COURSE SYLLABUS

COURSE TITLE: TEAC 105—Explorations in Technology

CLASS SECTION: X01/X02/X03

TERM: Fall 2024

COURSE CREDITS: 3

DELIVERY METHOD(S):   Seminar

For COVID-19 updates please visit https://camosun.ca/about/covid-19-updates.

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: Civil Engineering

NAME:

EMAIL:

OFFICE:

HOURS:

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.

INSTRUCTOR DETAILS: Computer Science

NAME: Gordon Broom (he/him)

EMAIL: BroomG@camosun.ca

PHONE/TEXT: 250-818-6452

OFFICE: TEC 233, or via Zoom

HOURS: by appointment

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. I have unconscious biases and assumptions, as we all do, please help me discover and remove them.
I was raised in southern Ontario of Scots/Swedish ancestry but I culturally identify as Canadian (second generation), there are no kilts or horned helmets in my heritage. I moved to Victoria in 1992 after graduating from university and now consider myself "almost" a local. I am grateful to live and work in the traditional territories of the Ləḱʷəŋən and W̱SÁNEĆ peoples. I recognize that learning is a lifelong journey and we are all on different paths, and at different points along these paths. As an educator I want to guide and support all

learners in their journeys so I endeavour to not hinder or distract you from your full potential. I would like to be seen as a facilitator rather than a subject expert. Please drop by my office to discuss the course, or just for a chat.

INSTRUCTOR DETAILS: Electronics & Computer Engineering

NAME:

EMAIL:

OFFICE:

HOURS:

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.

INSTRUCTOR DETAILS: Mechanical Engineering

NAME:

EMAIL:

OFFICE:

HOURS:

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

This course provides an introduction to careers and basic skills in Computer Science, Electronic and Computer Engineering Technology, Civil Engineering Technology, and Mechanical Engineering Technology. Students will complete a project in each of the 4 areas.

PREREQUISITE(S):	none
CO-REQUISITE(S):	none
EQUIVALENCIES:	none

COURSE LEARNING OUTCOMES / OBJECTIVES

Upon successful completion of the course students will be able to:
1. Identify careers in the 4 technology fields (Civil, Mechanical, Electronics and Computer Science)
1. Civil - Identify various civil engineering projects and the role that civil engineering plays in each, apply civil engineering methods and calculations to a simple design and civil engineering project
2. Mechanical - demonstrate simple 3D CAD modeling skills, basic shop skills and safety techniques, and identify the design elements associated with the completion of a small mechanical engineering project.
3. Electronics - create a simple electronics circuit, describe simple microcontroller programming concepts, and list the elements of and build a small electronics project.
4. 5. Computer Science - use a programming language to examine the fundamentals of software design and development.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

[INSERT TEXT HERE]

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.

DEPARTMENT	ACTIVITY or TOPIC	ROOM
Civil Engineering	Introduction to Civil Engineering (environmental, geotechnical, traffic/highways, structural); How civil engineering affects every aspect of our lives; what happens when these things go wrong. Survey lab including pacing, estimating distances, equipment, rise and run. Big Problems Project Introduction.	TEC 110
	Introduction to Hydrology and Water Resources. Fluid mechanics labs including Bernoulli, Flow regimes, and Wave tank. Big Project Design	
	Concrete mix design and testing. Big problems design.	
Computer Science	In this portion of the course we practice coding. We start off drawing a smiley face on the screen and by the end of this course we'll be drawing many faces flying around the screen, bouncing off the edges. On this journey we'll learn to use variables, loops, conditionals, arrays, and functions.	TEC 151
Mechanical Engineering	Introduction to Mechanical engineering. Examples of and discussion about typical final projects in Mechanical Engineering Technology. An overview of the design process and an introduction to the TEAC 105 final project: a 3D printed Compressed Air Engine. Hands-on introduction to basic mechanical component modelling using 3D computer-aided-design (CAD) software.	TEC 151
	Introduction to Mechanical engineering. Examples of and discussion about typical final projects in Mechanical Engineering Technology. An overview of the design process and an introduction to the TEAC 105 final project: a 3D printed Compressed Air Engine. Hands-on introduction to basic mechanical component modelling using 3D computer-aided-design (CAD) software.	
	Students will be broken into 3 groups. In turn, each group will tour the Advanced Manufacturing facility @	

DEPARTMENT	ACTIVITY or TOPIC	ROOM
	Camosun's Technology Access Centre (Camosun Innovates), the Mechanical Engineering machine shop and the 3D printer farm. Students will also pick up their 3D printed parts and assemble a 3D printed Compressed Air Engine based on their CAD models. An engine speed competition will be held. Course wrap-up.	
Electronics & Computer Engineering	Electronics in our lives: Modern electronics. Introduction to electronics parts and systems through teardown of electronics devices. Electronics training, accreditation, and careers. Simple LED circuit analysis.	TEC 204
	Electronics hardware: Review of electronics parts and LED biasing. Through-hole soldering. Construction of musical memory game.	
	Electronics software: Basic microcontroller programming concepts. Coding a song. Programming and customizing a musical memory game.	

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. https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams

EVALUATION OF LEARNING

DESCRIPTION		WEIGHTING
Civil Engineering		25%
Computer Science		25%
Electronics & Computer Engineering		25%
Mechanical Engineering		25%
	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. https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf

COURSE GUIDELINES & EXPECTATIONS

Lecture and Seminar Attendance

Lecture and seminar participation are essential to the course objectives, an opportunity for students to ask questions and learn from each other.

SCHOOL OR DEPARTMENTAL INFORMATION

Computer Science Department:

- Chair is Saryta Schaerer, TEC 239.
- See the chair if you need:
  - o program help such as working out a part-time schedule
  - o help with transfer credits
  - o information 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: http://camosun.ca/about/policies/equity-diversity-inclusion.html

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/indigenous

Support Service	Website
International Student Support	camosun.ca/international
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

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: https://camosun.ca/services/academic-supports/accessible-learning

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.