Sustainable Buildings for Cold Climates **EVDS 697.79 Q(1.5-0)**
Prof. Jim Love **Fall 2013**
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Introduction

The Royal Architectural Institute of Canada (RAIC) states that it "actively advocates for a more sustainable architecture." This course will take a critical approach to the application of environmental performance rating systems to cold climate buildings.

Objectives

1. Ability to critique claims regarding technologies and design approaches held to enhance sustainability in cold climate buildings.
2. Ability to apply the architectural components of the LEED (Leadership in Energy and Environmental Design) environmental performance rating system to a design. The LEED rating system as used in Canada was developed by the US and Canada Green Building Councils.
3. Awareness of critiques of claims regarding technologies, design approaches and rating systems held to enhance sustainability in cold climate buildings.
4. Awareness of the application of components of the LEED rating system to a project handled by allied disciplines.
5. Awareness of rating systems other than LEED.
6. Awareness of lifecycle assessment as an approach to sustainability.

Teaching Approach

The course instructor has been LEED-accredited for more than 10 years and has extensive experience with LEED projects. The course will be presented via lectures, workshops, seminars, site visits and readings. Each student will apply the LEED rating system to a studio design s/he has previously completed, or to another project approved by the instructor. During workshop classes, students will be assisted in applying LEED criteria to the design.

Content: Topic Areas & Detailed Class Schedule

1. Approaches to achieving more sustainable design, including building rating systems.
2. Building technologies - the topics covered in the seminars will be influenced by student interests, and may include: energy efficiency, renewable energy systems, water and waste systems, materials, indoor environmental quality.

Sept. 13 (1) Overview: Sustainable Buildings for Cold Climates
- the concept of sustainable design; the LEED rating system for building design and construction; discussion of the course project; accreditation of professionals under LEED, case study

Sept. 20 (2) Sustainable Sites
- credits, criteria, case studies, application to project

Sept. 27 (3) Water and Energy Efficiency
- credits, criteria, case studies, application to project

Oct. 4 (4) Materials and Resources 1
- credits, criteria, case studies, application to project;
- preview of site visit building

Oct. 11 (5) Site Visit 1
- visit to a LEED-certified building

Oct. 18 Block Week

Oct. 25 (6) Materials and Resources 2
- discussion of site visit building
- credits, criteria, case studies, application to project

Nov. 1 (7) Indoor Environmental Quality 1
- credits, criteria, case studies, application to project

Nov. 8 (8) Indoor Environmental Quality 2
- credits, criteria, case studies, application to project
- preview of site visit building

Nov. 15 (9) Site Visit 2
- visit to a LEED-certified building

Nov. 22 (10) review of LEED accreditation
- details procedures to qualify as a LEED-accredited professional
- LEED exam content

Nov. 29 (11) project workshop
- work on design rating project

Dec. 6 (13) other environmental rating systems for buildings
- BuiltGreen, BREEAM, Green Globes, Living Building Challenge, etc.

Means of Evaluation

Evaluation will be based on:

Green building rating project (LEED)	
Preliminary project submission	30%
Final project submission	70%
Total	100%

Writing and the grading thereof is a factor in the evaluation of the project.

Grading

Grading will be based on the following scale:

Grade	Grade Point Value	4-Point Range	Percent	Description
A+	4.00	4.00	92.5-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	85-92.49	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	80-84.99	Very good performance
B+	3.30	3.15-3.49	76-79.99	Good performance
B	3.00	2.85-3.14	73-75.99	Satisfactory performance
B-	2.70	2.50-2.84	70-72.99	Minimum pass for students in the Faculty of Graduate Studies

C+	2.30	2.15-2.49	66-69.99	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	63-65.99	
C-	1.70	1.50-1.84	60-62.99	
D+	1.30	1.15-1.49	56-59.99	
D	1.00	0.50-1.14	50-55.99	
F	0.00	0-0.49	0-49.99	

Readings

The course text is

Handbook of green building design and construction: LEED, BREEAM, and Green Globes
Kubba, Sam
TH880 .K8395 2012 eBook: Full Text Online

Canadian Architectural Certification Board - Performance Criteria Met by Course

Since this is an elective course it does not address the CACB performance criteria.

Notes

1. Written work, term assignments and other course-related work must be submitted via the course Blackboard system.

2. 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.

3. 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.

4. 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.

5. Emergency Evacuation/Assembly Points (http://www.ucalgary.ca/emergencyplan/assemblypoints).

6. Safewalk information (http://www.ucalgary.ca/security/safewalk.

7. 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. The instructor may reduce grades for assignments and components thereof submitted after deadlines.