



Course Number	ARCH 610	Classroom	PF 3160
Course Name	Structures for Architects 2		
Pre/Co-Requisites	Admission to the Minor in Architectural Studies or the Master of Architecture Programs.		
Instructor	Mauricio Soto-Rubio	Office Hours/Location	PF4181 Wednesdays 1 pm – 2:00 pm by appointment
	Email: Mauricio.sotorubio@ucalgary.ca		Phone: 403.220.5507
Class Dates	Mondays and Wednesdays 9:00 am – 10:30 am		
Instructor Email Policy	Please note that all course communications must occur through your @ucalgary email. I will respond to emails sent via student's @ucalgary emails within 48 hours.		
Teaching Assistants	Fauzan Mirza muhammadfauzan.mirza@ucalgary.ca	Office Hrs: Mon, Wed 1:00 pm – 2:00 pm	

Course Description

This course explores different structural systems and materials commonly used in contemporary architecture. The course revisits some of the structural principles learned in Structures for Architects 1 and provides students with analytical tools to evaluate the characteristics, behavior, and specific requirements of structural systems. The course is part of SAPL's building technology sequence and it is designed to support Comprehensive Building Design Studios. As such, the course reinforces the integration of different systems working in contemporary buildings.

The course is divided into two broad areas: Structural Analysis and Structural Design. Individual course topics are presented mainly through lectures. Weekly required readings, assignments, discussions of student work, and videos supplement the material presented in lectures.

Course Hours: 3 units; (2-1Tutorial)

Course Learning Outcomes

By the end of the course, the students should be able to:

1. Understand structures as an integral part of any architectural project.
2. Identify structural and non-structural components of buildings, their specific roles and physical requirements.
3. Evaluate and determine the appropriateness of different structural systems and materials.
4. Interpret the different loads applied to a structure.
5. Describe the factors affecting the selection of structural system in a architectural project.

Learning Resources Required Books:

-Ching, Francis D.K., Onouye, B. S., & Zuberbuhler, D., *Building Structures Illustrated, Patterns, Systems, and Design*, (2009, John Wiley & Sons, Hoboken, New Jersey)

Workshop Safety Training Requirement

If a course requires use of the SAPL workshop, both the online Trajectory safety training course as well as in-person workshop training and a grade of pass on the final evaluation project must be completed before a student will be granted access. This training is offered once a year, around the start of Fall term.

Assessment

Students will be evaluated through a group project (40%), weekly quizzes on lectures (30%), and a final exam (30%). Quizzes are open book and must be completed in the first 15 minutes of lecture class. The final exam is closed book. Absences will not count towards administrative fail, but students are responsible for any missed work. Late assignments missed quizzes and/or exams due to un-excused absences will receive no credit.

Assessment Method	Description	Weight	Aligned Course Learning Outcome
Group Project	Physical Model	40%	1 through 7
Weekly Quizzes	In person. Open book	30%	1 through 7
Final Exam	In person. Closed Book	30%	1 through 7

Assessment and Evaluation Information

Attendance and Participation Expectations:

Absences will not count towards administrative fail, but students are responsible for any missed work. In-person quizzes must be completed during the first 15 minutes of lecture class. Missed quizzes and exams due to un-excused absences will receive no credit.

Guidelines for Submitting Assignments:

Group project (physical model) will be presented in person at the below indicated date. Late Assignments will receive no credit.

Final Examinations:

The final exam will be individual, in person, and closed book. It will cover all material in the course and be designed to last 1.5 hrs. No cellphone use allowed during the exam.

Criteria that must be met to pass: 70%, or a B-.

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.

CACB Student Performance Criteria

The following CACB Student Performance Criteria (SPCs) will be covered in this course at a primary level: A7 Detail Design, C2 Materials, C3 Structural systems, D1 Comprehensive Design. Secondary Level: A8 Design Documentation.

Topic Areas & Detailed Class Schedule	
Lectures (Mondays)	Lab (Wednesdays)
9:00 am - 10:30 am	9:00 am - 10:30 pm
Week 1 – January 9th & 11th : Course Introduction. Structural Systems	Visual Basic Introduction
Week 2 – January 16th & 18th : Ground. Foundations. Retaining Walls	Visual Basic – 2d structural systems
Week 3 – January 23rd & 25th : (Quiz 1) Reinforced Concrete Structures.	Visual Basic – 3d structural systems
Week 4 – January 30th & February 1st : (Quiz 2) Monolithic Structures. Surface Active Structures	Mock-up Model - Deskcrits
Week 5 – February 6th & 8th : (Quiz 3) Steel Structures	Mock-up Model - Deskcrits
Week 6 – February 13th & 15th : (Quiz 4) Vector Active Structures. Trusses. Section Active Structures.	Mock-up Model Deskcrits
Week 7 – February 20th & 22nd : No class – Reading Week	No class – Reading Week
Week 8 – February 27th March 1st : (Quiz 5) Wood Structures	Model - Ground and Foundations - Deskcrits
Week 8 – March 6th & 8th : (Quiz 6) Light Wood Framing	Integrated Technical Review (with ARCH 612 in person PF 3160)
Week 9 – March 13th & 15th : No class – Block Week	No class – Block Week
Week 10 – March 20th & 22nd : (Quiz 7) High-Active Structures	Model - Primary Structural - Deskcrits
Week 11 – March 27th & 29th : (Quiz 9) Form Active Structures	Integrated Technical Review (with ARCH 612 in person PF 3160)
Week 12- April 3rd & 5th Semester Review and Secondary Structural Members Due	
Week 13 - April 10th Easter Monday (No class) and April 12th : Final Exam	

Guidelines for Zoom Sessions
<p>Zoom is a video conferencing program that will allow us to meet at specific times for a “live” video conference, so that we can have the opportunity to meet each other virtually and discuss relevant course topics as a learning community.</p> <p>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.</p>

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.

Special Budgetary Requirements

Special budgetary requirements are limited to the optional purchase of course readings

University of Calgary Policies and Supports

COVID-19 PROCEDURE FOR SICK STUDENTS: <https://www.ucalgary.ca/risk/covid-19-procedure-for-sick-students>

UNIVERSITY OF CALGARY COVID-19 UPDATES: <https://www.ucalgary.ca/risk/emergency-management/covid-19-response>

ACADEMIC ACCOMMODATION

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/university-policies-procedures/student-accommodation-policy>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/university-policies-procedures/accommodation-students-disabilities-procedure>

Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to their instructor (contact information on first page above).

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 a grade that they have received, they should refer to Section I of the Undergraduate Calendar (<https://www.ucalgary.ca/pubs/calendar/current/i-3.html>) which describes how to have a grade reappraised. In addition, the student should refer to the SAPL's Procedure for reappraisal of grades

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