



CAMOSUN COLLEGE

School of Trades and Technology

Mechanical Engineering Department

MECH 210 **Statics and Dynamics** **Fall 2020**

COURSE OUTLINE

The calendar description is available on the web @ <https://online.camosun.ca/d2l/le/content/177589/Home>

Ω 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

(a) Instructor	Sam Behfarshad
(b) Office hours	Fri - 9:30-12:30
(c) Location	TEC 264
(d) Phone	250-370-4445 Alternative: _____
(e) E-mail	behfarshadg@camosun.bc.ca
(f) Website	_____

2. Intended Learning Outcomes

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

- Analyze the forces acting both externally and internally on static objects and structures.
- Utilize the matrix analysis method in both static and dynamic situations.
- Plot the displacement, velocity and acceleration of points within many different mechanisms.
- Present analyses in a complete and clear manner.
- Explain the various structural forms including rods, connections, beams, circular shafts and frames and machines
- 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)
- Explain the kinetics of particles and groups of particles using: Force/acceleration; impulse/momentum; and, work/energy methods (How particles are influenced by external forces)

3. Required Materials

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

4. Course Content

(subject to modification, if necessary)

	Week	Course Content
Statics	1	General principles and force vectors.
	2	Equilibrium of a particle
	3	Force system resultants
	4	Equilibrium of a rigid body
	5	Structural Analysis
	6	Center of Gravity and centroid
Dynamics	7	Vector analysis of dynamic systems, algebraic methods.
	8	Kinematics of a particle
	9	Kinematics of a particle, force and acceleration
	10	Relative position and velocity analysis for rigid bodies
	11	Relative acceleration and analysis for rigid bodies.
	12	Work and energy principles.
	13	Impulse and momentum: both linear and angular.
	14	Course Review

Schedule:

Lectures: Mon 3:30 – 4:20 pm- Lecture
Wed 10:30 – 11:20 am- Tutorial
Wed 11:30 – 12:20 pm- Lecture
Fri 1:30 – 2:20 pm- Lecture

5. Basis of Student Assessment (Weighting)

(Should be directly linked to learning outcomes.)

- (a) Quizzes 20%
- (b) Midterm Exam 35%
- (c) Final exam 45%

6. Grading System

- Standard Grading System (GPA)
- Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

Textbooks: Statics & Dynamics (by Meriam, 9th ed.) and Statics & Dynamics (by Beer, Johnston, 12th ed)

8. 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.

A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3

60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/index.html> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.