MEDI2301

Cellular and Molecular Neuroscience

Session 2, Special circumstances, North Ryde 2021

Medicine, Health and Human Sciences Faculty level units

Contents

Session 2 Learning and Teaching Update

The decision has been made to conduct study online for the remainder of Session 2 for all units WITHOUT mandatory on-campus learning activities. Exams for Session 2 will also be online where possible to do so.

This is due to the extension of the lockdown orders and to provide certainty around arrangements for the remainder of Session 2. We hope to return to campus beyond Session 2 as soon as it is safe and appropriate to do so.

Some classes/teaching activities cannot be moved online and must be taught on campus. You should already know if you are in one of these classes/teaching activities and your unit convenor will provide you with more information via iLearn. If you want to confirm, see the list of units with mandatory on-campus classes/teaching activities.

Visit the MQ COVID-19 information page for more detail.

General Information

Unit convenor and teaching staff
Thomas Fath
thomas.fath@mq.edu.au

Cara Hildreth
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Credit points
10

Prerequisites
COGS100 or COGS1000 or HLTH108 or ANAT1001 or BIOL115 or BIOL1110

Corequisites

Co-badged status

Unit description
In the first part of this unit you will cover various topics, including the morphogenesis and function of neurons and glial cells in the peripheral and central nervous system. A particular emphasis will be the discussion of the structure and function of specialised micro-compartments in neuronal cells, the generation of electrical signals in neurons, the structure, properties and function of ion channels, receptors and transporters and chemical transmission of signals at nerve cell connections. In the second part of this unit, you will focus on how neuronal function is disrupted in disease and which technologies are available to interrogate functional aspects of the nervous system under physiological conditions and in the diseased nervous system. This will include an in depth discussion of modern experimental technologies in cellular physiology as well as the application of molecular biology techniques to manipulate and explore the function of molecules in the nervous system.

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: Explain the structure and function of neurons and non-neuronal cells of the nervous system.

ULO2: Identify sub-cellular compartments in neurons and how they are involved in the regulation of neuronal function.

ULO3: Describe experimental techniques for studying of cell function in the nervous system.

ULO4: Explain pathomechanisms in the injured and diseased nervous system at a cellular level.

General Assessment Information

Grade descriptors and other information concerning grading are contained in Schedule 1 of the Macquarie University Assessment Policy, which is available at: https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment.

Further details for each assessment task will be available on iLearn.

All final grades in the Bachelor of Medical Science are determined by a grading committee and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade plus a Standardised Numerical Grade (SNG). The SNG is not necessarily a summation of the individual assessment components. The final grade and SNG that are awarded reflect the corresponding grade descriptor in the Grading Policy.

To pass this unit, students must demonstrate sufficient evidence of achievement of the learning outcomes, attempt all assessment tasks, meet any ungraded requirements including professionalism and achieve an SNG of 50 or better.

Extensions for Assessment Tasks

Applications for assessment task extensions must be submitted via www.ask.mq.edu.au . For further details please refer to the Special Consideration Policy available at https://students.mq.edu.au/study/my-study-program/special-consideration.

Late Submission of Work

Late submissions will receive a 5% per day penalty including weekends and public holidays. If you submit the assessment task 10 days or more beyond the due date, without an approved extension, you will be awarded a maximum of 50% of the overall assessment marks.

Online quizzes

Assessment Type [1]: Participatory task Indicative Time on Task [2]: 2 hours Due: **Continuous from Week 2 till Week 10** Weighting: **20%**

In-class quizzes, assessing unit content, delivered to this point, using online MCQs, conducted under exam conditions

On successful completion you will be able to:

- Explain the structure and function of neurons and non-neuronal cells of the nervous

system.
- Identify sub-cellular compartments in neurons and how they are involved in the regulation of neuronal function.
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- Explain pathomechanisms in the injured and diseased nervous system at a cellular level.

Mid-session exam

Assessment Type [1]: Examination Indicative Time on Task [2]: 10 hours Due: **Week 7** Weighting: **30%**

Short answer questions and MCQs

On successful completion you will be able to:

- Explain the structure and function of neurons and non-neuronal cells of the nervous system.
- Identify sub-cellular compartments in neurons and how they are involved in the regulation of neuronal function.
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Research Essay

Assessment Type [1]: Essay Indicative Time on Task [2]: 20 hours Due: **Week 11** Weighting: **20%**

Critical Review and Synthesis of Research Topic

On successful completion you will be able to:

- Explain the structure and function of neurons and non-neuronal cells of the nervous system.
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End-of-session Exam

Assessment Type [1]: Examination Indicative Time on Task [2]: 10 hours Due: **Exam Period** Weighting: **30%**

Formal exam, assessing all unit content [short answers and MCQs], held in the Uni exam period

On successful completion you will be able to:

- Explain the structure and function of neurons and non-neuronal cells of the nervous

system.

- Identify sub-cellular compartments in neurons and how they are involved in the regulation of neuronal function.
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- Explain pathomechanisms in the injured and diseased nervous system at a cellular level.

[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Learning Skills Unit for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Assessment Tasks

Name	Weighting	Hurdle	Due
End-of-session Exam	30%	No	Exam Period
Research Essay	20%	No	Week 11
Mid-session exam	30%	No	Week 7
Online quizzes	20%	No	Continuous from Week 2 till Week 10

End-of-session Exam

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Due: **Continuous from Week 2 till Week 10**
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[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

This unit involves essential on-campus learning activities which will be delivered in accordance with a COVID Safe plan. You are expected to attend on-campus for these activities unless the Public Health Orders and/or University advice changes, you have any symptoms of COVID or you have been identified as a contact of an individual with COVID. Please refer to iLearn for further information.

Lectures

Lectures are held weekly, starting in Week 1. Lectures run from 1**:00 PM - 2:00 PM Mondays** and **11:00 AM - 12:00 PM Tuesdays**. Lectures will be accessible via iLearn as pre-recordings or will be held live via Zoom during the allocated lecture times.

Lecture slides will be uploaded just before the lecture time under the lecture link in the relevant week below. Lecture recordings (pre-recordings and recordings of Zoom presentations will be available through Echo360.

Prior to each Monday lecture from Week 2 to Week 10 brief online quizzes will take place, which will form part of the Participatory Assessment Task in the Unit. For more information, see Weekly Online Quizzes below.

Practicals

Practicals will be delivered in a mixed-mode with Practicals on campus and online practicals. Please consult iLearn for further detail.

Tutorials

Tutorials will be held weekly in 2-hour blocks in a mixed-mode of face-to-face and online delivery. The tutorials entail the in-depth discussion of current research articles, related to the previous week's lecture topic. Please consult iLearn for further detail.

Required Unit Materials

All students are required to wear closed shoes and lab coat/gowns to attend on-campus practical classes.

Recommended Readings

Prescribed textbooks

Purves D. et al. (Eds.) (2018) NEUROSCIENCE, 6th edition. Oxford, UK: Oxford University Press.

Kandel E. et al. (Eds) (2013) Principles of Neuroscience, 5th edition. McGraw-Hill Companies.

Reviews and original research articles as advised by teaching staff each week

Unit readings for this unit are available via the iLearn and university library website.

iLearn

You will need reliable access to the internet to access the unit's iLearn page. Through iLearn you will be able to access the lecture recordings (Echo360), additional readings, and feedback and marks for the assessment tasks. Please allow time to familiarise yourself with how to access iLearn. Further information about iLearn can be found at: https://help.ilearn.mq.edu.au/

Weekly online quizzes

This unit has weekly online quizzes (Weeks 2-10), designed to keep you on track during the fast-paced semester. MCQ online quizzes will be graded. No make-up quizzes will be permitted (with the exception of officially approved Disruption to Studies requests). However, your 2 lowest quizzes will be dropped at the end of the semester.

The quizzes are delivered through iLearn, so you need to have access to a reliable computer with a connection to the Internet. Technical difficulties will not be accepted as a reason for special consideration.

Student Professionalism and Attendance

In the Faculty of Medicine and Health Sciences professionalism is a key capability embedded in all our programs. As part of developing professionalism, Faculty of Medicine, Health and Human Sciences, you are expected to attend all small group interactive sessions including tutorials, and laboratory practical sessions. In most cases lectures are recorded; however, lecture recordings cannot be guaranteed and some discussion or content may not be available for viewing via the recording system.

All lectures and tutorials are scheduled in your individual timetable. The timetable for classes can be found on the University web site at: http://www.timetables.mq.edu.au/.

Failure to attend any learning and teaching activities, including lectures and tutorials, may impact your final results. It is your responsibility to contact their tutor or the unit convenor by email to

inform tutors if you are going to be absent.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://policies.mq.edu.au). 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

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

To find other policies relating to Teaching and Learning, visit Policy Central (https://policies.mq.edu.au) and use the search tool.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/admin/other-resources/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.