

Syllabus

Instructor

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Teaching Assistants

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Lectures

Tuesdays, 09:30-12:30 (ET), Main Lecture Hall

Territorial Acknowledgement

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. Please see: <https://uwaterloo.ca/engineering/about/territorial-acknowledgement>

Course Description

Processes of structural design, load determination, system layout and limit states design are referenced and presented within a steel and concrete engineering context. Topics such as flexural, compression and tension members, along with gravity and lateral systems, are studied using calculations, design aids, heuristics, and the latest CSA design standards.

Learning Objectives

By the end of this course, students will be able to:

- Identify the strengths and weaknesses of different structural materials at the conceptual development phase in an Architectural design.
- Identify and design tension, compression and bending members in steel and concrete
- Create gravity and lateral system schemes, and identify the load paths therein.

Required Texts

ARCH 362 Course Notes Posted to LEARN

Building Code and Material Standard Excerpts Posted to LEARN

Grade Distribution

Quizzes (6@2%)	12%
Assignments (3@6%)	18%
Midterm Exam	30%
Final Project	40%

Instructional Plan

10 January 2023 (Tuesday)	1	Limit States Design
	2	Load Paths & Tributary Area
17 January 2023 (Tuesday)	3	Steel Material Properties
	4	Steel Tension Members and Bracing
24 January 2023 (Tuesday)	5	Steel Compression Members
31 January 2023 (Tuesday)	6	Steel Bending Members
	Assignment 1 Due	
7 February 2023 (Tuesday)	7	Concrete & Reinforcement Material Properties
	8	Concrete Bending Members
14 February 2023 (Tuesday)	Concrete Bending Members (continued)	
<i>Reading Week</i>		
28 February 2023 (Tuesday)	9	Foundations
	Assignment 2 Due	
7 March 2023 (Tuesday)	10	Concrete Compression Members
14 March 2023 (Tuesday)	Midterm Test	
21 March 2023 (Tuesday)	11	Concrete Shear Walls
28 March 2023 (Tuesday)	12	Lateral Systems
	Assignment 3 Due	
4 April 2023 (Tuesday)	Review/Make-up Class	
21 April 2023 (Friday)	Final Project Due	

Course Delivery & Time Zone

Course Delivery & Communication

It is strongly recommended that you create a physical course binder. Course notes in PDF format will be posted to LEARN and should be printed off. These notes will be annotated, and the examples completed, during the contact period. Example solutions and other memos can be interleaved with the notes as necessary. The notes are created in the hope that can serve as a valuable reference throughout your careers.

The course will be delivered via weekly lectures on campus (in person). It is strongly recommended that you attend all lectures: the course notes alone will not ensure your success. Grid paper and a calculator will be required during each lecture for examples.

All course communication will be delivered via announcements on LEARN. Please check the course shell often for updates. Where necessary, video calls will be conducted via Microsoft Teams.

Course Time Zone

All dates and times communicated in the document are expressed in Eastern Time (EST/EDT, UTC-05:00/UTC-04:00).

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.

Should we pivot to remote teaching this term, instructors January need to record lectures. In this case, 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

We are facing unusual and challenging times. The course outline presents the instructor's intentions for course assessments, their weights, and due dates in Spring 2023. As best as possible, we will keep to the specified assessments, weights, and dates. 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.

Course Supports

Accommodations

AccessAbility Services (<https://uwaterloo.ca/disability-services>), located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for with students with disabilities. If you require academic accommodations, please register with the office at the beginning of each academic term and contact the course instructor.

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 ([Anne Bordeleau](#)). 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 (WUSA) service. 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](#).

Course Policies

Assignment Policies & Late Work

The assignments will be posted to LEARN with clear instructions for their submission. Refer to the instructional plan herein for due dates. The assignments are to be completed individually. Assignments that are handed in late will receive 0%. No late work will be accepted. **Late Pass:** Students are allocated one late pass for the term. This allows students to make one submission up to 24 hours after the stated deadline without penalty and without any request for accommodation. A late pass cannot be used on the final course project or the midterm.

Test Policies

The midterm will be conducted in-person and will be open-textbook. Students will be responsible for the entirety of the course notes. It is recommended that you provide tabs for important pages therein. Tests are to be completed individually.

Passing Grades

The standard minimum passing grade in each ARCH course (except for studio courses) is 50%. Grades below the specified passing grade result in a course failure.

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](#).

Institutional Policies

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 (Policy 70)

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable January 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 (Policy 71)

A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for his/her 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](#).

Appeals (Policy 72)

A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline January 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.