SAMPLE COURSE OUTLINE: Information under each heading is required.

Course Outline (F2023)

MEC3XX: STATICS AND MECHANICS OF MATERIALS

Instructor	Dr. Jane Smith, P.Eng. Office: Phone: Email: Office hours:
Prerequisites	MTH 2XX, PCS 2XX, and MTH 1XX
Compulsory Texts:	1. *Vector Mechanics for Engineers, Statics, 12th edition*, Beer, Johnston, Mazurek, McGraw-Hill, 2019. (BJ) 2. *Mechanics of Materials, 4th edition*, Craig, Taleff, John Wiley & Sons, 2020. (MM)
Calendar Description	Statics will cover rigid body equilibrium, including: two and three-force members, trusses, frames and machines. Mechanics of materials will cover introductory stress and strain, Hooke's Law, axial and torsional loading and statically indeterminate problems.

Learning Objectives

At the end of this course, the successful student will have demonstrated that s/he:
1. Demonstrates an in-depth understanding of key concepts related to engineering fundamentals. Applies science knowledge, skills, and competency in modeling and solving engineering problems in components, process, and systems. (1c)
2. Applies mathematics and computations to solve mathematical models (2b).
3. Formulates mathematical models using scientific and engineering principles. (2b)
4. Selects and uses an appropriate method for problem definition. Applies engineering principles to define an accurate problem statement. (4a)

Note: Numbers in parentheses refer to the graduate attributes required by the Canadian Engineering Accreditation Board. See the CEAB Graduate Attributes and Indicators document for more information.

Course Organization

4 hours of lecture per week
1 hour of lab/tutorial per week

Course	Midterm exam	35%
Evaluation	Assignments	10%
	Final exam	55%
	Total	**100%**

NOTE: The assignments mark is only added in the determination of the final grade once a passing mark (i.e., minimum 45/90) is achieved in the combined midterm and final exams.

Examinations   Midterm exam in Week 7, two hours, closed book (covers Weeks 1-6).
Final exam, during exam period, three hours, closed-book (covers Weeks 1-13).

Course Content
(Note - chapter and section numbers given below are only to be used as a guideline)

1. Review of force system resultants (3, BJ)
2. Centroids, Composite Bodies, and Distributed Loads (5.1-5.3, BJ)
3. Equilibrium of a rigid body (4, BJ - Note, Vector method must be used for all 3D equilibrium problems)
4. Plane Trusses, Frames and Machines (6, except for 6.1D, BJ)
5. Internal forces developed in structural members (7.1, BJ)
6. Friction (8.1,8.2A, BJ)
7. Stress and Strain (2.1-2.8, 2.10, 2.11, 2.13, MM)
8. Axial deformation (3.1-3.9, MM)
9. Torsion (4.1-4.9, MM)

Laboratory/Tutorials

Week	Title	Room
2,3	Force resultants (& distributed forces), Centroids and Composite Bodies	TBA
4,5,6	Equilibrium of rigid body	TBA
7,8	Plane trusses, frames and machines, internal forces	TBA
9,10	Friction, stress and strain	TBA
11	Axial deformation	TBA
12	Torsion	TBA

Important Notes

1. ...
2. ...
3. ...

Prepared by: _____   Date: _____
                         Dr. Jane Smith

Approved by: _____   Date: _____
                         Chair/Program Director