CAMOSUN COLLEGE
School of Trades and Technology
Department of Civil Engineering Technology

CIVE 251
Asset Management
Fall 2020

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 Fell, P.Eng.		
Office hours	See course website		
Location	TEC 108		
Phone	250-370-4483	Alternative:	250-857-2547
E-mail	fellp@camosun.bc.ca		
Website	http://civil.camosun.bc.ca/student/ and D2L		

2 Prerequisites and Corequisites

Prerequisite: 'C' in CIVE 132

3 Hours and Credits

Course Activity

	Hours / Week	Instruction – No of Weeks *(Q=11; S=14; "P or S" = 7)*
☒ **Lecture (Direct Instruction)**	3	14
☐ **Seminar (Direct Instruction)**		
☒ **Lab /Collaborative Learning**	2	14
☐ **Supervised Field Practice**		
☐ **Workplace Integrated Learning** *(Coop, Internship, etc.)*		
☐ **Other*(*please note*):**		

Credits = 3

4 Short Description

Students are provided an overview of current practices as they relate to asset management and infrastructure rehabilitation. Topics include assessment, protection and repair of: pavement, underground pipes, and steel, concrete and masonry structures. Geographic Information Systems (GIS) software is utilized to evaluate infrastructure rehabilitation needs. Basic engineering economics concepts are introduced.

5 Intended Learning Outcomes

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

- Apply the basic concepts of infrastructure asset management planning to preserve and extend the service life of long-term infrastructure assets.
- Evaluate and select appropriate methods for the inspection, condition assessment and rehabilitation of underground pipelines, pavement, steel, concrete and masonry structures, and steel and concrete bridge decks.
- Describe destructive and non-destructive testing methodologies used to assess the condition of civil infrastructure.
- Compare maintenance methods related to infrastructure.
- Describe the process of corrosion and methods for corrosion prevention and rehabilitation.
- Describe the history and process behind building envelope failures.
- Identify methods for building envelope assessment and rehabilitation.
- Apply GIS software tools to develop a record of infrastructure assets.
- Assess infrastructure and develop a rehabilitation plan.
- Assess and apply tools utilized in the inspection, assessment, planning and decision-making process, including: GIS; engineering economics and life-cycle costing; civil analysis and asset management software.

6 Course Content and Schedule

a) Refer to the course website for course content and updates to the schedule

b) This course consists of 3 hours of lecture and 2 hours lab per week. Lectures are Monday 11:00am to 12:20pm – TEC181 and Wednesday 1:30 to 2:50pm - TEC 177. Labs are:

i. Section X01A Monday 13:30 to 15:20pm – TEC150.
ii. Section X01B Thursday 8:30 to 10:20am – TEC148.
iii. Section X01C Tuesday 10:30am to 12:20pm - TEC257.

Week	*Lecture Topic*	*Lab Topic*
1	Course Introduction Introduction to Asset Management	Introduction to Research Topic Report
2	Research Topic Report (cont.) Asset Management - basic concepts and framework	Introduction to Engineering Economics
3	Asset Management – implementation and examples, Benchmarking	Engineering Economics
4	Inspection and Condition Assessment – Introduction / Quiz 1	Engineering Economics
5	Inspection and Condition Assessment – Pavement	Engineering Economics
6	Inspection and Condition Assessment – Pipelines / Quiz 2	Engineering Economics
7	Inspection and Condition Assessment – Bridges	Engineering Economics
8	Maintenance / Term Test No. 1	Introduction to GIS
9	Corrosion / I&I considerations	GIS
10	Rehabilitation Methods – Pipelines / Quiz 3	No Lab (Wed 11 Nov = Stat holiday)
11	Rehabilitation Methods - Roads	GIS

12	Rehabilitation Methods – Misc / Quiz 4	GIS
13	Building Envelopes / Term Test No. 2	GIS
14	Report roundtable discussion	GIS
15	Exam Week (no exam in this course)	

7 Basis of Student Assessment

Component	*Weighting %*	*Comments*
Assignments	15	Assignments and labs, submitted individually, unless otherwise noted
Term tests	40	Open book. Two term tests will be held. 1.5hr duration each. Term Tests in D2L.
Quizzes	10	Open-book. Four quizzes are anticipated. Best three quizzes count. Quizzes in D2L.
Research Topic Report	30	Group case study / research topic report.
Instructor Assessment	5	Instructor assessment based upon attendance, cooperation, participation, not submitting plagiarized work, etc.
TOTAL	100	

8 Required Materials to Assist Students to Succeed Throughout the Course

a) Texts – There is no text for this course. Course handouts and references will be posted to the course web site.

b) Other – Students may wish to obtain a reference on ArcGIS such as: *Getting to Know ArcGIS Desktop*, 5th Edition, ESRI Press, 2018, ISBN: 9781589485105 (Note: 5th Ed. for ArcGIS 10.6)

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 A Safe Place for EVERYONE

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

12 Class Policies

- Presence is required for all scheduled course components.
- Late assignments will have 10% deducted. Assignments submitted after graded assignments have been returned or solutions are posted are worth 0.
- You must achieve 50% on the term tests in order to pass the course.