

# COURSE OUTLINE



COURSE TITLE:	CIVE 292 – Structural Design 2
CLASS SECTION:	X01A and X01B
TERM:	2022W
COURSE CREDITS:	3
DELIVERY METHOD(S):	Lecture & Lab

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and WSÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here. Learn more about Camosun's [Territorial Acknowledgement](#).

For COVID-19 information please visit <https://legacy.camosun.ca/covid19/index.html>.

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*Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.*

## INSTRUCTOR DETAILS

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NAME:	Adel Shoaib
EMAIL:	<a href="mailto:ShoaibA@camosun.bc.ca">ShoaibA@camosun.bc.ca</a>
OFFICE:	TEC 120
HOURS:	Tuesdays 12:30-1:30 PM, Wednesdays 11:00 AM-12:30 PM, Thursdays 12:00-1:30 PM

*As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.*

## CALENDAR DESCRIPTION

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Students learn to design steel and concrete building elements including beams, columns, slabs and connections using the relevant Canadian design codes. Building Information Modeling (BIM) systems are also introduced.

PREREQUISITE(S): C in CIVE 291

## COURSE LEARNING OUTCOMES / OBJECTIVES

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Upon successful completion of this course a student will be able to:

- Explain the use of steel and concrete in building construction.
- Calculate material resistance for steel and concrete structural components in accordance with relevant CSA Standards.
- Design steel elements including beams, columns, bolted and welded connections.
- Design a preliminary Gerber-Girder system.
- Describe pre- and post-stressing and reinforcing concepts used to overcome concrete's tensile limitations.

- Design concrete elements including beams, one-way slabs, and columns.
- Understand construction load sequencing.
- Design a composite floor system.
- Design basic concrete foundations including pad and strip footings.
- Describe the use of Building Information Modeling (BIM) systems.
- Use BIM to model structural components of a building including beams, columns, braces, floor systems and foundations.

#### REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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- Handbook of Steel Construction and CSA S16, 11<sup>th</sup> edition, Canadian Institute of Steel Construction

- Concrete Design Handbook and CSA A23.3, 4th edition Cement Association of Canada

#### COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

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The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

WEEK	DATE RANGE	LECTURE TOPIC	LAB
		<i>Mondays 3:30 – 5:20 in TEC 175</i>	<i>-X01A: Fridays 8:30-10:20 in TEC 150 Fridays 12:00-12:50 in TEC 151 -X01B: Mondays 12:00-12:50 in TEC 257 Wednesdays 4:00 –4:50 in CBA 151 Fridays 12:00-12:50 in TEC 151</i>
1	Jan 10-14	Inelastic Bending in Steel Members	<b>No Labs</b>
2	Jan 17-21	Steel Beams	Example/Problem Solving
3	Jan 24-28	Steel Columns	Example/Problem Solving & Revit
4	Jan 31-Feb 4	Bolted Connections	Example/Problem Solving & Revit
5	Feb 7-11	Midterm Exam 1	Example/Problem Solving & Revit
6	Feb 14-18	Welded Connections	Example/Problem Solving & Revit
7	Feb 21-25	Reading Break-No Classes	
8	Feb 28-Mar 4	Steel Deck	Example/Problem Solving & Revit
9	Mar 7-11	Composite Floor system	Example/Problem Solving & Revit
10	Mar 14-18	Concrete Beams	Example/Problem Solving & Revit
11	Mar 21-25	Midterm Exam 2	Example/Problem Solving & Revit

WEEK	DATE RANGE	LECTURE TOPIC	LAB
		<i>Mondays 3:30 – 5:20 in TEC 175</i>	<i>-X01A: Fridays 8:30-10:20 in TEC 150 Fridays 12:00-12:50 in TEC 151 -X01B: Mondays 12:00-12:50 in TEC 257 Wednesdays 4:00 –4:50 in CBA 151 Fridays 12:00-12:50 in TEC 151</i>
12	Mar 28- Apr 1	Shear in Concrete Beams	Example/Problem Solving & Revit
13	Apr 4-8	Concrete Slabs and Columns	Example/Problem Solving & Revit
14	Apr 11- 14	Foundations (as time permits)	<b>No Lab</b>

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

## EVALUATION OF LEARNING

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DESCRIPTION	WEIGHTING
Midterm 1	30%
Midterm 2	30%
Final Exam	35%
Lab Work	5%
<b>TOTAL</b>	<b>100%</b>

If you have a concern about a grade you have received for an evaluation, please come and see us as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.  
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

## COURSE GUIDELINES & EXPECTATIONS

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- Presence is required at all scheduled course components.
- You must pass final exam (minimum of 50%) to pass the course.

## SCHOOL OR DEPARTMENTAL INFORMATION

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### Department:

- Civil Engineering Department Chair: Zoe Broom, TEC 116.
- Bridge Program Coordinator: Peter Burrage, TEC 112
- See the chair/program leader if you need:
  - program help such as working out a part-time schedule

- help with transfer credits
- info on services from other departments.

See your instructor if you need help with the course.

**School:** School of Trades and Technology. Office TEC 169

- Dean is Eric Sehn
- Associate Dean is Ken Kosik
- Both are in TEC 169
- Student issues are looked after by the Associate Dean. However, if you need anything, go to the department chair first.

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 know of any 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>

## STUDENT RESPONSIBILITY

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Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

## SUPPORTS AND SERVICES FOR STUDENTS

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Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Support Service	Website
Academic Advising	<a href="http://camosun.ca/advising">http://camosun.ca/advising</a>
Accessible Learning	<a href="http://camosun.ca/accessible-learning">http://camosun.ca/accessible-learning</a>
Counselling	<a href="http://camosun.ca/counselling">http://camosun.ca/counselling</a>
Career Services	<a href="http://camosun.ca/coop">http://camosun.ca/coop</a>
Financial Aid and Awards	<a href="http://camosun.ca/financialaid">http://camosun.ca/financialaid</a>
Help Centres (Math/English/Science)	<a href="http://camosun.ca/help-centres">http://camosun.ca/help-centres</a>
Indigenous Student Support	<a href="http://camosun.ca/indigenous">http://camosun.ca/indigenous</a>

Support Service	Website
International Student Support	<a href="http://camosun.ca/international/">http://camosun.ca/international/</a>
Learning Skills	<a href="http://camosun.ca/learningskills">http://camosun.ca/learningskills</a>
Library	<a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a>
Office of Student Support	<a href="http://camosun.ca/oss">http://camosun.ca/oss</a>
Ombudsperson	<a href="http://camosun.ca/ombuds">http://camosun.ca/ombuds</a>
Registration	<a href="http://camosun.ca/registration">http://camosun.ca/registration</a>
Technology Support	<a href="http://camosun.ca/its">http://camosun.ca/its</a>
Writing Centre	<a href="http://camosun.ca/writing-centre">http://camosun.ca/writing-centre</a>

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

### Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

### Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures” (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

### Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun’s Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student’s right to choose what is right for them. For more information see Camosun’s Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and [camosun.ca/sexual-violence](http://camosun.ca/sexual-violence). To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-370-3841

### Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

**Changes to this Syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.