

**School of Engineering  
University of Guelph  
BIOMECHANICAL ENGINEERING DESIGN, ENGG\*4400  
FALL 2012**

**Instructor:** Dr. John Runciman, Room 1344, THRN

**Teaching Assistant:** Matt Diccico

**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:	4:00 - 5:20	T, TH	MACN 118
Labs:	1:30 – 3:20	M	THRN 1006 & 1313
Final Exam,	7:00 - 9:00 pm,	Dec 12 <sup>th</sup> ,	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:**

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|--------------------------------|------------------------|
| 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          |                        |