



Course Number	ARCH 600	Classroom	PF 2160 or Zoom
Course Name	Structures for Architects 1		
Pre/Co-Requisites	None		
Instructor	Mauricio Soto-Rubio	Office Hours/Location	PF4181 Mondays 2:00 pm – 3:00 pm
	Email: Mauricio.sotorubio@ucalgary.ca		Phone: 403.220.5507
Class Dates	Mondays 11:00 am – 12:30 pm in person Wednesdays 11:00 am – 12:30 pm via Zoom		
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.		
Name and Email of Teaching Assistant(s)	Adam Robertson adam.robertson@ucalgary.ca Caleb Derksen caleb.derksen@ucalgary.ca		

Course Description

This course focuses on the fundamental principles that affect the structural behavior of buildings. Through lectures, exercises and hands on experiments, students develop an understanding of the principles of structural behavior in withstanding gravity and lateral forces, and the evolution, range and appropriate applications of structural systems.

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

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

Online Delivery (If applicable)

This course will take place both online via Desire2Learn (D2L) and Zoom as well as in person. Online lectures will be both synchronous (live) and asynchronous (recorded). Students are required to participate in the asynchronous learning tasks using the D2L learning environment and synchronous Zoom sessions. If unable to participate live due to unforeseen circumstances, inform the instructor in advance to work out an alternative participation activity.

Course Learning Outcomes

Upon completion of this course, students will:

1. Understand the fundamentals principles that affect the structural behavior of buildings.
2. Be able to use analytical techniques to measure and evaluate the flow of forces through structural systems.
3. Have the ability to evaluate and determine the appropriateness of structural systems and materials.
4. Understand the importance of considering the structural behavior of buildings in the development of architectural proposals.

Learning Resources There are no required textbooks and/or readings for this course. The following list include recommended textbooks:

-Millais, Mallcom. Building Structures: from concept to Design; Spon Press, Taylos & Francis Group: 2005, ISBN: 0415336236

-Ambrose, James. Building Structures (1993, John Wiley and Sons, New York)

-Zalewski, Waclaw & Allen, Edward. Shaping Structure Statics (1998, John Wiley & Sons, NY)

Required readings, textbooks and learning materials:

Technology requirements (D2L etc.): 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
- [Student IT Resources](#)

Most current laptops will have a built-in webcam, speaker and microphone.

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.

Additional Classroom Conduct and Related Information

Guidelines for Zoom Sessions in Online Classes

Students are expected to participate actively in all Zoom sessions and to turn on their webcam. Please turned off your cellphone and 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.

Assessment Components

Assessment Method	Description	Weight	Aligned Course Learning Outcome
Weekly Quizzes	In person. Open book	40%	1 through 4
Group Projects (3)	Physical Models	30% (10% each)	1 through 4
Final Exam	In person. Closed Book	30%	1 through 4

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 projects (physical models) will be presented in person at the below indicated date.

Final Examinations:

The final exam will be in person and closed book. It will cover all material in the course be designed to last 1.5 hrs. Please bring a hand calculator. 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: C3 Structural systems. Secondary Level: A2 Design Skills; Building Materials and Assemblies.

Topic Areas & Detailed Class Schedule

Include information relevant to the class schedule, such as weekly topics, readings, and assignment due dates. For online, remote or blended courses include whether course activities are synchronous (i.e., real-time/Zoom) and asynchronous (i.e., students complete on their own time such as discussion boards, watching videos, etc.). It is recommended that important dates including the first day of classes, holidays, term breaks and last day of classes also be included.

Course Schedule Date	Topic	Assignments/Due Dates
<i>Examples below, please adjust to fit your course dates.</i>		
Sept 8	Course Introduction	
Sept 13 (in person) Sept 15 (online/zoom)	Loads. Acting loads on buildings. Live and dead loads. Wind loads, Snow loads. Earthquakes and Thermic loads / Static Fundamentals	
Sept 20 (in person) Sept – 22 (online/zoom)	Forces. Composition and decomposition of forces. Force systems / Static Equilibrium	Quiz 1 (in person)

Sept 27 (in person) Sept 29 (online/zoom)	Free body diagram. Types of restrains / Moment. Pair of forces	Quiz 2. (in person)
Oct 4 – 8	No classes – SAPL block week	
Oct 13 (online/zoom)	Stability and Determination of Forces. Reaction Forces	Quiz 3 (in person) Review of Project 1.
Oct 18 (in person) Oct 20 (online/zoom)	Reaction Forces Shear and Moment diagrams	Quiz 4 (in person)
Oct 25 (in person) Oct 27 (online/zoom)	Shear and Moment diagrams Section Properties and allowable material capacity	Quiz 5 (in person)
Nov 1 (in person) Nov 3 (online/zoom)	Section Properties and allowable material capacity	Quiz 6. Review of Project 2 (in person)
Nov 8 - 12	No classes – term break	
Nov 15 (in person) Nov 17 (online/zoom)	Truss analysis. Joints method	Quiz 7 (in person)
Nov 22 (in person) Nov 24 (online/zoom)	Truss analysis. Graphic method	Quiz 8. Review of Project 3 (in person)
Nov 29 (in person) Dec 1 (online/zoom)	Course Review	Quiz 9 (in person) Final Exam (potential date)
Dec 6 (in person)		Final Exam (potential date)

Guidelines for Zoom Sessions

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.

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.

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://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 accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>

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: ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf

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 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