COURSE SYLLABUS

COURSE TITLE:	CIVE 152 – TRANSPORTATION ENGINEERING
CLASS SECTION:	X01A and X01B
TERM:	2024W
COURSE CREDITS:	3
DELIVERY METHOD(S):	Lecture and Computer Lab

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

INSTRUCTOR DETAILS

NAME:	Peter Fell
EMAIL:	fellp@camosun.bc.ca
OFFICE:	TEC 108
HOURS:	See posting outside office and D2L

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

Students are introduced to the analysis and design of transportation systems at several jurisdictional levels and design domains from rural divided highways to local urban roadways. Students learn how to design cross-sections and explore safety considerations, road drainage and mixed-mode uses. An overview of traffic operations is given to familiarize the student with current analysis methods.

PREREQUISITE(S):	All of: C in CIVE 132
PRE or CO-REQUISITE(S):	none
EXCLUSION(S):	none

COURSE LEARNING OUTCOMES / OBJECTIVES

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

- Identify legislative authorities and discuss relationships between municipal, regional, provincial and federal highway and transportation jurisdictions.
- Evaluate and select standard roadway cross-sections appropriate to meet classification, traffic volume and safety requirements.
- Propose appropriate roadway components related to aesthetics, environmental impact and cost, while considering pedestrians, cyclists, emergency vehicles, transit users, and utilities.
- Design geometric elements of horizontal and vertical road alignments, incorporating appropriate design criteria, guidelines and best practices for low speed and high speed urban and rural design domains.
- Discuss the goals and types of roadway drainage systems and describe their major components.

- Discuss environmental, social, and economic issues typically encountered within transportation systems related to alternate and mixed modes and users.
- Describe the design and general construction process undertaken for highway projects.
- Calculate and balance earthwork volumes and construct mass haul diagrams.
- Analyse and design intersections to meet required capacity, safety, physical constraints, and aesthetics.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

- There is no required text for this course.
- Lecture notes and other supporting material posted in D2L.
- The following are recommended reference material for the course:
    a) Transportation Association of Canada (TAC), *Geometric Design Guide for Canadian Roads*, TAC, 2017, ISBN 1978-1-55187-614-6 (available in Camosun library).
    b) British Columbia. Ministry of Transportation and Infrastructure (MOTI), *BC Supplement to TAC Geometric Design Guide* – 2019 3rd Ed., MOTI, 2019, ISBN 978-0-7726-7322-0 (available online).

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

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

Lectures are as follows:

- Tuesday 3:30 - 5:20 PM in TEC 175

Labs are as follows:

- X01A: Friday 8:30 AM - 11:20 PM in TEC 151
- X01B: Thursday 8:30 AM - 11:20 AM in TEC 151

WEEK	DATE RANGE (M-F)	LECTURE TOPICS	LAB TOPICS	OTHER
1	Jan 8 – 12	Course overview and Introduction to Transportation Engineering	Design Considerations - design parameters intro, transportation regulations	
2	Jan 15 – 19	Design Considerations - Classification of highways Design Parameters - Design vehicles	Design Considerations – Traffic flow, speed, flow, density, Level of Service (LOS) Lab 1: Speed, flow, density LOS	
3	Jan 22 – 26	Design Parameters - Capacity and level of service (Intro & Multi-lane Roadways)	Design Parameters - Sight distance Lab 2: Classification, design vehicles, Sight distance	Lab 1 Due
4	29 Jan – 2 Feb	Design Parameters - Capacity and level of service (2 Lane Roadways)	Lab 3: Capacity & LOS (Multilane Roadways)	Lab 2 Due
5	Feb 5 - 9	Geometric Design – Horizontal alignment (circular curves)	Lab 4: Capacity and level of service (2 Lane Roadways)	Lab 3 Due

WEEK	DATE RANGE (M-F)	LECTURE TOPICS	LAB TOPICS	OTHER
6	Feb 12 - 16	Review for Mid-term Geometric Design – Horizontal alignment (Radius and spiral curve intro)	Lab 5: Horizontal Circular Curves	Lab 4 Due
7	Feb 19 - 23	Reading Break – No lectures	No Labs	
8	Feb 26 – Mar 1	Review for Mid-Term Geometric Design – Spiral Calculations	Civil3D – Intro, Base plans / surfaces Geometric Design - Horizontal alignment (Length of Spiral)	Lab 5 Due (start of lecture period)
9	Mar 4 - 8	Mid-term exam	Civil 3D – Horizonal Alignment Lab 6: Radius, Superelevation, Spiral Length	Mid-term
10	Mar 11 - 15	Geometric Design – Vertical alignment	Civil 3D – Vertical design and cross-sections Lab 7: Spiral Calculations	Lab 6 due
11	Mar 18 - 22	Geometric Design – Cross section design	Civil 3D – Corridors, superelevation Lab 8: Vertical alignment & Cross sections	Lab 7 due
12	Mar 25 – 29	Design Considerations – Earthworks Geometric Design - Intersection design	X01A: No lab (College closed Friday 29 March – Good Friday) X01B: No Lab	Lab 8 due (Thursday 28 March, not later than 5:30pm)
13	Apr 1 - 5	Geometric Design - Intersection design (cont.) Design Considerations - Parking / Misc. topics	Civil 3D - Earthworks volumes Lab 9: Intersection design Pt A	
14	Apr 18 - 12	Review for Final Exam	Lab 10: Intersection design Pt B	Lab 9 due (start of lecture period) Lab 10 - No submission required (participation mark)
15/16	April 15 - 23	Final Exam (details to be announced)		

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 notice is required. Deadlines can be reviewed on the CAL exams page. http://camosun.ca/services/accessible-learning/exams.html

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING	Notes
Lab Assignments	25%	Labs, submitted individually, unless otherwise noted. 10 lab assignments are anticipated.
Mid Term	30%	Open book, 2hr duration, held during Week 9.
Final Exam	40%	Open book, 3hr duration, held during exam week.
Instructor Evaluation	5%	Based on attendance, cooperation, participation, not submitting plagiarized work, etc.
TOTAL	100%	

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

COURSE GUIDELINES & EXPECTATIONS

- Assignments and labs are due at the start of the applicable lecture or lab period, unless otherwise noted. Late assignments and labs will have 10% deducted. Assignments and labs submitted after graded assignments and labs have been returned or after solutions have been posted are worth 0.
- You must complete all assignments in order to qualify to write the final exam.
- You must achieve an average of 50% on the final exam in order to pass the course. In addition, a weighted average of 50% on the mid-term and the final exam must be achieved in order to pass the course.
- A mark of at least a C must be attained to gain credit for the purposes of continuing-on to courses for which this course is a pre-requisite (*CIVE 255 – Municipal Design, CIVE 289 Civil Capstone*).
- Attendance is expected for all scheduled course components. Attendance for the lectures and labs is included as part of the instructor assessment portion of your final grade. If you plan to or do miss a lecture or lab you must speak to the instructor.

SCHOOL OR DEPARTMENTAL INFORMATION

Department:

- Civil Engineering Department. Chair is Zoe Broom, TEC 116.
- See the chair 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 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: https://camosun.ca/about/camosun-college-policies-and-directives/governance

STUDENT RESPONSIBILITY

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

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 camosun.ca/services.

Support Service	Website
Academic Advising	camosun.ca/services/academic-supports/academic-advising
Accessible Learning	camosun.ca/services/academic-supports/accessible-learning
Counselling	camosun.ca/services/health-and-wellness/counselling-centre
Career Services	camosun.ca/services/co-operative-education-and-career-services
Financial Aid and Awards	camosun.ca/registration-records/financial-aid-awards
Help Centres (Math/English/Science)	camosun.ca/services/academic-supports/help-centres
Indigenous Student Support	camosun.ca/programs-courses/iecc/indigenous-student-services
International Student Support	camosun.ca/international

Support Service	Website
Learning Skills	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills
Library	camosun.ca/services/library
Office of Student Support	camosun.ca/services/office-student-support
Ombudsperson	camosun.ca/services/ombudsperson
Registration	camosun.ca/registration-records/registration
Technology Support	camosun.ca/services/its
Writing Centre	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills

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 Integrity

Students are expected to comply with all College policy regarding academic integrity; which is about honest and ethical behaviour in your education journey. The following guide is designed to help you understand your responsibilities: https://camosun.libguides.com/academicintegrity/welcome

Please visit https://camosun.ca/sites/default/files/2021-05/e-1.13.pdf for Camosun's Academic Integrity policy and details for addressing and resolving matters of academic misconduct.

Academic Accommodations for Students with Disabilities

Camosun College is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging appropriate academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a documented disability and think you may need accommodations, you are strongly encouraged to contact the Centre for Accessible Learning (CAL) and register as early as possible. Please visit the CAL website for more information about the process of registering with CAL, including important deadlines: https://camosun.ca/cal

Academic Progress

Please visit https://camosun.ca/sites/default/files/2023-02/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 https://camosun.ca/sites/default/files/2021-05/e-2.2.pdf for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit https://camosun.ca/registration-records/tuition-fees#deadlines.

Grading Policy

Please visit https://camosun.ca/sites/default/files/2021-05/e-1.5.pdf for further details about grading.

Grade Review and Appeals

Please visit https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf for policy relating to requests for review and appeal of grades.

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 (see policy). Please visit https://camosun.ca/services/forms#medical 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: https://camosun.ca/sites/default/files/2021-05/e-2.9.pdf and camosun.ca/services/sexual-violence-support-and-education. To contact the Office of Student Support: 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 https://camosun.ca/sites/default/files/2021-05/e-2.5.pdf to understand the College's expectations of academic integrity and student behavioural conduct.

Looking for other policies?

The full suite of College policies and directives can be found here: https://camosun.ca/about/camosun-college-policies-and-directives

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.