

# ENGG2160

## Mechanics II - Fall 2012

### Professor and TA Information

Professor: Dr. Michele Oliver, P.Eng., Office: Room 1335, Thornbrough Building, Phone: (519) 824-4120 (Extension 52117), Fax: (519) 836-0227, E-Mail: moliver@uoguelph.ca

Office Hours: By appointment (if you've got a quick question/concern please feel free to send me an email or talk to me before or after class; if you have question(s)/concern(s) that require more time, we can set a time to meet that will work for both of our schedules)

### Teaching Assistants:

Mr. Luke Harris, lharris05@uoguelph.ca

Mr. Praphulla Praphulla, ppraphul@uoguelph.ca

Ms. Nima Zarrinbakyhsh, vnzarrinb@uoguelph.ca

### Course and Schedule Information

Course Description: Study of the fundamental principles of the mechanics of deformable materials; stress and strain; Mohr's circle for transformation of stress and strain; deflection under load; design of beams, shafts, columns and pressure vessels; failure theory and design.

Prerequisites: ENGG\*1210, ENGG\*1500, 0.50 credits in Calculus

Class Time: Tuesday/Thursday - 10:00-11:20 AM, ROZH 103

Tutorial: Section 1 - Tuesday 2:30PM - 3:20 PM, MACK, Room 234  
Section 2 - Wednesday 4:30PM - 5:20 PM, MACK, Room 235  
Section 3 - Thursday 2:30PM - 03:20 PM, MACK, Room 234  
Section 4 - Friday 2:30PM - 03:20 PM, MACK, Room 238

Text (Required): Beer, Johnston, DeWolf and Mazurek. Mechanics of Materials - Sixth Edition, McGraw Hill, New York, New York (available for purchase in the bookstore).

Course Website: D2L Engg 2160.

### Learning Objectives

Upon successful completion of this course, students will be able to:

- Understand the stress-strain behavior of engineering materials in service
- Develop adequate procedures for finding the required dimensions of a member of a specified material to carry a given load subject to stated specifications of stress and deflection

### Schedule of Topics

1. Stress and Strain - Axial Loading
2. Torsional Loading
3. Flexural Loading
4. Transformation of Stress and Strain
5. Deflection of Beams
6. Columns

### Marking

Activity	Percentage of Final Grade
Assignments (approximately 10)	0%
In Tutorial Quizzes (8); top 6 quiz marks count (5% each)	30%
Midterm Exam - Tues. Oct. 23 <sup>rd</sup> , 2012 10:00-11:20 AM (Room 103, ROZH)	30% or 0% (whichever provides the highest overall course grade)
Final Exam - Thurs. Dec. 6 <sup>th</sup> , 2012 8:30 - 10:30 AM (Location TBA)	40% or 70% (whichever provides the highest overall course grade)

If a student does not write the midterm exam, the percentage weighting will be shifted to the final exam such that the final exam will be worth 70% of the student's final grade. Students are strongly advised to study for and write the midterm exam because material from the second half of the course builds on first half course material.

### Assignments

There will be approximately 10 unmarked assignments, each of which will relate quite closely to the quizzes.

### In Tutorial Quizzes

Quizzes must be written in the tutorial section in which the student is registered in order for the quiz mark to count. The top 6 of the 8 quizzes will count toward the student's final grade. In extenuating circumstances, when a student has missed a quiz, a maximum of two make-up quizzes may be written at the end of the semester **ONLY** when accompanied by appropriate SOE approved documentation and timely instructor notification (i.e., prior to when the quiz was to be written). You will be informed by the professor if you are eligible for a makeup quiz. The makeup quiz date will be on Tuesday November 27<sup>th</sup> in Rozanski Room 103 following completion of the last lecture (lecture will end early that day). Intention to write the quiz must be made in writing via email to the course professor one week prior to the quiz makeup day. The email must indicate which quiz(ze)s of the missed quiz(ze)s is/are to be written.

Grading Scale (as per the 2005-2006 University of Guelph Undergraduate Calendar)

Letter Grade	Percent Range
A+	90-100%
A	85-89%
A-	80-84%
B+	77-79%
B	73-76%
B-	70-72%
C+	67-69%
C	63-66%
C-	60-62%
D+	57-59%
D	53-56%
D-	50-52%
F	0-49%

Disclaimer

The instructor reserves the right to change any or all of the above in the event of appropriate circumstances, subject to the University of Guelph Academic Regulations.