BIOM 5010 / BMG 5112 - Introduction to Biomedical Engineering

Description

Research ethics and methods. Engineering systems approach to analysis and modelling of human anatomy and physiology. Introduction to topics including biomechanics, electrophysiology, and computational biology. Biomedical technologies. Impact of technology on society.

Prerequisites

OCIBME and OCIECE graduate students.

Instructor

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Phone: +1-613-520-2600 x 8785
Office Hours: −Friday1330−1500

Note: Emails to the instructor must contain a subject line "BIOM5010: *your subject line*"

Times and Locations

Fall 2011 (Sept. 8 – Dec. 5)

Section	Activity	Day	Time	Location
BIOM5010	LEC	Wed	11h35−12h55	??
BIOM5010	LEC	Fri	11h35−12h55	??

Text

There is no assigned text. Course material will be from class presentations and assigned readings. Course web site is: http://www.sce.carleton.ca/faculty/adler/biom5010/

Marks

Work	Value
Assignments & Quizzes (Best 10 of 12)	40
Project	30
− Project proposal	− 5
− Midterm report	−10
− Presentation	−15
Final Exam	30

Exams

- For all exams, you will be permitted a calculator and one (1) 8.5"×11" paper sheet containing any information you choose (double sided).

Marks Policies

- Late work Policy (without *excellent* excuse): 1) 20% if ≤ 7 days late, 2) 0 mark > 7 days late
- If you have a question about a mark you have received, fill out, sign and submit this form.
- Academic fraud will be taken seriously. Cooperation between students for assignments is expected and encouraged; however, copying of another's work is not.

Students with Disabilities

Students with disabilities requiring academic accommodations in this course must register with the Paul Menton Centre (PMC) for Students with Disabilities for a formal evaluation of disability-related needs. Registered PMC students are required to contact the Centre, 613-520-6608, every term to ensure that I receive your Letter of Accommodation, no later than two weeks before the first assignment is due or the first in-class test/midterm requiring accommodations. If you require accommodation for your formally scheduled exam(s) in this course, please submit your request for accommodation to PMC by Nov 11, 2011.

Quizzes & Assignments

Each Wednesday class will have either an assignment or quiz due. Quizzes will be the first 10 minutes of class and cover one question in the assigned list. Assignments are due at the beginning of class.

No.	Assignment	Due Date
1 (Quiz)	•	Sep 14
2	•	Sep 21
3	•	Sep 28
4	•	Oct 5
5	•	Oct 12
6	•	Oct 19
7	•	Oct 26
8	•	Nov 2
9	•	Nov 9
10	•	Nov 16
11	•	Nov 23
12	•	Nov 30

Project

By it's nature, an introductory course such as this one, can only cover a small fraction of biomedical engineering. In the project, you are asked to present an investigation into another aspect. By sharing these we hope to cover a broader view of the subject. I will post a list of topics from which you may select one. If these do not appeal to you, you are welcome to suggest another topic.

Activity	Description	Due Date
Project Proposal	Proposal is 3-4 pages (double spaced). Include description, background, and references.	Oct. 12
Midterm report	Report is a minimum of 10 pages (double spaced). Describe project progress to date.	Nov. 11
Presentation	Presentations will be (≤10 minutes) in English. Marks are based on technical content (45%), clarity of presentation (45%), and ability to answer questions (10%).	Dec. 16

Course Outline

Date	Activity
Sep 9	Introduction to Biomedical Engineering.
Sep 14, Sep 16, Sep 21, Sep 23	Statistical Methods
Sep 28, Sep 30, Oct 5, Oct 7,	Research Ethics
Oct 12 Oct 14, Oct 19, Oct 21	Medical Devices, Biomedical Engineering Practice
Oct 26, Oct 28, Nov 2, Nov 4	Cells and Electrophysiology
Nov 9, Nov 11, Nov 16, Nov 18	Oxygen transport (heart and lungs)
Nov 23, Nov 25, Nov 30, Dec. 2	Biomechanics
Dec. 9	Final Exam:
Dec. 16	Project Presentations: