



BIOL2230

Neurophysiology

Session 1, Infrequent attendance, North Ryde 2020

Department of Biological Sciences

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General Information

Unit convenor and teaching staff

Convenor and Lecturer

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205a Culloden Rd (W19F)

Technical Manager

Monika King

monika.king@mq.edu.au

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Kate Barry

kate.barry@mq.edu.au

Credit points

10

Prerequisites

50cp at 1000 level or above including [(BIOL2220 or BIOL247) or (20cp from (BIOL1110 or BIOL115) or (BIOL1210 or BIOL108) or (BIOL1320 or BIOL122) or (ANAT1001 or HLTH108) or (ANAT1002 or HLTH109) or (PSYU1104 or PSYC104) or (PSYU1105 or PSYC105))]

Corequisites

Co-badged status

Unit description

This Unit considers the structure and function of the nervous system. We begin with an overview of the anatomy and functional organization of the central and peripheral divisions of the nervous system. We discuss how the selective permeability of the cell membrane gives rise to the electrical properties of excitable cells. We look in detail at the generation, propagation and transmission of neural signals, and examine the important principles of sensory physiology such as transduction, adaptation and stimulus coding. Having covered these basic principles, the Unit goes on to explore the somatosensory system, which is involved in proprioception and the perception of touch, pain and temperature. The nerves and organs that give rise to the special senses (vision, hearing, taste and smell) are also discussed. We next examine the structure and physiology of muscle cells, and the central control of motor function. Lastly, we cover the autonomic nervous system and the neuroendocrine system, both of which regulate numerous physiological processes throughout the body.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Identify the major anatomical structures and functional subdivisions of the central and peripheral nervous system

ULO2: Explain how neural signals are generated, transmitted and processed in different parts of the nervous system

ULO3: Explain how the central and peripheral branches of the nervous system control somatic (sensory and motor), autonomic and enteric functions

ULO4: Synthesise information taken from the scientific literature about the nervous system and present it to your peers in a concise format

ULO5: Assemble basic electrophysiology recording equipment and perform simple electrophysiological experiments

ULO6: Analyse and interpret the results of simple tests of neural function on human and/or invertebrate animal subjects

Assessment Tasks

Coronavirus (COVID-19) Update

Assessment details are no longer provided here as a result of changes due to the Coronavirus (COVID-19) pandemic.

Students should consult [iLearn](#) for revised unit information.

[Find out more about the Coronavirus \(COVID-19\) and potential impacts on staff and students](#)

General Assessment Information

Assessment details

Full details of assessments will be provided on the BIOL2230 iLearn site and in class

Lab report submission

Lab reports should be submitted as Word documents (not PDFs or other formats) through the relevant Turnitin submission link on iLearn or as otherwise instructed. You must attend the relevant lab classes in order to receive marks for any lab reports that you submit for assessment; submissions will be checked against the attendance roll.

Academic honesty

Assessments must be written by the student and in the students own words. Unless otherwise indicated, all assessments must be submitted online through iLearn and will be scanned and assessed for plagiarism using the Turnitin software. Penalties for plagiarism will be imposed as described in the assessment rubric. Additional penalties may be imposed by the Faculty Disciplinary Committee as per the Macquarie University Academic Integrity Policy.

Extensions, late submissions, absences, and Special Considerations

If you experience a serious and unavoidable disruption to your studies and require an extension for an assessment you must submit an application for Special Consideration via Ask MQ and provide supporting documentation such as a Professional Authority Form. If you anticipate a potentially serious and unavoidable disruption (e.g. scheduled surgery) please contact the Unit Convenor (biol2230@mq.edu.au) as early as possible to apply for an extension before the due date. Macquarie operates a "Fit to Sit" policy (see the policy document) and this applies to lab-based quizzes, the mid-semester and final examinations. Do not sit an exam if you are sick; instead, notify the Unit convenor immediately and submit a Special Consideration request via Ask MQ. **If you fail to submit an assessment by the due date or do not sit a scheduled exam, you will receive zero marks for that assessment item, unless a Special Consideration request is submitted and approved as per the policy.** Similarly, given that lab class attendance is a hurdle for completion of the Unit, any absences from lab classes must be accompanied by a Special Consideration request.

Unit completion

To pass the Unit you must achieve an overall mark of 50% and you must attend a minimum of 6 out of the 9 practical lab classes (this total excludes the compulsory mid-semester test), **remembering also that if you do not attend a lab class for which there is an assessable component you will get zero marks for that assessment.**

Delivery and Resources

Coronavirus (COVID-19) Update

Any references to on-campus delivery below may no longer be relevant due to COVID-19.

Please check here for updated delivery information: https://ask.mq.edu.au/account/pub/display/unit_status

iLearn

The BIOL2230 iLearn site is the main point of contact used to disseminate information about the Unit, so please check this regularly. You can also use the iLearn forum to ask questions and discuss topics directly with your peers.

Lectures

Lectures will be delivered on Monday from 12-2pm (12:00–14:00) at 14 Sir Christopher Ondaatje

Ave - T4 Theatre (+Livestream). Lectures will be recorded with Echo360 and PDFs of the PowerPoint slides will be made available on iLearn (www.mq.edu.au/iLearn). Please do not upload these lecture materials to course sharing websites such as StuDocu as this is a breach of copyright.

Laboratory classes for External students (see iLearn for further information regarding timing and content):

- Wednesday 15 April 09:00 - 17:00 in 4 Wallys Walk (F7B) Science labs 102, 105 & 110
- Thursday 16 April 09:00 - 17:00 in 4 Wallys Walk (F7B) Science labs 102, 105 & 110
- Saturday 16 May 09:00 - 17:00 in 4 Wallys Walk (F7B) Science labs 102, 105 & 110
- Sunday 17 May 09:00 - 17:00 in 4 Wallys Walk (F7B) Science labs 102, 105 & 110

Additional information about laboratory classes:

- Lab classes are **compulsory** and students must attend the class into which they have enrolled;
- This year, 4 of the lab classes have an assessable component in the form of a written lab report using information or data gathered during the lab class;
- Three short lab quizzes, the mid-semester test and an assessed group presentation exercise will also be held in the lab class slots;
- If through misadventure you are unable to attend a lab class you must apply for Special Consideration and where possible catch-up the lab class with the internal students. If you do not apply for (or do not receive) a Special Consideration for an absence from any of the assessed lab classes and do not make these up through the internal class schedule (where timing permits) you will receive a mark of zero for that lab class report;
- Students must not exchange their lab class slot. However, in special circumstances, students may request a specific change. These requests are to be submitted by emailing Monika King (monika.king@mq.edu.au);
- An attendance register will be held and must be signed by all students at the start of each practical class. Please note that signing for someone else is a breach of the Academic Integrity Policy and will be treated as such;
- Please remember that all lab classes and the mid-semester test will be held in the 4WW (F7B) Science Laboratories and **you must wear enclosed footwear at all times when in the labs, including for exams**. Due to WHS regulations, we are not allowed to let any student into the lab if they do not wear appropriate shoes;
- Several lab activities involve experimentation on invertebrates (crickets). If for religious or cultural reasons you are unable to participate in such experiments please contact the Unit Convenor (biol2230@mq.edu.au) to discuss this prior to the start of the Semester.
- Lab classes are also a great forum to discuss any concepts that you are struggling to

understand or are particularly interested in with the tutors.

Recommended text

- Stanfield, C. L. (2017) "Principles of Human Physiology" (6th Edition). Pearson. ISBN: 9781292156484. Available through the Macquarie Co-Op Bookshop. The 5th Edition is also suitable.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.