SCHULICH School of Engineering

COURSE OUTLINE
Winter 2017

	Date	Initials
Prepared by Instructor		
Approved by Head		

1. Calendar Information

ENGG 202 Engineering Statics

Force vectors; equilibrium of a particle in two and three dimensions; force system resultants; equilibrium of a rigid body in two and three dimensions; internal forces in trusses; frames, machines and beams; bending moment and shear force diagrams; friction; centre of gravity; centroids of areas; composite bodies.

Course Hours: 3 units; H (3-1.5T)

Calendar Reference: http://ucalgary.ca/pubs/calendar/current/engineering.html#30142

2. Learning Outcomes and Graduate Attributes

The main goal of this course is to analyse statics problem, determining the forces acting on and within various bodies. At the end of this course, you will be able to:

1. Identify Newton's three laws of motion and the limits of their validity
2. Isolate an appropriate "particle" or "body" and identify all the forces and moments acting on it
3. Draw the correct Free-Body-Diagram for the isolated part of body
4. Identify the different types of supports, correctly representing all the forces and moments on bodies in a free body diagram
5. Identify and solve the equation of equilibrium for a structure based on the free body diagram
6. Analyse trusses, machines and frames
7. Determine the centre of gravity, centre of mass and centroid for simple and composite bodies
8. Identify and determine the internal forces within members of trusses and frames
9. Solve simple fluid statics problems
10. Use the principle of dry friction to solve equilibrium problems involving friction forces

In order to achieve the above learning outcomes, students are expected to be able to apply basic math and calculus skills including but not limited to trigonometry, geometry, vector operations, differentiation and integration.

Drawing a complete and correct free-body-diagram is integral part of solving statics problems and is required to obtain marks on examination problems.

Graduate Attributes are generic characteristics specified by the CEAB (Canadian Engineering Accreditation Board), expected to be exhibited by graduates of Canadian engineering schools. This table summarizes how the Learning Outcomes relate to key Graduate Attributes addressed in this course.

Learning Outcome*	Graduate Attribute											
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
1.	I											
2.		D										
3.		D										
4.		D										
5.		D										
6.			D									
7.		D										
8.		D										
9.			D									
10.			D									

CEAB Graduate Attributes:

A1. A knowledge base for engineering
A2. Problem analysis
A3. Investigation
A4. Design
A5. Use of engineering tools
A6. Individual and team work
A7. Communication skills
A8. Professionalism
A9. Impact of engineering on society/environment
A10. Ethics and equity
A11. Economics and project management
A12. Life-long learning

*The level at which the learning outcome is addressed in this course:

I (Introduced): Introductory level
D (Developed): Intermediate development level
A (Applied): Advanced application level

3. Timetable

Section	Days of the Week	Start Time	Duration (Minutes)	Location
L01	TR	08:00-09:15	75	ENA 201
L02	MWF	09:00-09:50	50	CHC 119
L03	MWF	08:00-08:50	50	CHC 119
L04	MWF	15:00-15:50	50	ENA 201

4. Course Instructors

Course Coordinator

Section	Name	Phone	Office	Email
L01	Elena Di Martino	403-220-4442	ENF 232	edimarti@ucalgary.ca

Other Instructors

Section	Name	Phone	Office	Email
L02, L03	Marcelo Epstein	403-220-5791	ME 403	mepstein@ucalgary.ca
L04	Jennifer He	403-220-4112	ENF 252	jianhe@ucalgary.ca

Teaching Assistants

Section	Name	Phone	Office	Email
TBD				

5. Examinations

The following examinations will be held in this course:

1. Midterm Exam 1, February 27th 2017 (closed books)
2. Midterm Exam 2, March 27th 2017 (closed books)
3. Final Exam, scheduled by registrar during the exam period (closed books).

Note: The timetable for Registrar Scheduled exams can be found at the University's Enrolment Services website, http://www.ucalgary.ca/registrar/ .

6. Use of Calculators in Examinations

Students may use any calculator for assignments and studying; however, they must use one of the following sanctioned Schulich School of Engineering calculators for exams: Casio-FX260, Casio fX-300MS, TI-30XIIS.

7. Final Grade Determination

The final grade in this course will be based on the following components:

Component	Learning Outcome(s) Evaluated	Weight
E-learning Assignments	2-10	10%
Midterm 1	1-5	20%
Midterm 2	6-8	20%
Final Examination	1-10	50%
Total:		100 %

Notes:

A minimum of 50% on the final exam is necessary in order to pass the course.

8. Textbook

The following textbook is required for this course:

Title	Engineering Mechanics Statics
Author(s)	JL Meriam LG Kraige JN Bolton
Edition, Year	8th edition
Publisher	Wiley

9. Course Policies

Advising Syllabus

All Schulich School of Engineering students and instructors have a responsibility to familiarize themselves with the policies described in the Schulich School of Engineering Advising Syllabus available at:

http://schulich.ucalgary.ca/undergraduate/advising

Emergency Evacuation/Assembly Points

In the event of an alarm sounding, all classrooms and labs must be evacuated immediately. Please respond to alarms promptly by leaving the building by the closest available exit. Faculty and students must remain outside the building until the 'all clear' has been given by a Fire Marshall. In case of emergency, call 220-5333.

Assembly Points have been identified across campus. These areas have been selected as they are large enough to hold a significant number of people and will provide an evacuated population access to washroom facilities and protection from the elements. More information on assembly points can be found at http://www.ucalgary.ca/emergencyplan/assemblypoints.

10. Additional Course Information

Use of Electronic Devices

Use of electronic devices in class for purposes unrelated to the course is not permitted.

Academic Integrity

All students taking courses within the Schulich School of Engineering are expected to adhere to the highest standard of academic integrity and conduct themselves in a manner consistent with the Academic Regulations and Statement on Principles of Conduct (Section J): http://www.ucalgary.ca/pubs/calendar/current/k.html

Other Resources/Help

D2L Site:

This is your best source of up-to-date information in ENGG 202

- Important information posted by your instructors, related to exams and announcements

Devon Academic Resource Centre (DARC):

The hours of operation for the Devon Centre are as follows: Monday-Friday: 9:00-18:00.

Learning assistants are available in DARC 12:00 – 18:00 Monday-Thursday.

E-Learning Assignments and Wiley Plus

All assignments will be posted in the Assignment area. They will be available on campus for students who did not purchase Wiley Plus. A variety of resources are available on the Wiley Plus companion site and they will be introduced during the first week of class.

Tutorial Assistance

Extra tutorial assistance will be made available, dates and times TBA.

Reappraisals

Students who feel they need to submit a reappraisal for marked work should follow the guidelines given at: http://www.ucalgary.ca/pubs/calendar/current/i.html.

Template revised on Aug 9, 2016 (AN)