CAMOSUN COLLEGE
School of Trades and Technology
Civil Engineering Department

CIVE 291 – Structural Design 1
Fall, 2019

COURSE OUTLINE

Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1 Instructor Information

Instructor	Peter Burrage		
Office hours	Mon 10:30-11:20, Fri 12:30-1:20		
Location	TEC 112		
Phone	(250) 370-4443	Alternative:	
E-mail	burrage@camosun.bc.ca		
Website	http://civil.camosun.bc.ca/student/		

2 Prerequisites and Corequisites

Prerequisite: "C" in CIVE 192

3 Hours and Credits

Course Activity	Hours / Week	Instruction – No of Weeks (Q=11; S=14; "P or S" = 7)
☒ **Lecture (Direct Instruction)**	4	14
☐ **Seminar (Direct Instruction)**		
☒ **Lab /Collaborative Learning**	2	14
☐ **Supervised Field Practice**		
☐ **Workplace Integrated Learning** *(Coop, Internship, etc.)*		
☐ **Other*** ***(please note)*****:**		

Credits = 4

4 Short Description

This course introduces students to the limit states design method in accordance with the BC Building Code. Students also learn to design timber beams, columns, diaphragms, shear walls and connections using the relevant Canadian design codes. Computer based analysis tools are also introduced.

5 Intended Learning Outcomes

Upon successful completion of this course, students will be able to:

- Use BC Building Code and supplements in Limit States Design calculations of dead loads, live loads and loads imposed by snow, wind and temperatures.
- Present properly formatted design notes.
- Describe factors affecting a structure's performance during an earthquake.
- Determine when it is appropriate to use a static design approach for earthquake or wind calculations.
- Explain the use of wood construction materials.
- Calculate material resistance for wood components in accordance with relevant CSA Standards.
- Design timber construction elements including joists, beams, columns, stud walls, shear walls, diaphragms, and connection details.
- Describe the concept of load path.
- Use computer based tools to determine loads and stresses for structures.

6 Course Content and Schedule

Week	*Date of Monday*	*Topic*
1	Sept 2	Intro to Limit States Design and Loads
2	Sept 9	Dead and Live loads
3	Sept 16	Wind and Snow Loads
4	Sept 23	Snow Loads
5	Sept 30	Earthquake Loads
6	Oct 7	**Midterm Exam 1**
7	Oct 14	Intro to Timber Design
8	Oct 21	Joist Design
9	Oct 28	Beam Design
10	Nov 4	Column Design
11	Nov 11	**Midterm Exam 2**
12	Nov 18	Diaphragms and Shear walls
13	Nov 25	Connections
14	Dec 2	Review

7 Basis of Student Assessment

Component	*Weighting*	*Comments*
Assignments	20%	
Mid-term Exams	30%	
Quizzes		
Labs		
Final Exam	50%	
TOTAL	100%	

8 Required Materials to Assist Students to Succeed Throughout the Course

a) Texts –

CWC Wood Design Manual and CSA O86, 2017 Edition, Canadian Wood Council, ISBN 978-1-989039-00-7

Note: this book can be ordered directly from the CWC for a student discount (see webstore.cwc.ca/student-promotion for details).

b) Other –

9 College Supports, Services and Policies

Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ http://camosun.ca/about/mental-health/emergency.html or http://camosun.ca/services/sexual-violence/get-support.html#urgent

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at http://camosun.ca/

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at http://camosun.ca/about/policies/. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

10 Grading System

☒ *Standard Grading System (GPA)*
☐ *Competency Based Grading System*

See Camosun Grading Policy E-1.5

11 Class Policies

- Late assignments will have 10% deducted. Assignments submitted after graded assignments have been returned are worth zero.
- You must pass the final exam (minimum of 50%) to pass the course.

Equity, diversity, and inclusion (EDI) are central to Camosun's culture and values. The Camosun community and the engineering community at large commit to pursuing equity in education regardless of race, heritage, religion, gender or gender identity, and ability. We learn best when we feel safe. Inappropriate, hateful or demeaning comments or actions will not be tolerated. Your suggestions on how to make your experience here better are encouraged and appreciated. Please let me or the department chair know ways to improve your experience at Camosun. If you wish to know more about Camosun's EDI policy, please see the EDI page on the college's website: http://camosun.ca/about/policies/equity-diversity-inclusion.html