

**School of Engineering
University of Guelph
BIOMECHANICAL ENGINEERING DESIGN, ENGG*4400
FALL 2010**

Instructor: Dr. John Runciman, Room 1344, THRN

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

- (a) Identify common biomechanical device problems,
- (b) specify suitable device materials, and manufacturing strategies
- (c) apply engineering principles to the development of novel biomechanical designs,
- (d) design and manage the development of biomedical devices.

Scheduling:

Lectures:	1:00 - 2:20	T, TH	MACK 308
Labs:	3:00 - 5:20	T	MACK 304 / THRN 1319
Final Exam,	7:00 - 9:00 pm, Dec 8 th ,		Room TBA

Method of Evaluation: The final grade will be determined from the results of one final examination, 4 assignments, presentation of a mini seminar, submission from the mini seminar and 1 design report. Late submissions will not be accepted for marking. The individual marks will be weighted as follows:

Final examination	25%
Assignments (4)	20%
Mini seminar presentation	10%
Mini seminar submission	10%
Design report	35%

Method of Presentation: Lectures and seminar format discussions.

Topics of Study:

- | | |
|--------------------------------|------------------------|
| 1. General Design Requirements | 2. Materials |
| 3. Design Basics | 4. Medical Tool Design |
| 5. Manufacturability | 6. Standards |
| 7. Design of Medical Implants | 8. Device Failure |
| 9. Project Management | |