then be represented in oblique drawings, with the introduction of color and texture, incorporated via “digital collage” in Adobe Photoshop.

**Assignment 4: Models! Models! Models!**
Assignment 4 introduces model-making basics. Continuing to work in pairs, students will construct a 1’x1’x1’ model of their hybrid objects. This process will introduce fundamental model-making materials and methods. Assignments 4 will be presented together with select drawings from Assignments 2 and 3 for a “final review,” allowing students to showcase a full range of architectural representations, including orthographic projections,
Requirements for projects will be issued via studio presentations and in writing. If taught in coordinated sections, day-to-day expectations may be given verbally and may differ from section to section. Full completion of all assigned work is critical to success in this course. Assignments that do not reflect adequate progress or completion will not be discussed during desk crits, pin-ups, and reviews. Students are expected to upload assignments and process work via Google Drive. Project due dates are listed on the assignment sheet and Blackboard.

**Desk Crits and Pin-ups**
Individual desk critiques and pin-ups are the primary instruments of design instruction and will occur regularly in class. The success and quality of these one-on-one dialogues with the studio instructor are highly contingent upon the student’s preparation and timely production, as well as the student’s ability to absorb, understand, and apply critical feedback.

**Reviews**
Scheduled reviews provide students with varied perspectives and insights from a jury of instructors and invited critics. Juror comments, design criticism, and discussion provide valuable insight and constructive feedback on a student’s work and that of colleagues. Full attendance, active participation, and engagement are expected for the duration of all reviews and are a significant aspect of the “participation” component of grade evaluation (see below).

**Lectures**
Throughout the semester, first-year instructors and guest critics will address the entire first-year class in order to introduce projects or lecture on design concepts, precedents, and techniques. Typically, these will occur in Watt 1 Lecture Hall. Technical skill-building, including software demonstrations, will be provided in lectures and small group discussions with the aid of class assistants. Attendance is mandatory at all lectures. It is imperative that all students are on time and take notes.

**Research and Analysis**
Study of design precedent is an essential component of each studio assignment. Students are expected to regularly use the library and other resources (not just the internet) to investigate ideas and projects relevant to the course. Notes, drawings, diagrams and other materials pertaining to this research are to be incorporated into the design notebook (see below).

**Supplies and Equipment**
Please refer to the welcome letter and First Year Computer Recommendations and Supply Requirements List that you received this summer. You may also need to purchase additional model-making materials during the course of the semester. Material requirements will be outlined in the assignment handouts and/or by studio instructors.

**Readings**
Relevant readings will be assigned throughout the course and discussed throughout the semester. They must be completed in-depth, not skimmed. Informed intellectual discourse is expected in the studio environment. Below is the list of readings for the course which will be assigned to supplement course assignments:

- **Berger, John.** “Drawing is Discovery,” in *The New Statesman*, 1953 (webpage).
- **eflux Architecture.** *On Models*, 2022 (online issue).
- **Evans, Robin.** *Translations from Drawing to Building*, 1997.
- **Evans, Robin.** "Introduction: Composition and Projection,” in *The Projective Cast: Architecture and its Three

Required Texts
The following texts are required for this course and will be available online via Blackboard:

Studio Notebook
Students are required to maintain a design notebook. It is meant to be a thorough and well-organized record of and instrument for critical inquiry and design process. The notebook is to include (freehand and/or digitally produced) generative diagrams and design sketches, weekly process drawings, notes/diagrams/sketches from desk crits, graphic analysis of relevant precedents, class/lecture/reading notes, as well as any other material relevant to design exploration in this course. Date and label all entries clearly and in a consistent manner.

Portfolio
Each student will be required to submit a digital portfolio at the end of the semester. The content should be thoughtfully presented in a letter size (8.5”x11”) portfolio. All assignments must be included in the portfolio, so students are advised to regularly document all work.

Evaluation and Grading
Work will be evaluated periodically so that you have an indication of your progress. Unsatisfactory performance warnings will be issued to students whose work does not meet minimum requirements. Active and regular participation in studio discussions is an essential part of the grade, as is regular and thoughtful maintenance of your studio notebook.
Grading Breakdown:
   Project 1: 15%
   Project 2: 20%
   Project 3: 25%
   Project 4: 25%
   Portfolio: 5%
   Participation: 10%

A minimum grade of ‘C’ is required to continue on to the next semester in the studio sequence. Consult University policies for IN (incomplete) grades and deadlines for withdrawal (‘W’ grade). University guidelines on plagiarism pertain to original design work. Students are expected to do all of their own design and presentation work. Substantial assistance in the form of model construction and drawing preparation, or deliberate appropriation of the design work of others will be considered non-original work and will be treated as plagiarism. See “Academic Integrity” section below for more information.

Attendance
It is essential and required for all students to be on time and present for all studio meetings, class lectures, field trips, and reviews. Lateness and absences will be recorded and can seriously affect course grades. A maximum number of two absences are allowed without direct impact to the student's grade. A student's overall semester evaluation may be lowered by up to a full letter grade for each additional absence. Any student not in class within the first 10 minutes of class is considered late. Three instances of lateness equal one absence. Any student absent for more than 1/3 of any class period (in any form including lateness, sleep, technological distraction, bathroom break, etc.) will be considered absent. Excused absences must be in writing and must be approved by the studio instructor. It is always the student's responsibility to seek the means and make up for work missed due to any type of absence. Dates called out in the syllabus as review dates are considered examination periods. Absences on project review dates may lead to automatic failure of the assignment unless pre-approved by the instructor. Such an absence may only be due to personal illness, family emergency or religious observance. The
University recognizes the diversity of our community and the potential for conflicts involving academic activities and personal religious observation. See: http://orl.usc.edu/religiouslife/holydays/

**Zoom Etiquette**

**Circumstances for permitted Zoom use:**

This course is designed to be conducted in-person to maximize the learning experience. However, understanding that there may be exceptional circumstances, Zoom may be used under the following circumstances, with prior permission from the instructor:

- Illness or Medical Reasons: Students who are unable to attend class due to illness, medical conditions, or medical appointments can request to participate via Zoom to maintain continuity in their learning.
- Emergency Situations: In cases of persona emergencies or unforeseen circumstances (such as family emergencies or severe weather conditions) that prevent physical attendance, students may use Zoom as a temporary solution.

**Requesting permission:**

- Students must email the instructor at least 24 hours in advance to request permission to attend a class session via Zoom.
- The email should clearly state the reason for the request and, if applicable, any supporting documentation may be required.

When permission is granted, the student is required to attend on time and stay for the whole session. The video camera should be kept on throughout the session when possible.

**Studio Protocol**

Apart from lectures, reviews and field trips, instructors will meet with students in their separate studio sections. It is imperative to respect the quality of this unique creative environment and the work of others, during and outside of class hours.

- **Work Area** – Students are to immediately set up and maintain a fully operational workspace for drawing and modelmaking. It is strongly encouraged that students work in their studio workspace for this course and all other courses so that they may fully participate in and benefit from the productive exchange of ideas, informal discussions and critical dialogs that are central and unique to the studio environment.
- **Hours** – Apart from lectures, reviews, and trips students are expected to be present in studio and productively engaged in studio work for the duration of the class meeting time (2:00 – 5:50pm Mondays and Thursdays).
- **Food** – Food and drink in studio during class hours are strictly prohibited and can cause accidental spills that destroy equipment and other student work.
- **Music, Noise, and Cell Phone Use** – Studio is a shared work environment. Students shall demonstrate courtesy to others by always wearing headphones when listening to music, and by keeping voices low. Ringers are to be turned off and phones put away during class. Except in cases of emergency, students should not be on their phones during class, lectures, or reviews. Outside of class hours, students are to keep ringers on low and take all calls outside of studio.
- **Computer Use** – Apart from software demonstrations, there will be limited computer use during class time. All assigned work is required to be printed in time for (i.e. well before) the beginning of class.
- **Digital Resources** – A limited number of desktop computers, printers and a plotter are provided in studio, for work and digital output. Additional machines are available in other studios and in digital labs on campus. Time management and consideration of others is strongly advised in the use of these shared, finite resources.
- **Access** – Swipe card access to the studio with a USC ID is provided as a safeguard for students and their possessions. DO NOT PROP OPEN STUDIO DOORS. As a general precaution, students are to be mindful of their surroundings and watch for suspicious activity or unfamiliar faces. Students may contact the University’s Department of Public Safety at (213) 740-4321 to report suspicious activity and/or request security personnel.
- **Clean-up, Trash, and Recycling** – Trash and recycling bins are located throughout the studio. Students are advised to make use of them by sorting and disposing of trash in the appropriate receptacles and to keep their studio spaces clean. Food waste should not be disposed of in studio trash bins.
- Knife Blades – Used knife blades pose a danger to University cleaning staff and others. DO NOT place used knife blades directly into trash bins or leave them on the ground or work surfaces. Collect used bladed in a sealed container and then discard.
- Graffiti, Defacement of Property – Defacement of property belonging to the school or others will not be tolerated. Make use of provided butcher paper for messy tasks. NEVER SPRAY Indoors. All aerosol sprays (glue, paint, etc.) must be used outside in conjunction with drop cloths to contain overspray.
- USC Smoke Free and Drug Free - The university is committed to promoting a healthy, safe, and comfortable environment for all students, faculty, staff, and visitors. Smoking is prohibited in all indoor and outdoor facilities on university-owned and leased property with no exception. This includes all university teaching, research, clinical and office spaces. For purposes of this policy, smoking is defined as inhaling, exhaling, burning, carrying, or possessing any lighted cigarette, cigar, pipe, electronic cigarette, hookah, or other lit product and including the use of any substance, including but not limited to tobacco, cloves, or marijuana. Refusal by students to comply with this policy may result in appropriate disciplinary action. In addition, unauthorized use, possession or dissemination of alcohol, tobacco products, unauthorized or illegal drugs, or drug-related paraphernalia in the university community or at university-sponsored activities, is prohibited. (See SCampus, Part B, Section 11; SCampus, Part F, Sections 4 and 5.)

Academic Integrity
The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university’s mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the USC Student Handbook. All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or “recycle” work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity’s website, and university policies on Research and Scholarship Misconduct.

Policy for the use of AI Generators
Since creating, analytical, and critical thinking skills are part of the learning outcomes of this course, all assignments should be prepared by the student working individually or in groups. Students may not have another person or entity complete any substantive portion of the assignment. Developing strong competencies in these areas will prepare you for a competitive workplace. Therefore, using AI-generated tools (including but not limited to: Midjourney, Chat GPT, Adobe AI Tools) is prohibited in this course, will be identified as plagiarism, and will be reported to the Office of Academic Integrity.

Disability Accommodations and Support Systems
USC welcomes students with disabilities into all of the University’s educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in
the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Sustainability Initiative
The School of Architecture has adopted the 2010 Initiative for Sustainability. Solutions to design problems must engage the environment in a way that dramatically reduces or eliminates the need for fossil fuel.

NAAB Accreditation
The USC School of Architecture’s five year B.Arch degree and the two year M.Arch degree are accredited by the National Architecture Accreditation Board (NAAB). Conditions for accreditation can be found at: https://www.naab.org/wp-content/uploads/2020-NAAB-Conditions-for-Accreditation.pdf.

Course Responsibilities: As a required course for an accredited professional degree program, this course is accountable for achieving learning outcomes associated with the following NAAB Criteria.

Program Criteria:

PC.2 Design: This course introduces students to the role of the design process in shaping the built environment and introduces methods by which design processes integrate multiple factors, in different settings and scales of development, from buildings to cities primarily through lectures.

PC.4 History and Theory: Lectures will incorporate several sources and references to histories and theories of architecture and urbanism, some framed by diverse social, cultural, economic, and political forces, nationally and globally.

PC.7 Learning and Teaching Culture: All students and faculty in the M.Arch and B.Arch programs prescribe to the Studio Culture Document. This document fosters a positive and respectful learning environment that encourages the fundamental values of optimism, respect, sharing, engagement, collaboration, and innovation between and among all members of our community, and innovation among its faculty, students, administration, and staff.

Student Criteria:

SC.4 Technical Knowledge: This course provides students an introduction to software including Rhino and Adobe Illustrator and Photoshop, and workflows to navigate between these applications. Students are introduced to basic drawing conventions through orthographic drawings including plans, sections, and elevations as well as axonometric drawings, as well as basic rendering and digital collaging skills.

SC.5 Design Synthesis: This course introduces students to exercises that develop their ability to make design decisions through teaching students about translation and creation of 2D orthographic drawings, the use/creation of 3D models, and an iterative approach to design.

All students can access and review NAAB Conditions of Accreditation (including student performance criteria) on the NAAB website at http://www.naab.org/accreditation/
Support Systems:

**Counseling and Mental Health** - (213) 740-9355 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

**988 Suicide and Crisis Lifeline** - 988 for both calls and text messages – 24/7 on call
The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

**Relationship and Sexual Violence Prevention Services (RSVP)** - (213) 740-9355(WELL) – 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

**Office for Equity, Equal Opportunity, and Title IX (EEO-TIX)** - (213) 740-5086
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

**Reporting Incidents of Bias or Harassment** - (213) 740-5086 or (213) 821-8298
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

**The Office of Student Accessibility Services (OSAS)** - (213) 740-0776
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

**USC Campus Support and Intervention** - (213) 740-0411
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

**Diversity, Equity and Inclusion** - (213) 740-2101
Information on events, programs and training, the Provost’s Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

**USC Emergency** - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

**USC Department of Public Safety** - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call
Non-emergency assistance or information.

**Office of the Ombuds** - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

**Occupational Therapy Faculty Practice** - (323) 442-2850 or otpf@med.usc.edu
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.