Comprehensive Design Studio ARCH 616

Winter 2021

Instructors: Jordan Allen, Erin Faulkner, Keir Stuhmiller, Phil Vandermay, Marc Boutin (Course Manager)

Class Dates and Times:

Mandatory real-time Zoom classes Tuesdays and Fridays, January 11 – April 20, 2pm – 6pm

Email Policy:

Please note that all course communications must occur through your @ucalgary email, and the instructors will respond to emails sent via student's @ucalgary emails within 48 hours.

SYNTHESIZING ECOLOGIES

Course Information and Description

This course is the fourth studio in the Master of Architecture Program sequence and is the capstone studio experience prior to students entering into the Senior Studio rotation.

Architecture is a synthetic act, constructing both its ideation and its material manifestation through the assimilation and translation of broad-based and varied knowledge bases. Because of this, it deploys a wide range of exploration and communication strategies during the design and documentation processes. This studio is characterized by this very circumstance: the exploration and strategic interface of diverse contexts and the creation of innovative form with ecological, social, technological and cultural agency through the orchestration of the full spectrum of design considerations: urban ecologies, environmental, cultural and social contexts, programme interpretation, the integration of building and accessibility systems, and the examination of building regulations and codes.

This fulsome consideration of the factors that must align in the creation of architecture reminds us of the challenge set forth by the Vitruvian Triad, that is, that architecture is necessarily the interface between *Firmitas, Utilitas, and Venustas.* This argument suggests that architectural beauty is an emergent one, one that is innovatively created through the consideration of a client's (and city's) program and needs, and of the external forces that impact the quality of architecture as shelter: gravity, climate, materiality. From the creative consideration of these two factors, an architectural beauty emerges that is unique to that site and the client's circumstances as an orchestrated whole.

This 'comprehensiveness' of Comprehensive Design Studio is reflected in the course's Canadian Architectural Certification Board (CACB) Student Performance Criteria outlined below.
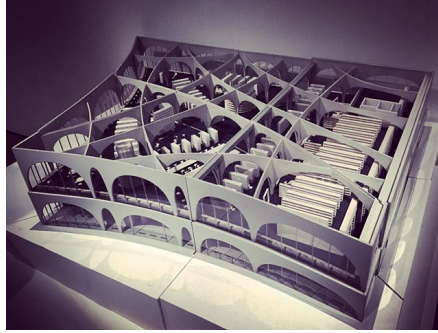
Online Delivery

This course will take place online via Zoom. Students are required to participate in the synchronous Zoom sessions, while completing the design assignments as indicated within the course outline during studio timeframes as well as in their own time. If unable to participate live due to unforeseen circumstances, inform the instructor in advance to work out an alternative participation activity. Students are expected to participate actively in all Zoom sessions and to turn on their webcam. Please join our class in a quiet space that will allow you to be fully present and engaged in the Zoom sessions. Students must behave in a professional manner during the session. Students, employees, and academic staff are also expected to demonstrate behaviour in class that promotes and maintains a positive and productive learning environment.

To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

The use of video conferencing programs relies on participants to act ethically, honestly and with integrity; and in accordance with the principles of fairness, good faith, and respect (as per the Code of Conduct). When entering Zoom or other video conferencing sessions (such as MS Teams), you play a role in helping create an effective, safe and respectful learning environment. Please be mindful of how your behaviour in these sessions may affect others. Participants are required to use names officially associated with their UCID (legal or preferred names listed in the Student Centre) when engaging in these activities. Instructors/moderators can remove those whose names do not appear on class rosters. Non-compliance may be investigated under relevant University of Calgary conduct policies (e.g Student Non-Academic Misconduct Policy). If participants have difficulties complying with this requirement, they should email the instructor of the class explaining why, so the instructor may consider whether to grant an exception, and on what terms. For more information on how to get the most out of your zoom sessions visit: https://elearn.ucalgary.ca/guidelines-for-zoom/

If you are unable to attend a Zoom session, please contact your instructor in advance to arrange an alternative activity for the missed session (e.g., to review the recorded session). Please be prepared, as best as you are able, to

join class in a quiet space that will allow you to be fully present and engaged in Zoom sessions. Students will be advised by their instructor when they are expected to turn on their webcam (for group work, presentations, etc.).

The instructor may record online Zoom class sessions for the purposes of supporting student learning in this class – such as making the recording available for review of the session or for students who miss a session. Students will be advised before the instructor initiates a recording of a Zoom session. These recordings will be used to support student learning only and will not be shared or used for any other purpose.

Technology Requirements:
In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam (built-in or external)
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Broadband internet connection

Course Learning Outcomes

1. To develop design skills through the creation of a medium-sized project based on the understanding and critical engagement of an urban condition and its related environmental context.
2. To develop the skills to critically interpret a program and develop its programming appropriate and contributive to the project's design intentions.
3. To develop the skills to critically interpret structural, mechanical, and electrical building systems towards their capacity to contribute to the project's design intentions.
4. To develop the skills to explore and document ideation from conception through its manifestation in tectonic culture, material culture, and technical definitions appropriate for communicating complexity.
5. To develop an awareness of regulatory contexts and a capacity to deploy them within the logic of the project's intentions.

Teaching Approach
In this studio there will be five studio sections, each necessarily covering the same fundamental material and deliverables, based on the Architecture Program's established pedagogy. Within this overall pedagogical and studio delivery framework, each instructor can particularize the studio experience strategically. Each instructor will provide detailed project descriptions throughout the semester, based on the studio framework. Guidance and feedback will be provided during regular desk crits, informal lectures, and formal reviews.

The design work will be done in pairs, however, each individual student is requested to explore and document their design thinking in a Comprehensive Design Studio Sketchbook, to be used during on-line desk crits and submitted at the end of term.

The course will be appropriately dovetailed with building technology courses, creating the necessary dialogue between the development of technological knowledge bases and their strategic applicability to contribute to the conceptual framework of the studio project, and its development into resolved building solutions.
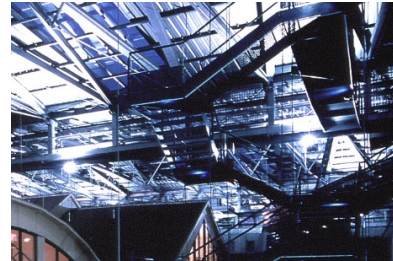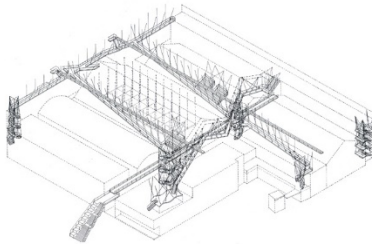
Program and Site

Each pair of students will design a medium-sized, cultural facility of approximately 2,000 m^2. The specific cultural program (library, art gallery, museum, performing arts centre, etc) is to be determined by the Studio Instructor in each Studio Section. Key programmatic components to be explored regardless of the cultural program are a large collective space connected to a designed exterior space, related foyer and entry spaces, smaller public ancillary spaces that support the major collective space including community spaces, administrative and support offices, an archive, research space, storage spaces, shipping and receiving spaces, and washroom and mechanical service spaces. Underground parking facilities will need to be provided and access to this parkade to be designed.

The site for this studio is the northeast parcel of land defined by 11th Street and 7th Ave SW, immediately north of Kerby Station of the C Train line, and east across 11th Street from Contemporary Calgary. This site transitions the scale of the urban fabric, links to public transit, and has a potential connection to Millennium Park. Explicit in this site is the considered addressal of an urban condition full of opportunities to successfully bracket the western edge of the city.

Canadian Architectural Certification Board (CACB) Student Performance Criteria (SPC): The following CACB Student Performance Criteria will be covered in this course at a primary level:

A1. **Design Theories, Precedents, and Methods**. The student must demonstrate an *ability* to articulate a design process grounded in theory and practice, an understanding of design principles and methods, and the critical analysis of architectural precedents.

A2. Design Skills. The student must demonstrate an *ability* to apply design theories, methods and precedents to the conception, configurations, and design of buildings, spaces, building elements, and tectonic components.

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.

A4. Program Analysis. The student must demonstrate an *ability* to analyse and respond to a complex program for an architectural project that accounts for client and user needs, appropriate precedents, space and equipment requirements, the relevant laws, and site selections and design assessment criteria.

A5. Site Context and Design. The student must demonstrate an *ability* to analyze and respond to local site characteristics, including urban, non-urban, and regulatory contexts; topography; ecological systems; climate; and building orientations in the development of an architectural design project.

A7. Detail Design. The student must demonstrate an *ability* to assess, as an integral part of design, the appropriate combinations of material, components, and assemblies in the development of detailed architectural elements through drawing, modeling, and/or full-scale prototypes.

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.

B1. Critical Thinking and Communication. The student must demonstrate an ability to reach clear and precise questions; record, assess and comparatively evaluate information; synthesize research findings and test potential alternative outcomes against relevant criteria and standard; reach well-supported conclusions related to a specific project or assignment; and write, speak, and use visual medial effectively to appropriately communicate on subject matter related to the architectural discipline with the profession and with the general public.

B5. Ecological Systems. The student must have an *understanding* of the broader ecologies that inform the design of buildings and their systems and of the interactions among these ecologies and design decisions.

C1. Regulatory Systems. The student must have an *understanding* of the applicable building codes, regulations, and standards for a given building and site, including universal design standards, and the principles that inform the design and selection of life-safety systems.

C2. Materials. The student must have an *understanding* of the basic principles used in the appropriate selection and application of architectural materials as it relates to fundamental performance, aesthetics, durability, energy, resources, and environmental impact.

C3. Structural Systems. The student must have an *understanding* of the principles of structural behavior in withstanding gravitational, seismic, and lateral forces, including the selection and application of appropriate structural systems.

C4. Envelope Systems. The student must have an *understanding* of the basic principles used in the design of building envelope systems and associated assemblies relative to fundamental performance, aesthetics, durability, energy, material resources, and environmental impact.

C5. Environmental Systems. The student must have an *understanding* of the basic principles that inform the design of passive and active environmental modification and building service systems, the issues involved in the coordination of these systems in a building, energy use and appropriate tools for the performance assessment, and the codes and regulations that govern their application in buildings.

D1. Comprehensive Design. The student must demonstrate an *ability* to produce an architectural design based on a concept, a building program, and a site which broadly integrates contextual factors, structural and environmental systems, building envelopes and assemblies, regulatory requirements, and environmental stewardship.

Learning Resources

AIA, *Architectural Graphic Standards* (12th edition). New York, 2016.

Allen, Edward and Iano, Joseph. The Architect's Studio Companion: Rules of Thumb for Preliminary Design (Sixth Edition). New York: Wiley, 2017.

Allen, Edward and Iano, Joseph. *Fundamentals of Building Construction: Material and Methods* (Sixth Edition). New York: Wiley, 2013.

Brock, Linda. *Designing the Exterior Wall: An Architectural Guide to the Vertical Envelope*. New York: Wiley, 2005.

Ching, Francis DK. And Adams, Cassandra. *Building Construction Illustrated* (5th Edition). New York: Wiley, 2014

Hegger, Manfred et al. *Energy Manual: Sustainable Architecture*, Basel: Birkhauser, 2008.

Lechner, Norbert. *Heating, Cooling, Lighting: Sustainable Design Methods for Architects.* New York: Wiley, 2008.

Schittich, Christian. *Building Skins: Concepts, Layers, Materials*. Basel: Birkhauser, 2001.

Course Expectations, Assessment Components, and Course Schedule

Students are expected to complete all assignments, be present in the on-line studio on Tuesdays and Fridays (and on other studio days as required) and attend all on-line lectures and reviews. Students will also be expected to read any assigned readings. Detailed project descriptions will be provided throughout the term by studio instructors. The following is the overall studio schedule and the general breakdown of assignments:

Phase 1	Research, Site Analysis/Interpretation, Programming, Design Conceptualization	20%
	Tuesday January 12 – Tuesday, February 9 (4 weeks)	
	REVIEW: Tuesday February 9	
Mid-term Break	February 16 – 20	
Block Week	March 15 -19	
Phase 2	Design Development, Materials, Assemblies	20%
	Tuesday, February 9 – Friday, March 13 (4 weeks)	
	REVIEW: Friday March 13	
Phase 3	Design Development, Environmental Systems Integration	10%
	Tuesday, March 23 – April 2 (2 weeks)	
	Each Studio Section Instructor to invite a Structural and Mechanical Engineer for the desk crits in this phase of the project.	
	REVIEW: Friday April 2	

Phase 4	Final Design and Presentation	40%
	Tuesday April 6 – April 20, 21, 22, 23 or 24 (2 weeks)	
	Final Review: Date to be determined	

Good Friday	April 2 (no classes)

Final Reviews	April 20 - 24

Phase 5	Final Portfolio and Sketch Book Submission, Date to be determined	10%

Note: A passing grade in all assignments is required in order to pass the course as a whole.

Late Assignments will lose a letter grade every 24 hours it is submitted after the submission date.

Expectations for Writing (https://www.ucalgary.ca/pubs/calendar/current/e-2.html):

Grading Scale

Grade	Grade Point Value	4-Point Range	Percent	Description
A+	4.00	4.00	95-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	90-94.99	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	85-89.99	Very good performance
B+	3.30	3.15-3.49	80-84.99	Good performance
B	3.00	2.85-3.14	75-79.99	Satisfactory performance
B-	2.70	2.50-2.84	70-74.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	65-69.99	All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.

C	2.00	1.85-2.14	60-64.99	
C-	1.70	1.50-1.84	55-59.99	
D+	1.30	1.15-1.49	50-54.99	
D	1.00	0.50-1.14	45-49.99	
F	0.00	0-0.49	0-44.99	

A student who receives a "C⁺" or lower in any one course will be required to withdraw regardless of their grade point average (GPA) unless the program recommends otherwise. If the program permits the student to retake a failed course, the second grade will replace the initial grade in the calculation of the GPA, and both grades will appear on the transcript.

University of Calgary Policies and Supports

COVID-19 PROCEDURE FOR SICK STUDENTS: https://ucalgary.ca/risk/sites/default/files/Covid-19%20Folder/COVID-19-Procedure-for-Sick-Students.pdf

ACADEMIC ACCOMMODATION
It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is available at https://ucalgary.ca/student-services/access/prospective-students/academic-accommodations.
Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities (https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf). Students who require an accommodation in relation to their coursework based on a protected ground other than Disability should communicate this need in writing to their Instructor.
SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/ .

ACADEMIC MISCONDUCT
Academic Misconduct refers to student behavior which compromises proper assessment of a student's academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

For information on the Student Academic Misconduct Policy and Procedure please visit:
https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf
https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf

Additional information is available on the Academic Integrity Website at https://ucalgary.ca/student-services/student-success/learning/academic-integrity.

COPYRIGHT LEGISLATION:
All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf) and requirements of the copyright act (https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy (https://www.ucalgary.ca/pubs/calendar/current/k.html).

INSTRUCTOR INTELLECTUAL PROPERTY
Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY
Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

SEXUAL VIOLENCE POLICY
The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. The University of Calgary's sexual violence policy guides us in how we respond to incidents of sexual violence, including supports available to those who have experienced or witnessed sexual violence, or those who are alleged to have committed sexual violence. It provides clear response procedures and timelines, defines complex concepts, and addresses incidents that occur off-campus in certain circumstances. Please see the policy available at https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf

UNIVERSITY STUDENT APPEALS OFFICE: If a student has a concern about the course, academic matter, or a grade that they have been assigned, they must first communicate this concern with the instructor. If the concern cannot be resolved with the instructor, the student can proceed with an academic appeal, which normally begins with the Faculty. https://www.ucalgary.ca/secretariat/student-appeals

OTHER IMPORTANT INFORMATION

Please visit the Registrar's website at:
https://www.ucalgary.ca/registrar/registration/course-outlines for additional important information on the following:

- Wellness and Mental Health Resources
- Student Success
- Student Ombuds Office
- Student Union (SU) Information
- Graduate Students' Association (GSA) Information
- Emergency Evacuation/Assembly Points
- Safewalk