



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

CIVE 191
Statics
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

Instructors	Matt Obee & Ross Gibbs	
Office hours	TBA	
Location		
Phone	Please use email	Alternative: _____
E-mail	Gibbs@camosun.bc.ca	
Website	See MME.	

2 Prerequisites and Co-requisites

One of

- MATH 101
- MATH 191

3 Short Description

Students are introduced to force systems, statics of rigid bodies, equivalent forces, and couple systems. Students perform analyses of free body diagrams, frames, and trusses and determine properties of sections and components of two and three dimensional vectors. Shear and bending moment diagrams of beams are drawn.

4 Intended Learning Outcomes

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

- Apply relevant safety regulations and best practices in the lab and in the field.
- Perform unit conversions using SI and US Customary units and perform analysis in both systems.
- Use the concepts of "the principles of statics", "free body diagrams" and "component methods" to determine forces acting on a body.
- Determine the resultant forces of systems of plane concurrent and nonconcurrent, plane parallel and non-parallel forces acting upon a body.
- Determine the resultant force on a body by replacing a force with a force and a couple.

- Determine conditions for equilibrium of bodies acted on by coplanar force systems, moments and couples and combinations of forces and couples in order to solve for reaction forces.
- Analyze various structural forms, including frames, trusses, and beams to find reaction forces and internal forces.
- Determine the properties of structural forms including centre of gravity, centroids of areas and moment of inertia. These properties will be used in later courses to calculate stresses.
- Draw the shear and bending moment diagrams for beams in order to identify internal forces.

5 Required Materials

- a) Statics & Mechanics of Materials LI W/ Modified Mastering Engineering & Etext, Hibbeler, ISBN 9780134300993, or
- b) Statics & Mechanics of Materials Etext W/Mme 12 Mnths Access, Hibbeler, ISBN 9780134392363 ,or
- c) Statics & Mechanics of Materials W/Modified Mastering Engineering, Hibbeler, ISBN 9780134301006.

6 Course Content and Schedule

See last page.

7 Student Assessment

Grading System




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

See [Camosun Grading Policy E-1.5](#)

8 Class Policies

(Edit as you wish)

- Assignments are submitted via Modified Mastering Engineering (MME). See MME website for grading policies for assignments and quizzes.
- You must complete all assignments prior to the final exam to be permitted to write the final exam.
- You must pass the final exam to pass the course.
- Out of class course communication will be via a mailing list.

Week	X01A	X01B	X01C	Time		Assessment				Problems (from 5E)					
	Date			Lecture	Seminar 1	Seminar 2	Assign. †	Quiz ‡	Chapter*	Sections	Examples	PreLim.	Fund.		
1	7-Sep	7-Sep	7-Sep						No Class						
	9-Sep	8-Sep	8-Sep		1.5										
	10-Sep	9-Sep	11-Sep				1.5								
2	14-Sep	14-Sep	14-Sep	2			0		1.1-5 General Principles 2.1-4 Scalars and Vectors, Vector Operations	1-5	1-3		-		
	16-Sep	15-Sep	15-Sep		1.5			0			1-3	1-3	1-2	1-3, 5-6	
	17-Sep	16-Sep	18-Sep			1.5					4	4-6		8-9, 11-12	
3	21-Sep	21-Sep	21-Sep	2			1	1.1-5	2.5-6 Cartesian Vectors, Addition of Cartesian Vectors 2.7-9 Position Vectors, Force Vector Directed Along a Line, Dot Product	5-6	7-9	3-5	13-15		
	23-Sep	22-Sep	22-Sep		1.5						7-8	10-12	6-7	19-22, 24	
	24-Sep	23-Sep	25-Sep			1.5	2	2.1-4			9	13-15	8-9	27, 29	
4	28-Sep	28-Sep	28-Sep	2					Pre-chapter 3, Equilibrium of a Particle, FBD & Coplanar Force Systems, 3D Force Systems	Not in S&MM Textbook					
	30-Sep	29-Sep	29-Sep		1.5			1						2.1-4	
	1-Oct	30-Sep	2-Oct			1.5									
5	5-Oct	5-Oct	5-Oct	2			3	2.5-6	3.1-4 Moment of a Force (Scalar), Cross Product, Moment of a Force (Vector), Principle of Moments	1	1-2				
	7-Oct	6-Oct	6-Oct		1.5			2		2.5-6	2-3	3-4			
	8-Oct	7-Oct	9-Oct			1.5	4	2.7-9			4	5-6	1-2	2-3, 5, 7-8, 10-11	
6	12-Oct	12-Oct	12-Oct						3.5-6 Moment of a Force about a Specified Axis, Moment of a Couple (in seminar)	5	7-9	3-4	13-14, 16, 18		
	14-Oct	13-Oct	13-Oct		1	0.5		5		3.1-4	3	6	11-13		19, 21, 23-24
	15-Oct	14-Oct	16-Oct		1		0.5								
7	19-Oct	19-Oct	19-Oct	2			6	3.5-6	3.7-9 Simplification of a Force and Couple System, Reduction of a Simple Distributed Loading	7	14-16	5	25, 28, 30		
	21-Oct	20-Oct	20-Oct		1.5					5	2.7-9	8	17-20	6-7	31-36
	22-Oct	21-Oct	23-Oct			1.5						9	22-23		37-41
8	26-Oct	26-Oct	26-Oct	2			7	3.7-9	4.1-4 Conditions for Rigid-Body Equilibrium, FBs, Equations of Equilibrium, 2FMs & 3FMs	1-2	1-3				
	28-Oct	27-Oct	27-Oct		1.5					6	3.1-4	3	4-7		
	29-Oct	28-Oct	30-Oct			1.5						4	8	1	1-4
9	2-Nov	2-Nov	2-Nov	2			8	4.1-4	4.5-6 Free-Body Diagrams, Equations of Equilibrium	5	9				
	4-Nov	3-Nov	3-Nov		1.5					7	3.7-9	6	10-11	2-3	8, 11
	5-Nov	4-Nov	6-Nov			1.5									
10	9-Nov	9-Nov	9-Nov	2					5.1-3 Simple Trusses, Method of Joints, Zero-Force Members	1-2	1-3				
	11-Nov	10-Nov	10-Nov				9	4.5-6			3	4	1-2	1-5	
	12-Nov	11-Nov	13-Nov				1.5								
11	16-Nov	16-Nov	16-Nov	2					5.4-5 Method of Sections, Frames	4	5-7		7-8, 11		
	18-Nov	17-Nov	17-Nov		1.5					8	4.5-6	5	8, 10-11	3	14, 16
	19-Nov	18-Nov	20-Nov			1.5									
12	23-Nov	23-Nov	23-Nov	2			10	5.1-4	6 Center of Gravity, Centroid, and Moment of Inertia	TBA					
	25-Nov	24-Nov	24-Nov		1.5			8						5.1-3	
	26-Nov	25-Nov	27-Nov			1.5	11	5.5							
13	30-Nov	30-Nov	30-Nov	2			12	6.1-5	11.1 Shear and Moment Diagrams (SMDs) as $V(x)$ & $M(x)$	1	1-4	TBA			
	2-Dec	1-Dec	1-Dec		1.5			8		5.1-4					
	3-Dec	2-Dec	4-Dec			1.5									
14	7-Dec	7-Dec	7-Dec	2					11.2 Graphical Method for Constructing SMDs	2	5-10	TBA			
	9-Dec	8-Dec	8-Dec		1.5			8		6.1-5					
	10-Dec	9-Dec	11-Dec			1.5	13	11.1-2							
				26	18.5	20	13	8							
				44.5											

* Statics and Mechanics of Materials, 5E; RC Hibbeler; Pearson; ISBN 978-0-13-438259-3

MME: gibbs48176

Evaluation

† MME Assignments	35.1
‡ MME Quizzes	24
Final	40.9

Mark

2.7 marks each for 13 assignments
3.0 marks each for 8 quizzes