

School of Engineering
University of Guelph

ENGINEERING BIOMECHANICS, ENGG*3150

Instructors: Dr. John Runciman, Room 1344, Thornbrough

Teaching Assistant: Zoryana Salo

References:

- Beer, F.P. and E.R. Johnston, Mechanics of Materials, McGraw-Hill Book Company (Second Edition in SI Units).
- Bar Charts, Quick Study Chart, Skeletal System
- Bar Charts, Quick Study Chart, Muscular System
- Bar Charts, Quick Study Chart, Nervous System

Objectives: Students who successfully complete this course will be able to:

- (a) understand the stress-strain behaviour of engineering and biological materials,
- (b) gain a working knowledge with which to select the appropriate material in design,
- (c) acquire an understanding of muscular force generation and associated dynamic responses of the human body.

Method of Evaluation:

The final grade will be determined from the results of one final examination, one mid-term test, 3 laboratory experiments and 7 problem assignments. You will be asked to hand in for marking ONE of the problems assigned weekly. The specific problem will be announced prior to submission. Late submissions will not be accepted for marking. The individual marks will be weighted as follows:

Final examination	30%
Mid-term test	30%
Assignments	20%
Labs	20%

You must have a passing cumulative average (i.e. 50% of 60% = 30% total) for the mid-term test and final examination to pass the course. If not, the course is failed automatically and the final mark is determined by multiplying the sum of the final examination and mid-term test marks by 100/60.

Laboratory Experiments:

Three laboratory experiments are scheduled for this course. These experiments will be conducted in THRN 2193. Students will be divided into groups of 3 - 4 for the duration of the course. A list of group members and lab dates will be posted early in the term. In each experiment, groups will be asked to perform a set of simple, noninvasive, data collection procedures on their subject. For each of the three experiments, students may choose to volunteer as their own subjects. This is optional, although recommended. Please refer to the university web site on "Ethical use of human participants in class projects", for further information.

Method of Presentation:

Lectures, laboratory and problem solving/tutorial periods (3-2). The tutorial periods will include literature reviews and problems compatible with the lecture materials to enhance understanding of the subject matter. The tutorial period is also expected to be utilized as office hours. The students are welcome to bring in questions from preceding lecture hours. Laboratory experiments will be completed in scheduled sections.