Graduate School of Biomedical Engineering

UNSW Engineering

BIOM9660

Bionics and Neuromodulation

Term 2, 2022

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Mohit Shivdasani	m.shivdasani@unsw.edu.au	Message on Teams or Email to Make Appointment	Room 515A, Level 5, Samuels Building	0401311423

Demonstrators

Name	Email	Availability	Location	Phone
Michael Italiano	m.italiano@student.unsw.edu.au			
Grant Kelly	grant.kelly@unsw.edu.au			
Kristine Quek	k.quek@student.unsw.edu.au			

School Contact Information

Student Services can be contacted via unsw.to/webforms.

answer or multiple-choice questions will be the norm, and the aim will be to assess the student's understanding of the material as the course progresses (breadth as well as depth). Be advised that once a concept is introduced to the course, it may apel0 ′ (bre0 ‰ i e

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Resources

Recommended Resources

Highly Recommended Textbooks:

1) Implantable Neural Prostheses 1 Devices and Applications; Zhou, David; 2009
https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9781493950836

2) Implantable Neural Prostheses 2 Techniques and Engineering Approaches; Zhou, David; 2010
https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9781461424673

3) Neurobionics: The Biomedical Engineering of Neural Prostheses; Shepherd, Robert; 2016
https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9781118814871

4) Neuroprosthetics: Theory And Practice; Kipke, Daryl R; 2017
https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9789813207141

Highly Recommended Journal Papers:

1) Merrill et al. (2005) Electrical stimulation of excitable tissue: design of efficacious and safe protocols. Journal of Neuroscience Methods 141:171-198.

2) Cogan (2008) Neural stimulation and recording electrodes. Annual Reviews in Biomedical Engineering.

Course Evaluation and Development

Feedback throughout the course is encouraged and highly welcome. All feedback will be taken seriously. In the past, student feedback has helped improve the learning experience significantly. Many changes to the course have been made since I started teaching this course in 2018, particularly in relation to respecting student workloads and other commitments. In 2020, a decision was made to eliminate a final exam as an assessment as my strong belief is that this does not contribute much to student learning.

Submission of Assessment Tasks

Laboratory reports and major assignments will require a Non Plagiarism Declaration Cover Sheet.

Assignments should be submitted on time. A daily penalty of 5% of the marks available for that assignment will apply for work received after the due date. Any assignment more than 5 days late will not be accepted. The only exemption will be when prior permission for late submission has been granted by the Course coordinator. Extensions will be granted only on medical or compassionate grounds under extreme circumstances.

Academic Honesty and Plagiarism

PLAGIARISM

Beware! An assignment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise will have their names entered on a plagiarism register and will be liable to disciplinary action, including exclusion from enrolment.

It is expected that all students must at all times submit their own work for assessment. Submitting the work or ideas of someone else without clearly acknowledging the source of borrowed material or ideas is plagiarism.

All assessments which you hand in must have a Non Plagiarism Declaration Cover Sheet. This is for

Academic Information

COURSE EVALUATION AND DEVELOPMENT

Student feedback has helped to shape and develop this course, including feedback obtained from on-line evaluations as part of UNSW's as part of UNSW's myExperience process. You are highly encouraged to complete such an on-line evaluation toward the end of Term. Feedback and suggestions provided will be important in improving the course for future students.

DATES TO NOTE

Refer to MyUNSW for Important Dates, available at:
https://my.unsw.edu.au/student/resources/KeyDates.html

ACADEMIC ADVICE

For information about:

- Notes on assessments and plagiarism,
- Special Considerations,
- School Student Ethics Officer, and
- BESS

refer to the School website available at
http://www.engineering.unsw.edu.au/biomedical-engineering/

Supplementary Examinations:

Supplementary Examinations for Term 2 2022 will be held on (TBC) should you be required to sit one.

This course outline sets out description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle should be consulted for the up to date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline (as updated in Moodle), the description in the Course Outline/Moodle applies.

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Kensington campus is located.

Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	
Knowledge and skill base	
PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline	
PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	
PE1.4 Discernment of knowledge development and research directions within the engineering discipline	
PE1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline	
PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline	
Engineering application ability	
PE2.1 Application of established engineering methods to complex engineering problem solving	
PE2.2 Fluent application of engineering techniques, tools and resources	
PE2.3 Application of systematic engineering synthesis and design processes	
PE2.4 Application of systematic approaches to the conduct and management of engineering projects	
Professional and personal attributes	
PE3.1 Ethical conduct and professional accountability	
PE3.2 Effective oral and written communication in professional and lay domains	
PE3.3 Creative, innovative and pro-active demeanour	
PE3.4 Professional use and management of information	
PE3.5 Orderly management of self, and professional conduct	
PE3.6 Effective team membership and team leadership	