Instructor

Dr. Bruce Wallace
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MC6015

TAs

none

Office Hours

Fridays 1:00 - 2:00pm  MC6015

Course Objectives

BIOM5101/BMG5104/SYSC5307/ELG6307 Biological Signals

Modeling of neuromuscular biological signals, including subthreshold phenomena, active behaviour of cell membranes, and innervation processes. Measurement of biological signals, including electrode effects. Time domain, frequency domain, and adaptive filtering techniques for noise reduction.

Learning Outcomes

At the end of course a student will be able to:

- describe how bioelectric signals manifest physiologically
- appraise methods of acquiring bioelectric signals
- apply models for bioelectric signals
- choose appropriate preprocessing methods for biomedical signals

Course Web Site
Textbook and References

There are no mandatory textbooks for this course. Some recommended textbooks include:


Evaluation and Marking Scheme

Assignments  40%

Project 30%

Final Exam 30%  The final exam will be 3 hours in duration and held during the University’s examination period.

Labs

There are no Labs

Course Assignments

- There will be 4 assignments through the term.
- The assignments will be released through CULearn and student will be expected to submit their solutions within CULearn.
- The Due dates will be end of day on Sep 28, Oct 19, Nov 9, Nov 30.

Project
• Students are required to complete a project and the details are provided within CULearn.
• Critical due dates (see CULearn for details) are below

1. Project Proposal: Sep 28 (see comments regarding duplicate topics in CULearn)
2. Initial Draft Paper: Nov 23
3. Review Comments: Nov 30
4. Final Paper: Dec 7
5. Presentation: tbd - students will present project in last 2 or 3 lectures depending on class size.
6. Presentation Slide submission: No more than 48 hours after your presentation.

Exams

The final examination is for evaluation purposes only and will not be returned to students. You will be able to make arrangements with the instructor or with the department office to see your marked final examination after the final grades have been made available.

General Regulations

• Copyright on Course Materials: The materials created for this course (including course outline, slides, posted notes, labs, project, assignments, quizzes, exams and solutions) are intended for personal use and may not be reproduced or redistributed or posted on any web site without prior written permission from the author(s).
• Deferred Term Work: Students who claim illness, injury or other extraordinary circumstances beyond their control as a reason for missed term work are held responsible for immediately informing the instructor concerned and for making alternate arrangements with the instructor and in all cases this must occur no later than three (3.0) working days after the term work was due. Consult the section 9.3 of the Graduate Calendar for more information.
• Academic Integrity: Students should be aware of their obligations with regards to academic integrity. Please review the information about academic integrity at: https://carleton.ca/registrar/academic-integrity/ This site also contains a link to the complete Academic Integrity Policy that was approved by the University’s Senate.
• Academic Accommodations: Requests for Academic Accommodation You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:
  ◦ Pregnancy obligation
    Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf
  ◦ Religious obligation
    Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf
  ◦ Academic Accommodations for Students with Disabilities
    If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the
term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

- **Survivors of Sexual Violence**
  As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

- **Accommodation for Student Activities**
  Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf