

COURSE SYLLABUS



COURSE TITLE:	MECH 210- Statics and Dynamics
CLASS SECTION:	X01
TERM:	2021F
COURSE CREDITS:	4
DELIVERY METHOD(S):	Lectures, Tutorials

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

The COVID-19 pandemic has presented many challenges, and Camosun College is committed to helping you safely complete your education. Following guidelines from the Provincial Health Officer, WorkSafe BC, and the B.C. Government to ensure the health and wellbeing of students and employees, Camosun College is providing you with every possible protection to keep you safe. Our measures include COVID Training for students and employees, health checks, infection control protocols including sanitization of spaces, PPE and ensuring physical distancing. For details on these precautions please follow this link: <http://camosun.ca/covid19/faq/covid-faqs-students.html>. However, if you're at all uncomfortable being on campus, please share your concerns with your Instructor. If needed, alternatives will be discussed.

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

NAME:	Sam Behfarshad
EMAIL:	behfarshadg@camosun.bc.ca
OFFICE:	TEC 264
HOURS:	Tuesdays: 1:00-2:00pm Fridays 10:30 – 11:30am Also 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.

CALENDAR DESCRIPTION

After a quick review of vector algebra, students will study topics in statics including forces, moments, distributed loads, equilibrium, statically-determinate structures, and center of gravity and centroid. In dynamics, students will learn about the components of velocity and acceleration, motion analysis, force/acceleration, and work/energy.

PREREQUISITE(S): MATH 250A

CO-REQUISITE(S): MATH 250A

EXCLUSION(S): None

COURSE LEARNING OUTCOMES / OBJECTIVES

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

1. Analyze the forces acting both externally and internally on static objects and structures.
2. Utilize the matrix analysis method in both static and dynamic situations.
3. Plot the displacement, velocity and acceleration of points within many different mechanisms.
4. Present analyses in a complete and clear manner.
5. Explain the various structural forms including rods, connections, beams, circular shafts and frames and machines
6. Explain the kinematics of particles and groups of particles. (How particles move and accelerate relative to a stationary axis and how they move relative to other particles)
7. Explain the kinetics of particles and groups of particles using: Force/acceleration; and work/energy methods (How particles are influenced by external forces)

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

Main Textbook: ENGINEERING MECHANICS: Statics and Dynamics, 14th EDITION, 2017, By: R. C. HIBBELER

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:	Wednesdays	11:00-11:50am	TEC 174
	Thursdays	1:30-2:20pm	CBA 101
	Fridays	8:30-9:20am	CBA 210
Tutorials:	Thursdays	2:30-3:20pm	CBA 101

WEEK	ACTIVITY or TOPIC	OTHER NOTES
1	Statics- General principles and force vectors.	-
2	Statics - Equilibrium of a particle	-
3	Statics - Force system resultants	-
4	Statics - Equilibrium of a rigid body	-
5	Statics - Structural Analysis	-
6	Statics - Center of Gravity and centroid	-
7	Statics- Course review- Quiz 3	-
8	Dynamics- Kinematics of a particle, rectilinear motion- Midterm Exam (October 28)	-
9	Dynamics- Curvilinear motion and relative motion of two particles	-
10	Dynamics- Kinetics of a particle, force and acceleration	-
11	Dynamics- Equation of motion for normal, tangential and cylindrical coordinates	-
12	Dynamics- Work and energy principles.	-
13	Dynamics- Power, efficiency and conservation of energy	-
14	Dynamics- Course Review	-
Exam Period	Final Exam (to be scheduled by College Registrar, posted on myCamosun)	

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 scan 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

DESCRIPTION	WEIGHTING
Quizzes	20%
Assignments	10%
Midterm Exam	30%
Participation	5%
Final Exam	35%
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](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>

Lecture Attendance

To get the most out of this course, students are expected to attend all classes and be on time. It is your responsibility to acquire all information given during a class missed, including notes, hand-outs, changed exam dates etc.

Tutorial Attendance

Tutorial participation is essential to the course objectives, and largely involves discussion of the weekly topic. It is also an opportunity for students to ask questions and learn from each other. The participation grade is assigned based on your participation in the weekly lectures and tutorials.

Due Dates and Late Assignments

The due dates are established in accordance with the course and term duration. The purpose of the due dates is to help both you and I to get the assignments done so that they can be assessed in a timely manner. Just as you need time to complete the assignments, I need enough time to grade them. As such, the due dates are fixed (unless you have an approved academic accommodation through CAL) and it is expected that students will hand in assignments on time. Assignment marks, comments, and feedback will be returned to students in a timely manner, usually within 1-3 weeks, depending on the length of the assignment.

All assignments must be handed in by the time indicated (on the assignment, or on D2L). Late assignments may be graded but marks equivalent to 10% of the total value of the assignment will be deducted for each day, inclusive of days on the weekend, past the deadline. If assignments have already been marked and returned, a late assignment will not be accepted. Assignments will not be accepted that are late more than three days, inclusive of days over the weekend.

Quiz and Exam Procedures

All quizzes and exams must be written at the scheduled times with the exception of students requiring an accommodation by CAL. It is understood that emergency circumstances do occur (e.g. severe illness or family emergency); for such circumstances accommodation may be offered at the discretion of the instructor, provided the student:

- a) notifies the instructor in advance of the quiz/exam (not after), and
- b) provides documented evidence of the circumstance (e.g. medical certificate).

If a quiz/exam is missed with an excused absence, it is up to the instructor's discretion as to how the mark will be made up. In most cases, another quiz/exam will be scheduled for the student as soon as possible.

Be sure not to make travel plans for the end of semester until the final exam schedules are finalized and posted. Please ask any family members who might make travel plans on your behalf to consult you before booking tickets.

Please note: the use of cell phones during a test or quiz is not allowed and may result in a zero for that assessment.

Study Habits

Good and regular study habits are essential to do well in this course. You should plan on a weekly minimum of 6 hours outside of scheduled class time for the completion of readings, assignments and for general studying. Joining a study group can help make this more achievable.

Lecture presentations will be uploaded to the course website. These should be used as a study guide, not as your sole source of information. You will need to write down additional key words for examples and explanations given during lecture and review text to support your understanding. It is also recommended practice to transform lecture notes into a study-friendly format after each lecture, incorporating additional information from your textbook. Study these notes before the next class to prepare yourself for new material, which will often build on previously covered material.

Please take advantage of office hours if you need extra clarification and help.

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 <http://camosun.ca/students/>.

Academic Advising	http://camosun.ca/advising
Accessible Learning	http://camosun.ca/accessible-learning
Counselling	http://camosun.ca/counselling
Career Services	http://camosun.ca/coop
Financial Aid and Awards	http://camosun.ca/financialaid
Help Centres (Math/English/Science)	http://camosun.ca/help-centres
Indigenous Student Support	http://camosun.ca/indigenous
International Student Support	http://camosun.ca/international/
Learning Skills	http://camosun.ca/learningskills
Library	http://camosun.ca/services/library/
Office of Student Support	http://camosun.ca/oss
Ombudsperson	http://camosun.ca/ombuds
Registration	http://camosun.ca/registration
Technology Support	http://camosun.ca/its
Writing Centre	http://camosun.ca/writing-centre

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](http://camosun.ca/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. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-3703841

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.