

Architectural Lighting Design
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EVDA 617 Q(1.5-0)
Fall 2011
p: 403-220-7428
office hours: MW 1400-1500

Introduction

Architectural lighting design will be addressed as part of the broader process of designing the visual experience in architecture. Both daylighting and electric lighting will be covered.

Objectives

1. Ability to develop illumination schemes that enhance an architectural design,
2. Ability to analyze designs by computer simulation and manual methods,
3. Understanding of daylighting and electric illumination systems and techniques,
4. Understanding of vision as a psychological phenomenon.
5. Understanding of light as a physical phenomenon.
6. Awareness of physical modeling procedures for electric and daylighting design.

Teaching Approach

The course will be presented in lecture and workshop mode. The workshops will cover development of lighting designs and computer-based design aids. The assignment is a lighting design exercise.

Content: Topic Areas

The functions and characteristics of lighting systems will be reviewed, together with their place in the development of design concepts. Components and terminology will be discussed, as well as quantitative design methods. Factors in systems selection will be examined, including:

1. the illumination of interiors and visual perception,
2. terminology and measurement units in illumination.
3. electric light sources,
4. daylighting,
5. calculation methods for lighting design,

Means of Evaluation

Evaluation will be based on:

Project	75%
Test	25%
Total	100%

The final test will be an open book examination.

Grading

Grading will be based on the following scale:

Letter Grade	4-Point Range	Description
A+	4.00	Outstanding - evaluated by instructor
A	3.85-4.00	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.50-3.84	Very good performance
B+	3.15-3.49	Good performance

B	2.85-3.14	Satisfactory performance
B-	2.50-2.84	Minimum pass for students in the Faculty of Graduate Studies
C+	2.15-2.49	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	1.85-2.14	
C-	1.50-1.84	
D+	1.15-1.49	
D	0.50-1.14	
F	0-0.49	

Readings

The course text is

Stein, B., J. S. Reynolds, W.T. Grondzik, and A. Kwok
 Electrical and Mechanical Equipment for Buildings (11th Edition), 2010
 Wiley, ISBN 978-0-470-19565-9

Notes

1. Written work, term assignments and other course related work must be submitted by the course Blackboard system.
2. Classes may be held Tuesdays and/or Thursdays during the term for purposes of coordination with the studio. As a quarter course, the class will run about 50% of the weeks of the term, plus time for the test and assistance with the project.
3. It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than fourteen (14) days after the start of this course.
4. Plagiarism - Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Most commonly plagiarism exists when:(a) the work submitted or presented was done, in whole or in part, by an individual other than the one submitting or presenting the work (this includes having another impersonate the student or otherwise substituting the work of another for one's own in an examination or test),(b) parts of the work are taken from another source without reference to the original author,(c) the whole work (e.g., an essay) is copied from another source, and/or,(d) a student submits or presents work in one course which has also been submitted in another course(although it may be completely original with that student) without the knowledge of or prior agreement of the instructor involved. While it is recognized that scholarly work often involves reference to the ideas, data and conclusions of other scholars, intellectual honesty requires that such references be explicitly and clearly noted. Plagiarism is an extremely serious academic offence. It is recognized that clause (d) does not prevent a graduate student incorporating work previously done by him or her in a thesis. Any suspicion of plagiarism will be reported to the Dean, and dealt with as per the regulations in the University of Calgary Graduate Calendar.

5. Information regarding the Freedom of Information and Protection of Privacy Act (<http://www.ucalgary.ca/secretariat/privacy>) and how this impacts the receipt and delivery of course material.
6. Emergency Evacuation/Assembly Points (<http://www.ucalgary.ca/emergencyplan/assemblypoints>).
7. Safewalk information (<http://www.ucalgary.ca/security/safewalk>).
8. Contact Info for: Student Union (<http://www.su.ucalgary.ca/page/affordability-accessibility/su-structure/contact-info>); Graduate Student representative (<http://www.ucalgary.ca/gsa/>) and Student Ombudsman's Office (<http://www.su.ucalgary.ca/page/quality-education/academic-services/student-rights>).
8. Contact Info for: Student Union (<http://www.su.ucalgary.ca/page/affordability-accessibility/su-structure/contact-info>); Graduate Student representative (<http://www.su.ucalgary.ca/page/quality-education/academic-services/student-rights>).

Canadian Architectural Certification Board - Performance Criteria Met by Course

The following CACB Student Performance Criteria will be covered in this course at a primary level: B8 Environmental Systems, C2 Building Systems Integration

The following CACB Student Performance Criteria will be covered in this course at a secondary level: B4 Sustainable Design, B10 Building Service Systems, C1 Detailed Design Development, C3 Technical Documentation, C4 Comprehensive Design.

C4 comprehensive design xxx

Detailed Schedule

The following CACB Student Performance Criteria will be covered in this course at a primary

- Mon., Sept. 12 (1) Introduction to Lighting Design; Basic Concepts
- Wed., Sept. 14 (2) Daylighting: Basic Concepts
- Mon., Sept. 19 (3) Electric Lighting Systems 1
- Wed., Sept. 21 (4) Electric Lighting Systems 2
- Mon., Sept. 26 (5) Simulation Tutorial 1: Daylighting
- Wed., Sept. 28 (6) Simulation Tutorial 2: Electric Lighting 1
- Mon., Oct. 3 (7) Simulation Tutorial 3: Electric Lighting 2
- Wed., Oct. 5 (8) Simulation Tutorial 4: Electric Lighting 3
- Mon., Oct. 10 Block Week
- Wed., Oct. 12 Block Week
- Mon., Oct. 17 (9) lighting project tutorial
- Wed., Oct. 19 (10) lighting project tutorial

Mon., Oct. 24	(11) lighting project tutorial
Wed., Oct. 26	(12) lighting project tutorial
Mon., Nov. 28	(13) lighting project tutorial
Wed., Nov. 30	(14) final test