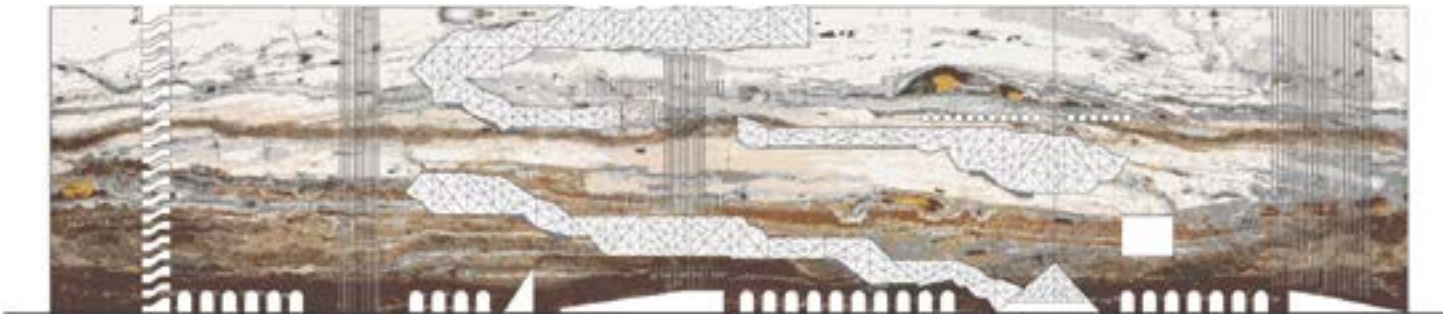
ARCH 113 | Visual and Digital Media II



Galleria Department Store Elevation by OMA, digital media, 2020.

Schedule

Fridays 9:30AM-12:30PM, 1:30PM-5:30PM EST

Location

E-classroom, Cambridge campus

Instructor

Isabel Ochoa (she/her) – iochoa@uwaterloo.ca

Teaching Assistants

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Territorial Acknowledgment

We acknowledge that the School of Architecture is located on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. The University is situated on the Haldimand Tract, the land promised to the Six Nations that includes 10 kilometres on each side of the Grand River. (See references here: https://uwaterloo.ca/engineering/about/territorial-acknowledgement)

Course Description

ARCH 113 introduces students to computing techniques for architectural drawing. Building on the graphic practices acquired in ARCH 110, ARCH 113 engages students in 3D modelling and digital representation to develop design ideas and effectively convey spatial information. Throughout the term, architectural representation will be utilized as a tool for two purposes:

1. **Research –** Involves utilizing drawings and models to learn about, test and challenge design ideas. ARCH 113 will focus on exploring the role of digital tools in architectural design.

2. **Communication –** Involves conveying design objectives to others. The success of a design project relies on our ability to communicate its intent clearly and thoughtfully. Architectural drawing is therefore both a tool and a craft. This course seeks to equip students with a technical and analytical skill set applicable from conceptualization to production in the process of design.

ARCH 113 will act as a support course for work developed in ARCH 193: Design Studio. Lectures and tutorials will provide students with a practical understanding of architectural drawing conventions and digital workflows. Students are expected to develop their visual communication skills by applying drawing conventions and digital workflows with precision and intent. Lab assignments will provide the opportunity to research and explore possibilities for innovative extensions of these practices.

There are endless software and digital workflows that can broaden the scope of our creative projects. These tools are constantly evolving in parallel with standards across the architectural profession. They can rapidly change or become obsolete. Therefore, maintaining fluid digital literacy requires both knowledge of the operations available to designers as well as an understanding of how to engage digital media, regardless of the specific tools. For the purposes of this course, we will be working across the following digital platforms:

- **Rhinoceros** will be the primary software used for Computer Aided Drafting (CAD) and Computer Aided Modelling (CAM).
- **Enscape** will be the primary software used for rendering.
- **Adobe Photoshop CC** will be used for editing raster graphics.
- **Adobe Illustrator CC** will be used for creating and editing vector graphics.
- **Adobe InDesign CC** will used for creating and editing layouts.

As you continue to build on your representational toolkit throughout the term, it is important to continually question the efficacy of your newly acquired digital workflows. While software can increase efficiency and broaden creative scope, it can also be distracting, time-consuming and detrimental to a project when used without thoughtful consideration. There is a high level of abstraction that occurs when we move away from orthographic drawing to 3D modelling. Without context and scale to ground our work in 3D space, it is easy to become absorbed in needless details or conceive of the buildings we design without experiential considerations. As a result, we will spend time discussing how to use software nimbly and productively.

Course Goals and Learning Outcomes

- Develop a practical understanding of architectural drawing conventions and techniques.
- Make appropriate and creative decisions in presenting work.
- Utilize architectural drawing as a method of inquiry to support design processes.
- Learn and apply the fundamentals of 2D drawing and 3D modelling.
- Learn and apply the fundamentals of digital graphics including raster graphics, vector graphics and layouts.
- Build adeptness and critical intuition for digital representation workflows. This means determining what are the most appropriate methods of digital craft and how to use them.
- Gather and evaluate architectural drawing precedents to build graphic literacy.
- Establish healthy habits for successful digital workflows and collaboration.

CACB Student Performance Criteria

The BAS/MArch program enables students to achieve the accreditation standards set by the Canadian Architectural Certification Board as described here. This course addresses the CACB criteria and standards that are noted on the Accreditation page of the School of Architecture website. For ARCH 113, these student performance criteria include, but are not limited to:

A3. Design Tools

"The student must demonstrate an ability to use the broad range of design tools available to the architectural discipline, including a range of techniques for two-dimensional and three-dimensional representation, computational design, modeling, simulation, and fabrication."

A8. Design Documentation

"The student must demonstrate an ability to document and present the outcome of a design project using the broad range of architectural media, including documentation for the purposes of construction, drawings, and specifications."

Structure

Class time will be split between four sections:

Lectures (~0.5-1hr) – Will focus on examining drawing conventions and methods of architectural representation as well as their applications and efficacy across different contexts. Each week we will look at a set of drawing types that form part of your deliverables for ARCH 193.

Tutorials (~1-2hrs) – Will focus on digital skill acquisition. These tutorials will explain the fundamental tools required to complete the course work. However, it is expected that you utilize architectural drawing as a mode of inquiry to advance your skill set beyond this training. Tutorials will set up the framework for completing weekly lab assignments.

Labs (~4hrs) – Support for the completion of lab assignments is provided by teaching assistants on Friday afternoons in the Loft. Students are strongly encouraged to work on course deliverables at these times.

Drawing Workshops (~6hrs) – Will facilitate group discussions around course work and graphic practices. Drawing workshops are an opportunity for students to provide and receive direct feedback from both their colleagues and the teaching team on their work. Attendance during drawing workshops is mandatory and students are evaluated based on their participation.

Resources

There are no required textbooks for this course. Students are strongly encouraged to reference publications and digital media as a way of developing graphic literacy.

Hardware requirements:

- Working laptop and mouse.
- External hard drive for regular file back-ups.

Software requirements:

- Rhinoceros 7 or Rhinoceros 8
- Enscape
- Adobe Photoshop CC
- Adobe Illustrator CC
- Adobe InDesign CC

*Note: Students may use the Enscape free trial to complete the course requirements. To do so, please wait until prompted by the instructor so that you have sufficient time to complete the labs during the 14-day trial period. Purchase of Enscape for use during the entire term is recommended but not necessary. Students may use any other rendering software of their choice to complete the course work. Other rendering software will not be taught during the course.

Course Requirements and Assessment

Students must complete all exercises and obtain a passing average to receive credit for this course. Course assessment will be broken up into three sets of deliverables:

Labs 1-8 – *60% of total grade*

- 4 labs @5% each, 4 labs @10% each
- Lab assignments are structured as exercises to be completed during class time.

Final Assignment – *30% of total grade*

Participation in Drawing Workshops – *10% of total grade*

- 2 workshops @3% each, 1 workshop @4%

In addition to the criteria provided as part of each assignment outline, all submissions will be evaluated on:

- Completion of deliverables.
- Craft, clarity and precision of the work.
- Demonstrated understanding of digital skill set acquired during tutorials.
- Consideration of compositional principles and communication techniques covered during lectures.

Course Delivery Platforms and Communication

The following platforms will be used to deliver, organize, and share course content:

- **LEARN –** Course documents, recorded lectures, work submission, grade recording and release.
- **Email –** Official communications including communications outside of class hours.

Response times for communication outside class time with the teaching team will be up to 24 hours, Monday to Friday 9AM-6PM EST. Please use **email only** to communicate with the teaching team outside of class hours.

When asking the teaching team for digital support, please follow these protocols:

- Include files in question.
- List the steps you have already taken in problem-solving.
- Include images and notes of what you are trying to achieve.

Covid-19 Special Statement

Given the continuously evolving situation around COVID-19, students are to refer to the University of Waterloo's developing information resource page (https://uwaterloo.ca/coronavirus/) for up-to-date information on academic updates, health services, important dates, co-op, accommodation rules and other university level responses to COVID-19.

Notice of Recording

Technical tutorials in ARCH 113 will be recorded for students to reference during completion of course deliverables. The course's official Notice of Recording document will be found on the course's LEARN site. This document outlines shared responsibilities for instructors and students around issues of privacy and security. Each student is responsible for reviewing this document.

Fair Contingencies for Emergency Remote Teaching

To provide contingency for unforeseen circumstances, the instructor reserves the right to modify course topics and/or assessments and/or weight and/or deadlines with due and fair notice to students. In the event of such challenges, the instructor will work with the Department/Faculty to find reasonable and fair solutions that respect rights and workloads of students, staff, and faculty.

Late Work

Course deliverables that are handed in late will receive a penalty of 2% per hour submitted beyond the deadline. Course deliverables handed in 24 hours beyond the deadline will receive 0%.

ARCH 113 relies on digital tools to complete all course deliverables. Students are expected to work diligently to ensure all assignments are submitted on time. Digital fluency, including file and software maintenance, are critical to both your academic success as well as your professional development. Computer crashes, corrupt files or forgetting to save or back-up will not be acceptable excuses for late submissions.

Only in the case of a justified medical or personal reason will these penalties be waived. For verified health concerns, please discuss this with your instructor before submitting a Verification of Illness Form (VIF) to the Academic Services Coordinator and Associate Director, in the Undergraduate Office. Personal extenuating circumstances need to be communicated to your instructor who will coordinate with the Undergraduate Office as needed. This is not the same as the AccessAbility Accommodations or the short term absence process. Information on COVID-19 is available here.

Passing Grades

The standard minimum passing grade in each ARCH course is 50% with the following exceptions: the minimum passing grade is 60% for all studio courses (ARCH 192, ARCH 193, ARCH 292, ARCH 293, ARCH 392, ARCH 393, ARCH 492, and ARCH 493). Grades below the specified passing grade result in a course failure.

Mental Health Support

All of us need a support system. We encourage you to seek out mental health supports when they are needed. Please reach out to Campus Wellness (https://uwaterloo.ca/campus-wellness/) and Counselling Services (https://uwaterloo.ca/campus-wellness/counselling-services). We understand that these circumstances can be troubling, and you may need to speak with someone for emotional support. Good2Talk (https://good2talk.ca/) is a post-secondary student helpline based in Ontario, Canada that is available to all students.

Equity Diversity and Inclusion Commitment

The School of Architecture is committed to foster and support equity, diversity and inclusion. If you experience discrimination, micro-aggression, or other forms of racism, sexism, discrimination against 2SLGBTQ+, or disability, there are several pathways available for addressing this:

A) If you feel comfortable bringing this up directly with the faculty, staff or student who has said or done something offensive, we invite you, or a friend, to speak directly with this person. People make mistakes and dealing them directly in the present may be the most effective means of addressing the issue.

B) You can reach out to either the Undergraduate office, Graduate office, or Director (Maya Przybylski). If you contact any of these people in confidence, they are bound to preserve your anonymity and follow up on your report.

C) You can choose to report centrally to the Equity Office. The Equity Office can be reached by emailing equity@uwaterloo.ca. More information on the functions and services of the equity office can be found here: https://uwaterloo.ca/human-rights-equity-inclusion/about/equity-office.

D) Racial Advocacy for Inclusion, Solidarity and Equity (RAISE) is a student-led Waterloo Undergraduate Student Association (UWSA) service launching in the Winter 2019 term. RAISE serves to address racism and xenophobia on the University of Waterloo campus with initiatives reflective of RAISE's three pillars of Education and Advocacy, Peer-to-Peer Support, and Community Building. The initiatives include but are not limited to: formal means to report and confront racism, accessible and considerate peer-support, and organization of social events to cultivate both an uplifting and united community. You can report an incident using their online form.

Academic Integrity, Grievance, Discipline, Appeals, and Note for Students with Disabilities

Academic integrity – In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check the Office of Academic Integrity for more information.]

Grievance – A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4. When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline – A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for their actions. [Check the Office of Academic Integrity for more information.] A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate associate dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline. For typical penalties, check Guidelines for the Assessment of Penalties.

In general, you are required to undertake work that you represent as yours by yourself, without copying or adapting work by other, with the exception of work that you derive from others and in turn credit to those others. 'Others' includes AI tools. All work derived from others must be appropriately cited.

AI Policy – In this course, students are discouraged from utilizing Generative Artificial Intelligence (GenAI) derived from large language models (LLM) or alternative methods to generate text, images, music, or code, such as Chat GPT, DALL-E, or GitHub CoPilot, in support of their design work. However, students with a compelling rationale for employing Generative AI are encouraged to engage in a discussion with their instructor. In exceptional circumstances, approval may be granted for the use of Generative AI. This policy is implemented to safeguard the optimal learning outcomes by mitigating the risk of fabricated references and misinformation.

In emphasizing this approach, it is crucial for students to prioritize the acquisition of fundamental design principles before integrating Generative AI into their creative processes. A solid grounding in design fundamentals not only enhances their ability to effectively utilize Generative AI tools but also cultivates critical thinking and creativity, fortifying their capacity to discern and refine the output of AI applications. This intentional focus on design foundations ensures a well-rounded skill set and contributes to the creation of more authentic and purposeful design work.

In the event that Generative AI is permitted, in order to maintain academic integrity, students must disclose any AI-generated material they use and properly document, cite and attribute it. This disclosure should include AI generation whether in whole or part, including images, designs, in-text citations, quotations, and references. The full extent of images and text passages should be cited. Recommendations for how to cite generative AI in student work at the University of Waterloo may be found through the Library: https://subjectguides.uwaterloo.ca/chatgpt_generative_ai. Please be aware that generative AI is known to falsify references to other work and may fabricate facts and inaccurately express ideas. GenAI generates content based on the input of other human authors and may therefore contain inaccuracies or reflect biases.

In addition, you should be aware that the legal/copyright status of generative AI inputs and outputs is unclear. Exercise caution when using large portions of content from AI sources, especially images. More information is available from the Copyright Advisory Committee: https://uwaterloo.ca/copyright-at-waterloo/teaching/

generativeartificial-intelligence. You are accountable for the content and accuracy of all work you submit in this class, includingany supported by generative AI.

Caution: When using AI tools, it is important to be aware that the user data supplied might be utilized for training AI models or other purposes. Consequently, there is no guarantee that the information you provide will remain confidential. Instructors and students should exercise caution and avoid sharing any sensitive or private information when using these tools. Examples of such information include personally identifiable information (PII), protected health information (PHI), financial data, intellectual property (IP), and any other data that might be legally protected.

Discouraged Generative AI Uses:

- Using ChatGPT to dimension your structural system (high risk of misinformation).
- Using Midjourney, DALL·E 2, or Stable Diffusion to generate your rendering without reference to your Rhino model or constructed views, resulting in lack of control over the final image and inconsistency with plans, sections, and digital modeling (high risk of infringement of AI on human design originality).

Generative AI Resources:

- https://uwaterloo.ca/writing-and-communication-centre/Resources-AI-Overview
- https://subjectguides.uwaterloo.ca/chatgpt_generative_ai
- https://uwaterloo.ca/associate-vice-president-academic/artificial-intelligence-uw

Appeals – A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72, Student Appeals.

Note for students with disabilities – AccessAbility Services, located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.

Turnitin.com – Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course. It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January 8	9	10	11	12 T01 Intro to 3DM A01 Assigned	13 **A01 (Fragment) Due**	14
15 **113 - Make up day** **T02 - Paralines**	16	17	18	19 **No class**	20	21
22 **A02 (Axo) Due**	23	24	25	26 T03 Indesign A03 Assigned	27	28
29	30	31	**February** 1 **A03 (Layout) Due**	2 **W01 Layout**	3	4
5	6	7	8	9 T04 Workflows A04 + A05 Assigned	10	11
12	13	14	15	16 **No class** **A04 (Site PT1) Due**	17	18
19 Reading Week	20	21	22	23	24	25
26	27	28	29 **A05 (Site PT2) Due**	**March** 1 **W02 Site Presentations**	2	3
4	5	6	7	8 T05 Photoshop 1 A06 Assigned	9	10
11	12	13	14	15 T06 Photoshop 2	16	17
18 **A06 (Raster Graphics) Due**	19	20	21	22 T07 Rendering A07 + A08 Assigned	23	24
25	26	27	28	29 **No class** **A07 (Rendering) Due**	30	31
April 1	2	3	4 **A08 (Sectional Perpective) Due**	5 **W03 Sectional Perspective**	6	7
8 Classes End	9	10	11	12	13	14
15 Admissions week	16	17	18	19	20	21
22	23	24	25 **A09 (CISC) Due** Last Day of Exams	26	27	28