



UNIVERSITY OF CALGARY
SCHOOL OF ARCHITECTURE,
PLANNING AND LANDSCAPE

Winter 2024

Course Number	ARCH 610	Classroom	Classroom C
Course Name	Structures for Architects 2		
Pre/Co-Requisites	Admission to the Minor in Architectural Studies or the Master of Architecture Programs		
Instructor	Dr. Gerd Birkle	Office Hours/Location	Will be present 0.5 hrs before lectures
	Email: gerd.birkle@entuitive.com	Phone: 587.893-3087	
Class Dates	Mondays and Wednesdays, Jan. 8 – Apr. 19, 8:45am to 10:15am		
Instructor Email Policy	Please direct all questions towards the teaching assistants before contacting me.		
Name and Email of Teaching Assistant(s)	Arman Khalilbeigi Khameneh arman.khalilbeigikha@ucalgary.ca Nitya Gupta: nitya.gupta@ucalgary.ca		

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)

Assessment Components:

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.

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.

Expectations for Writing

(<https://www.ucalgary.ca/pubs/calendar/current/e-2.html>):

Late Assignments:

Late Assignments will receive no credit.

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

The School of Architecture, Planning and Landscape will not permit the Flexible Grade Option (CG Grade) for any course offered by the School.

<https://www.ucalgary.ca/pubs/calendar/current/f-1-3.html>

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

Course Schedule Date	Topic	Assignments/Due Dates
Jan 8 – 12	Course Introduction Structural Systems <i>Analysis Software</i>	
Jan 15 – 19	Gravity Resistance Systems <i>FEM Modelling</i>	
Jan 22 – 26	Lateral Resistance Systems <i>FEM Analysis</i>	Quiz 01 – Structural systems
Jan 29 – Feb 2	Ground & Foundations. Retaining Walls <i>Mock-up Model - Deskcrits</i>	Quiz 02 – Load Resistance
Feb 5 – 9	Monolithic Structures. Surface Active Structures <i>Mock-up Model - Deskcrits</i>	Quiz 03 – Foundations
Feb 12 – 16	Winter SAPL Block week	
Feb 19	Family Day Observed	
Feb 19 – 23	Winter Term Break	
Feb 26 – Mar 1	Member Structures (Trusses) Section Active Structures <i>Mock-up Model- Deskcrits</i>	Quiz 04 – Surface Active Structures
Mar 4 – 8	Concrete Structures <i>Structural Model - Deskcrits</i>	Quiz 05 – Member Structures
Mar 11 – 15	Steel Structures <i>Structural Model - Deskcrits</i>	Quiz 06 – Concrete
Mar 18 – 22	Final Exam <i>Model Main Member</i>	Final Exam (March 18)
Mar 25 – 28	Wood Structures <i>Tectonic Model Review</i>	Quiz 07 – Steel <i>Tectonic Model Review</i>
Mar 29	Good Friday – University closed	
Apr 1	Easter Monday – University closed	
Apr 2 – 5	Special Structures	
Apr 8 – 9	TBD	
Apr 15 – 19	Final Review week	

Special Budgetary Requirements

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

Joseph Iano & Edward Allemn “The Architects Studio Companion”, Wiley, 7th Edition

University of Calgary Policies and Supports

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/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://www.ucalgary.ca/legal-services/university-policies-procedures/student-academic-misconduct-policy>

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 (<https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy>) 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 AND GENDER-BASED 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/legal-services/university-policies-procedures/sexual-and-gender-based-violence-policy> .

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