UNIVERSITY OF CALGARY
SCHOOL OF ARCHITECTURE,
PLANNING AND LANDSCAPE

Winter 2024

Course Number	ARCH 608	Classroom	Zoom or Classroom C @ CBDL
Course Name	Architectural Lighting Design		
Pre/Co-Requisites			
Instructor	Dr. Chi Dara	**Office Hours/Location**	Virtual Appointment
	Email: chinyere.dara1@ucalgary.ca		**Phone:** 306.850.4830 (cell)
Class Dates	Mandatory real-time Zoom classes: Tuesday to Saturday, January 02 – 06, 9:00am to 1:00pm		
Instructor Email Policy	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 12 hours.		
Name and Email of Teaching Assistant(s)	Bita Hatami		

Course Description:

Understanding the principles of architectural lighting is a basic step towards achieving comfortable, healthy, and environmentally responsible designs. This course explores how lighting design can significantly affect the architectural perception of a space. In this course, lighting design will be addressed as part of the broader process of designing the visual experience in architecture. Both daylighting and artificial electric lighting design and application will be covered.

The course consists of the following components, each described in their own subsequent section in the course outline: lectures, required readings, in-class discussion sessions, project tutorials, student presentations, quizzes, and lighting design term project.

Course Hours: 1.5 units; (lecture/tutorial – hybrid Zoom/in-person).

Online Delivery:

The course will be presented in half day Zoom lectures with workshops breakout sessions in afternoon. The workshop will include lighting exercises and will cover development of lighting

designs using lighting maps sketches and redline layouts. The final project is a complete lighting design for a commercial space.

This course will take place mostly online via Desire2Learn (D2L) and Zoom. Students are required to participate in the asynchronous learning tasks using the D2L learning environment and synchronous Zoom sessions. The last two days of the course will be in-person designed for one-on-one lab tutorials on lighting design and tool needed to successfully complete the term project. If unable to participate live due to unforeseen circumstances, inform the instructor in advance to work out an alternative participation activity (e.g., watch the recordings, submit a brief reflection, and actively contribute to the follow-up online discussion).

Course Learning Outcomes:
Upon completion of this course, students will know and be able to:
1. Apply fundamental principles of the light design process, incorporating lighting metrics and layering approach.
2. Develop illumination schemes that elevate architectural designs.
3. Demonstrate comprehensive understanding of electric illumination systems, task illuminance, lamps, lighting equipment, and design techniques.
4. Demonstrate an understanding of daylight applications, lighting controls, and sustainable lighting design principles.
5. Perform manual lighting calculations and simulations using software tools, and develop finalized lighting maps and controls tailored for varying clients needs, seasons and special task requirements.

Learning Resources:
Recommended readings, textbooks and learning materials:
- IES DG-18-08; A Guide to Designing Quality Lighting for People and Buildings
- Sage Russel; The Architecture of Light
- Gary Steffy; Architectural Lighting Design

Additional readings:
- Kazimee Bashir, Sustainable Urban Forms: Theory, Design and Application, First edition, Cognella Academic Publishing, 2018.
- Barton, H., Grant, M., Guise, R., Shaping Neighbourhoods: For Local Health and Global Sustainability, Routledge; 2 editions, 2010.
- Alison Cotgrave; Mike Riley Total Sustainability in the Built Environment, Palgrave Macmillan, 2012.
- Lynch, Kevin; Hack, Gary (1962). Site Planning. MIT Press. (2nd ed. 1971; 3rd ed. 1984)

In addition, list of readings related to selected topics will be posted regularly on D2L.

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: NA

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
Written Report	Lighting Design Project	70%	1, 2,3,4, and 5
Quizzes	Multiple Choice Questions	20%	1, 2, and 3
Class Attendance	Participation	10%	

Assessment and Evaluation Information

The course consists of various topics that are explored through lectures conducted by the course instructor. These lectures focus on investigating technical topics relating to architectural lighting design. Students are assigned lighting tutorial sessions for an AGI software tool, along with class discussions and quizzes to reinforce their understanding of the subject matter. In addition to these activities, each student is required to complete a term report on proposed lighting design case study project.

Means of Evaluation

Evaluation will be based on:

Lighting Design Project: 70%
- Project part A- 25%: This part of the project deals with the conceptual design of architectural lighting, and will rely on knowledge gained in Day 1&2 (outcomes 1 and 2)
- Project part B - 45%: This part deals with the analytical aspect of a lighting project, including calculation, developing of final lighting maps, selecting lighting equipment, etc. It covers all material learned in the course (Outcomes 3 to 5).

Quizzes: 20%

Attendance and Participation Expectations:
Participation: 10%
Students are required to attend all lectures and tutorials. Daily attendance will account for course participation and engagement grade.

Guidelines for Submitting Assignments:

Written and verbal assignments will be marked for grammatical accuracy, stylistic clarity, and organization as well as for demonstrated understanding of the topic, logical argumentation, and originality of critical comments. Students must undertake research that demonstrates an ability to appropriately select and interpret sources – the extensive use of web-based research is discouraged. Papers should include supporting imagery (architectural drawings, lighting maps, cut sheets, simulation results, photographs, etc).

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

Late Assignments:

Must be 100% complete to be considered.
Criteria that must be met to pass: (e.g. whether or not a passing grade on any particular component of a course is essential if the student is to pass the course as a whole).

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 (for Architecture courses only)

The following CACB Student Performance Criteria will be covered in this course at a primary level (other criteria will be covered at a secondary level): A1. Critical Thinking Skills; A6. Human Behaviour, B3. Site Design, and B4. Sustainable Design.

Topic Areas & Detailed Class Schedule

Course Schedule Date	Topic	Assignments /Due Dates
Day 1 Jan 2nd 9:00am – 1:00pm	Introduction to Lighting Design; Lighting perception; Physical characteristics of light; Lighting metrics; Design process: layering approach. **Term Project: Assigned**	
Day 2 Jan 3rd 9:00am – 1:00pm	Quiz 1 (10 mins) 5 layers approach (ctd); Task Illuminance; Lamps and Lighting equipment. Lighting calculations; [1hour] Exercise of lighting calculations (lumen method, point by point method.	Quiz 1
Day 3 Jan 4th	Quiz 2 +3 (15 mins)	Quiz 2 +3

9:00am – 1:00pm	Lighting map process; Lighting specs and cutsheets; Lighting control and sustainability. Project tutorial: calculation + lighting maps Introduction to Daylighting (definition and benefits)	
Day 4 Jan 5th 9:00am – 1:00pm	Daylighting (Daylighting surfaces, Daylighting design); Shading devices (1 hour) Tutorial/computer lab using AGi32 **(in-person, CBDL)**	
Day 5 Jan 6th 9:00am – 1:00pm	AGi32 tutorial + assistance in class **(in-person, CBDL)**	
Jan 26th Due – 11:59pm	Project Submission	Term Project 70%
Indicate the following dates: If applicable, dates, times and locations of all approved class activities scheduled outside of regular course hours **Students can continue after official class time		

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.

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