



<b>Course Number</b>	ARCH 614	<b>Classroom</b>	Zoom
<b>Course Name</b>	Architectural lighting design		
<b>Pre/Co-Requisites</b>			
<b>Instructor</b>	<b>Dr. C. Hachem-Vermette</b>	<b>Office Hours/Location</b>	"by appointment"
	<b>Email:</b> <a href="mailto:carolinehachem@ucalgary.ca">carolinehachem@ucalgary.ca</a>		<b>Phone:</b>
<b>Class Dates</b>	Mandatory real-time Zoom classes		
<b>Instructor Email Policy</b>	Please note that all course communications must occur through your @ucalgary email, and I will respond to emails sent via student's @ucalgary emails within 72 hours, during weekdays		
<b>Name and Email of Teaching Assistant(s)</b>			

### Course Description

Comfortable indoor environment is a major goal in the design of buildings, and achieving this may be challenging in cold climate where several factors should be considered simultaneously. The **ultimate goal** of the course is to bridge gap between architecture and engineering, towards achieving more sustainable environment. The course addresses design of buildings for cold climate to provide comfortable and productive environment while reducing the negative environmental effects at the global level by reducing demands for fossil fuels.

**Course Hours:** Thursdays(9-12:00)

### Online Delivery (If applicable)

This course will take place **online** via Desire2Learn (D2L) and Zoom. Students are required to participate in the 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

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

1. Apply the basic principles of heat transfer mechanism and to perform simple heat loss /gain calculations.
2. Evaluate design decisions on heat loss/gain through envelope.
3. Apply basic passive design strategies to reduce operational energy requirements of the

building.

4. Design mechanical control systems using approximate methods for sizing of ducts and other components.
5. Organize major mechanical system components in relation to other systems, including structure, enclosure, lighting, and fire safety.
6. Apply the principles of ventilation in cold climates (including natural ventilation, heat recovery, etc.).
7. Demonstrate awareness of issues related to energy efficiency and renewable energy applications for cold climate buildings.
8. Develop architectural designs that integrate mechanical systems together with other building systems (e.g. building envelop, lighting, structures).

## Learning Resources

### Readings

The course texts are

- The Architect's Studio Companion: Rules of Thumb for Preliminary Design, 5th ed. 2007 E. Allen and J. Iano Wiley ISBN-13: 9780470641910
- W.T. Grondzik, A.G. Kwok, B. Stein, J. S. Reynolds, Electrical and Mechanical Equipment for Buildings (11th Edition), 2010 (selected chapters) Wiley, ISBN 978-0-470-19565-9
- Additional materials will be posted on the course website.

**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.

## 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 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
Passive design presentation	passive design strategies included in the conceptual design	10%	1-3
Mid term exam	will be based on material covered in week 1-4	15%	1-4
Final Exam	Final exam will cover all semester material)	25%	1-7
Design Project		50%	1-7

## Assessment and Evaluation Information

Evaluation will be based on:

Passive design presentation	10%
Mid-term exam	15%
Final exam	25%
Design Project	50%
Total	100%

- Passive design presentation will focus on the passive design strategies included in the conceptual design of the buildings to reduce its heating and cooling load (including building shape, orientation, preliminary selection of materials, window size, etc.) (Outcomes 1, 2 and 3). **3% (from analyze and evaluate) depends on evaluating other students (2%) and getting evaluations from others (1%).**
- Mid-term exam will be based on material covered in week 1-4 (outcomes 1, 2, 3, 4)
- Final exam will cover all semester material (Outcomes 1-7)
- Design project (Outcomes 1-8)

Note: The exams will be closed book. Writing and the grading thereof is a factor in the evaluation of the project.

-Guidelines for Submitting Assignments: Please submit on D2L- Folders will be created for this purpose

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

-Late Assignments: -2% for each additional 24hours

Criteria that must be met to pass: Passing grade on the whole course (cumulative of all assignments)

## 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 will be covered in this course at a primary level: B8 Environmental Systems, C2 Building Systems Integration, B10 Building Service Systems  
The following CACB Student Performance Criteria will be covered in this course at a secondary level: B4 Sustainable Design, C1 Detailed Design Development, C4 Comprehensive Design.

### Detailed Class Schedule (tentative)

<b>W1</b>	Jan 13th	Thermal comfort, impact of building design Heat transfer and heating and cooling loads	
<b>W2</b>	Jan 20th	Heating and cooling loads (ctd) - simple calculation methods; Introducing the term Project; Introduction to passive design (heating, cooling, daylighting and ventilation); passive heating.	
<b>W3</b>	Jan 27th	Passive design (ctd) Natural ventilation, Indoor air quality.	

<b>W4</b>	Feb 3rd	Students' presentation: Passive design implementation in the Term project.	
<b>W5</b>	Feb 10th	Mid term exam HVAC for small buildings (residential and commercial)	Mid term exam (Time TBD)
<b>W6</b>	Feb 17th	HVAC for small buildings (ctd). HVAC for Large buildings; Generic HVAC Systems (Air to air, air to water and all- water);( Guest speaker TBD)	
<b>W7</b>	Block week		
<b>W8</b>	Mar 3rd	HVAC for large buildings (ctd) Rules of thumb for sizing HVAC equipment; Distribution, project tutorial	
<b>W10</b>	Mar 10th	Distribution systems (ctd) (Type of distribution, delivery systems, etc.). Air ducts and approximate sizing of ducts- in class exercises.	
<b>W11</b>	Mar 17th	Block week	
<b>W12</b>	Mar 24th	Crits Final exam March	Time TBD
<b>W13</b>	Mar 31st	Crits	
<b>W14</b>	Apr 7th	Crits	
<b>W15</b>	Apr 11th	Project submission	

## Guidelines for Zoom Sessions

*If video conferencing tools such as Zoom or MS Teams will be used during course activities, provide information related to student learning and conduct, and indicate whether these sessions will be recorded.*

### For example:

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 and, in specific courses, mandatory supplementary fees to cover certain expenditures, such as field trips. Mandatory supplementary fees must be approved by the University prior to implementation. Instructors are required to list and describe approved optional and mandatory supplementary fees for courses. This can include possible costs incurred for special materials, equipment, services, or travel.

### **Optional:**

For certain courses students may be given the option of purchasing course readings. In these cases the cost of the reading package should be stated in the course outline. When course readings are available for purchase, a minimum of two copies of the readings must be made available at the SAPL Reception or online.

## 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/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/](http://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](http://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