OBJECTIVES

To build upon the principles learned in the preceding biomechanics courses and to gain understanding of applied topics in the biomechanics of human motion by:

1) Learning how to review the literature of current topics facing the modern biomechanist.
2) Applying self-directed learning towards the biomechanical solution of human movement problems.

TOPICS TO BE COVERED

LECTURE TOPICS:
- Introduction
- Orthopaedic Biomechanics
- Occupational Biomechanics (History and Pre-employment Screening)
- Occupational Biomechanics (Lifting Models, NIOSH, and Risk Factors)
- Occupational Biomechanics (Workplace Design)
- Biomechanics of Exercise and Equipment Design
- Closed Chain versus Open Chain exercises (Knee Rehabilitation)
- Biomechanical Considerations for Prosthetics and Orthotics
- Impact and Head Injury Criteria
- Helmet Design and Testing
- Forensic Biomechanics
- Functional Electrical Stimulation of Muscle
- Instantaneous Power and Human Performance
- Are Humans Able to Voluntarily Elicit Maximum Muscle Force?
- Wobbling Mass and Visco-Elasticity
- Carpal Tunnel Syndrome
- Detection of Malingering
EVALUATION
Midterm Exam .......................... 25%
Consultant Report ..................... 40%
Final Examination ........................ 35%

POLICY REGARDING DEFERRED TESTS AND EXAMS

Students who miss the term test or final exam for legitimate reasons such as illness may be allowed to write a deferred or "make-up" test. INSERT A STATEMENT DESCRIBING ANY SPECIFICS ABOUT DEFERRED MIDTERMS (e.g. format, date when deferred midterm will be written) In all instances, appropriate documentation must be submitted to the Office of the Associate Dean, Faculty of Science.

Students who miss a Registrar-scheduled final exam can apply to the Associate Dean’s office for permission to write in the deferred final exam schedule. In all cases, appropriate documentation must be submitted to the Office of the Associate Dean, Faculty of Science, for consideration of deferred examination permission. Under no circumstances will the instructor re-schedule a final exam for individual students.

ACADEMIC INTEGRITY

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences (e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript reading "Grade of F assigned for academic dishonesty", and/or suspension or expulsion from the university). It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at: http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf

The following illustrates only three forms of academic dishonesty:
• Plagiarism (e.g. the submission of work that is not one's own or for which other credit has been obtained),
• Improper collaboration in group work.
• Copying or using unauthorized aids in tests and examinations.

ON-LINE LEARNING RESOURCES (if applicable)

Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.
TURNITIN.COM (if applicable)

In this course we will be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com and in hard copy so that is can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity

MODIFICATIONS TO COURSE

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

FEEDBACK

It really helps us improve our services when we hear from our students, faculty and staff about what we can do better. A feedback process brings to our attention situations in which we may not have adequately considered accessibility and allows us to better plan for accessibility in the future.