



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

**ENGR 264**  
**Engineering Mechanics**  
**Winter - 2019**

**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	Ross Gibbs
Office hours	Please see schedule posted outside office.
Office	TEC 265
Phone	Please use email _____ Alternative: _____
E-mail	<a href="mailto:Gibbs@camosun.bc.ca">Gibbs@camosun.bc.ca</a>
Website	See course list serve.

**2 Prerequisites and Co-requisites**

- ENGR 262

**3 Hours and Credits**

**Course Activity**

- Lecture (Direct Instruction)**
- Seminar (Direct Instruction)**
- Lab /Collaborative Learning**
- Supervised Field Practice**
- Workplace Integrated Learning** (*Coop, Internship, etc.*)
- Other\*** (*please note*):

Hours / Week	Instruction – No of Weeks <small>(Q=11; S=14; "P or S" = 7)</small>
3.0	14
2.0	14

Credits = 3

**4 Short Description**

Students will study the principles of solid mechanics focusing on calculus-based applications. They will cover: internal loads, stresses and strains due to axial, shear, bending and torsion loads, statically indeterminate structures, elasto-plastic behavior, deflection of beams, Mohr's circle for stress and strain, and design of pressure vessels and column buckling.

## 5 Intended Learning Outcomes

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

- Determine the stresses, strains and displacements in structures and their components due to axial, shear, torsion and bending loads, both individually and in combinations;
- Determine the deflections of determinate and indeterminate beams and frames under load;
- Determine maximum in-plane and tri-axial stresses and maximum in-plane strains;
- Design spherical and cylindrical pressure vessels;
- Predict the failure mechanism for an element of a structure under load; and
- Establish the safe load for a column under various loading and support conditions.

## 6 Course Content and Schedule

See last page of this outline.

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

- a) Mechanics of Materials, 8E; James M Gere, Barry J Goodno; Cengage.  
ISBN 9781111577735

## 8 Basis of Student Assessment

<i>Component</i>	<i>Weighting %</i>	<i>Comments</i>
Assignments		
Mid-term Exam		
Quizzes		
Labs		
TOTAL	0	See last page of this outline.

## 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 Class Policies

- You must pass the final exam to pass the course
- Out of class course communication will be via a Google Group. All students must subscribe at: [enr264\\_winter\\_2018@gmail.com](mailto:enr264_winter_2018@gmail.com)

Week	Date	Lect.	Tut.	Eval.	Chapter	Sections	Pages			
							from	to	count	
1	8-Jan	1.5			Review					
	9-Jan	1.5								
	W&H		2			3 - 6	27	56	30	
1	15-Jan	1.5		1	1 Tension, Compression, and Shear					
	16-Jan	1.5					7 - 9	57	79	23
	W&H		2							
2	22-Jan	1.5		1	2 Axially Loaded Members					
	23-Jan	1.5					1 - 5	120	163	44
	W&H		2				6 - 7	164	186	23
3	29-Jan	1.5		1	3 Torsion					
	30-Jan	1.5					11 - 12	205	215	11
	W&H		2				1 - 6	256	291	36
4	5-Feb	1.5		1	5 Stresses in Beams (Basic Topics)					
	6-Feb	1.5					8 - 9	296	306	11
	W&H		2				11	316	323	8
5	12-Feb	1.5		1	6 Stresses in Beams (Advanced Topics)					
	13-Feb	1.5					1 - 6	404	434	31
	W&H		2				8 - 12	439	467	29
6	19-Feb				Reading-Break					
	20-Feb									
	W&H									
7	26-Feb	1.5		1	7 Analysis of Stress and Strain					
	27-Feb	1.5					1 - 3	508	525	18
	W&H		2				4 - 6	526	542	17
8	5-Mar	1.5		1	8 Applications of Plane Stress (Pressure Vessels, Beams, and Combined Loadings)					
	6-Mar	1.5					10	558	565	8
	W&H		2							
9	12-Mar	1.5		1	9 Deflection of Beams					
	13-Mar	1.5					1 - 3	730	745	16
	W&H		2				4 - 5	746	759	14
10	19-Mar	1.5		1	10 Statically Indeterminate Beams					
	20-Mar	1.5					6	760	768	9
	W&H		2				1 - 3	822	831	10
11	26-Mar	1.5		1	11 Columns					
	27-Mar	1.5					4	832	844	13
	W&H		2							
13	2-Apr	1.5		1	11 Columns					
	3-Apr	1.5					1 - 4	870	898	29
	H		2	F1			5 - 7	899	910	12
14	9-Apr	1.5			Final Exam(s)					
	10-Apr	1.5					8 - 9	911	933	23
	H		0	F2						
	Totals	39	24	11			Total page count			
			63	h						
	Evaluation			Mark						
	Quizzes	11 @	6	66						
	Final			34		F1	21.5			
				100		F2	12.5			