

<i>Classes:</i>	<i>09:30 - 11:00 Tuesdays and Thursdays Rm. 3160</i>		
<i>Course Manager:</i>	<i>David Monteyne</i>		
<i>Instructor:</i>	<i>Brad Braun babraun@ucalgary.ca PF3172</i>	<i>Teaching Assistant:</i>	<i>Sukhpreet Kaur ar.sukhu@gmail.com</i>
<i>Office hours:</i>	<i>Thursdays 12:30 - 1:30 by appointment (other times can be arranged)</i>	<i>Hours TBD</i>	
<i>CACB student performance criteria (SPCs) met by the course:</i>			
<i>Primary:</i>	<i>Structural Systems, Building Materials and Assemblies</i>		
<i>Secondary:</i>	<i>Design Skills, Research Skills, Precedent Analysis</i>		

Introduction

This course examines the choices for structural systems, the context within which choices are made, and the variables involved. The approach is a qualitative, as opposed to quantitative, as the intent is to provide students with sufficient background to begin to appreciate the factors involved in choosing and incorporating structural systems. Assignments do not address the entire material covered in the course, but instead, focus specifically on very particular aspects of structural systems choice.

Objectives

- To learn the fundamentals of structural systems choices
- To understand the factors which affect systems choices
- To demonstrate the ability to design a structural system
- To learn the skills required to access and apply knowledge as it pertains to building components and systems

Teaching Approach

This course is divided into topic areas which are presented in terms of both theory and practical application. Topic areas are presented through lectures, assignments, discussion of student work, videos, site visits, and course readings. As site visits are considered to be an essential component of the course, **attendance at site visits is mandatory.**

Content

- 1 Overview of systems
 - 1.1 forces, types of load, free body diagrams, load distribution, types of support
 - 1.2 overview of component typologies (column and beam, trusses, arches, etc)
 - 1.3 systems typologies: primary, secondary, tertiary
- 2 Selection of systems
 - 2.1 Wood frame
 - 2.2 Light steel
 - 2.3 Steel
 - 2.4 Masonry, cast-in-place & precast concrete
- 3 Other factors affecting systems choices
 - 3.1 Economics
 - 3.2 Fire considerations
- 4 Design Integration

Evaluation

The course evaluation will be based on the assignments completed during the term. There will be no final examination. In addition to specific evaluation criteria specific to each assignment, all assignments will be evaluated on:

- Responsiveness and relevance to specifics of assignment
- Clarity and completeness of digital representations and textual explanations (where required)
- Overall quality of work (including graphic quality)

Assignment 1: Precedent Analysis 15%

Assigned: Sept 9
Due: See presentation schedule

Assignment 2: Systems Selection 50%

Assigned: Sept 16
Due: Oct 28

Assignment 3: Structural Design 35%

Assigned: Oct 28
Due: Nov 27

All assignments are due at the beginning of class time on the day they are due unless otherwise stated in the assignment. Late assignments will be penalized by one letter grade (i.e.: A to A-) for each 24 hour period or portion thereof that they are submitted late. **Late Assignment 2 submissions must be submitted to EVDS reception during regular office hours and time & date-stamped by the receptionist.**

Assignments are to be submitted digitally as specified in the assignment description. Assignment 2 must be submitted in both digital and hard copy form. **The hard copy is the basis for evaluation for Assignment 2. If a hard copy of Assignment 2 is not provided, the assignment will be considered incomplete.**

Assignment of Grades

Letter Grade	4-Point Scale	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	

Note: A student who receives a B- or lower in two or more courses will be required to withdraw regardless of their grade point average unless the program recommends otherwise. Individual programs may require a higher minimum passing grade. A grade point value of 3.0 on the 4-Point Scale is the minimum acceptable average that a graduate student must maintain throughout the program as computed at the end of each registration anniversary year of the program. A student who receives a grade of F will normally be required to withdraw unless the program recommends otherwise.

Readings

Specific readings will be assigned for the course. A copy of any required reading not taken from the required course textbook will be made available on the D2L course page. **It is expected that assigned readings will be completed prior to the beginning of class for the date they are assigned.**

Course Texts

Required:

Building Structures Illustrated: Patterns, Systems, and Design.

Ching, Onouye, & Zuberbuhler (2008). John Wiley & Sons.
ISBN: ISBN: 978-0-470-18785-2

Recommended:

Why Buildings Stand Up.

Mario Salvadori (2002). W. W. Norton.
ISBN: 0-393-30676-3

(this is a quick read recommended for those with no prior understanding of structural systems)

Reference Texts:

Building Construction Illustrated, 4th Edition

Ching & Adams (2008). John Wiley & Sons.
ISBN: 978-0-470-08781

This will also be a recommended text for EVDA 619

The Architect's Studio Companion: Rules of Thumb for Preliminary Design, 4th Edition.

Allen & Iano (2006). John Wiley & Sons.
ISBN: 978-0-471-73622-6

This will also be a recommended text for EVDA 619

D2L

D2L will be utilized as the primary communication tool for this course. It is the responsibility of students to ensure that they are registered for the course and that their e-mail contact information is up-to-date with the university.

Site Visits

Appropriate safety wear is mandatory on site visits, including CSA approved steel-toed footwear, hard hats, and safety goggles. There are some steel-toed rubber boots and hard hats available to be signed out through the workshop, however it is ultimately the students responsibility to provide the appropriate safety wear required to attend the site visits. This will be discussed in class prior to the first site visit.

Special Budgetary Requirements

There are no mandatory or optional course fees for this course.

Notes:

1. Written work, term assignments and other course related work may only be submitted by e-mail if prior permission to do so has been obtained from the course instructor.
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 403-220-8237 (<http://www.ucalgary.ca/drc/node/46>).

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 and how this impacts the receipt and delivery of course material (<http://www.ucalgary.ca/secretariat/privacy>)
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/>)

Student Ombudsman's Office
(<http://www.su.ucalgary.ca/page/quality-education/academic-services/student-rights>)

EVDA 613 Schedule - Fall 2014 (subject to change)			
WEEK	DATE	TOPIC	Presentations
1	Sept 9	Course Intro	
		Assignment 1 given	
	Sept 11	Lecture:	
2	Sept 16	Lecture	
		Assignment 2 given	
	Sep-18	Lecture	
3	Sept 23	Lecture	
	Sept 25	Lecture	Groups 1 & 2
4	Sept 30	Lecture	Groups 3 & 4
	Oct 2	Lecture	Groups 5 & 6
5	Oct 7	Lecture	Groups 7 & 8
	Oct 9	Lecture	Groups 9 & 10
6	BLOCK WEEK Oct 14 - 17 (no classes)		
7	Oct 21	Lecture	
	Oct 23	Lecture	
8	Oct 28	Assignment 2 due	
		Assignment 3 given	
	Oct 30	Lecture	
9	Nov 4	Lecture	
	Nov 6	Lecture	
10	Nov 11	Remembrance Day (no classes)	
	Nov 13	Lecture	
11	Nov 18	Assignment 3 crits	
	Nov 20	Assignment 3 crits	
12	Nov 25	Assignment 3 crits	
	Nov 27	Assignment 3 due	
13	Dec 2	Assignment 3 presentations	
	Dec 4	Final class	
14	Exams/Studio Reviews (no classes)		