



MEDI204

Neuroscience 1

S2 Day 2016

Medicine and Health Sciences Faculty level units

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General Information

Unit convenor and teaching staff

Unit Convenor

Cara Hildreth

cara.hildreth@mq.edu.au

Contact via 9850 2721

by appointment

Lecturer

Jacqueline Phillips

jacqueline.phillips@mq.edu.au

Lecturer

Simon McMullan

simon.mcmullan@mq.edu.au

Lecturer

Sarah Hemley

sarah.hemley@mq.edu.au

Lecturer

Lucinda McRobb

lucinda.mcrobb@mq.edu.au

Lecturer

Mark Connor

mark.connor@mq.edu.au

Credit points

3

Prerequisites

Admission to BClinSc and 12cp

Corequisites

Co-badged status

Unit description

This unit allow students to gain a comprehensive understanding of the organisation of the nervous system, how the nervous system develops and communicates information and the neural control of movement, somatic sensation and homeostatic function. A large emphasis will be placed on the clinical consequences that arise from pathological changes to these systems, with practical sessions aimed at integrating information learnt in lectures with associated pathology.

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:

Describe the organisation of the nervous system and how this relates to the production of movement, perception of somatic sensations and regulation of essential bodily functions.

Discuss the pathological changes that may affect neural control of movement, somatic sensation and homeostatic function and apply this knowledge in a clinical context.

Identify the brain structures critical for movement, sensation and homeostatic function.

Explain the specific function of each brain region and the pathological changes that may affect their function.

Present a critique of published research articles relating to disorders of movement, sensation and/or homeostatic control and demonstrate an understanding of how this relates to the organisation of the nervous system and recent medical advances in the field.

Assessment Tasks

Name	Weighting	Due
Online Quizzes	10%	Weekly
Case Study Report	20%	Week 9.
Practical Test	15%	Week 12.
Group Presentation	15%	Week 13.
Final Examination.	40%	TBA

Online Quizzes

Due: **Weekly**

Weighting: **10%**

Weekly over weeks 2-13

On successful completion you will be able to:

- Describe the organisation of the nervous system and how this relates to the production of movement, perception of somatic sensations and regulation of essential bodily functions.
- Explain the specific function of each brain region and the pathological changes that may affect their function.

Case Study Report

Due: **Week 9.**

Weighting: **20%**

Clinical cases relating to neurological disorders.

On successful completion you will be able to:

- Discuss the pathological changes that may affect neural control of movement, somatic sensation and homeostatic function and apply this knowledge in a clinical context.
- Present a critique of published research articles relating to disorders of movement, sensation and/or homeostatic control and demonstrate an understanding of how this relates to the organisation of the nervous system and recent medical advances in the field.

Practical Test

Due: **Week 12.**

Weighting: **15%**

Assesses comprehension of neuroanatomy.

On successful completion you will be able to:

- Identify the brain structures critical for movement, sensation and homeostatic function.
- Explain the specific function of each brain region and the pathological changes that may affect their function.

Group Presentation

Due: **Week 13.**

Weighting: **15%**

Group assessment (confidential) of each member's contribution and self-reflection of individual contribution to group learning.

On successful completion you will be able to:

- Discuss the pathological changes that may affect neural control of movement, somatic sensation and homeostatic function and apply this knowledge in a clinical context.
- Present a critique of published research articles relating to disorders of movement, sensation and/or homeostatic control and demonstrate an understanding of how this relates to the organisation of the nervous system and recent medical advances in the field.

Final Examination.

Due: **TBA**

Weighting: **40%**

50% MCQs and 50% short answer questions.

On successful completion you will be able to:

- Describe the organisation of the nervous system and how this relates to the production of movement, perception of somatic sensations and regulation of essential bodily functions.
- Explain the specific function of each brain region and the pathological changes that may affect their function.

Delivery and Resources

Classes:

MEDI 204 is offered in internal mode only. Students will attend two 1 hour lectures per week. In addition to weekly lectures, students will undertake one 2 hour tutorial per fortnight and one 2 hour anatomy practical per fortnight. Lecture, tutorial and anatomy practical material will be assessed regularly throughout the course. Students who do not attend all lectures, tutorial and anatomy practical classes may find it difficult to pass the Unit.

Lecture Notes and Textbooks:

Lecture notes containing a copy of the slides presented in each lecture will be available for download as pdf files from iLearn. Recordings of each lecture will also be available for download via Echo360.

A number of textbooks are recommended for this unit covering various aspects of the course.

The main textbooks are: **Guyton & Hall. *Textbook of Medical Physiology* (Elsevier)** and **Nicholls, Martin, Fuchs, Brown, Diamond & Weisblat. *From Neuron to Brain* (Sinauer).**

These textbooks relate to material covered in Lectures. Guyton & Hall's Textbook of Medical Physiology provides a good introduction to neuroscience with more topics covered in greater detail in From Neuron to Brain.

For tutorials, it is recommended that you read **Hauser & Josephson. *Harrison's Neurology in Clinical Medicine* (McGraw Hill Publishers)** or **Young, Young & Tolbert. *Basic Clinical Neuroscience* (Wolters Kluwer)**

For anatomy practicals, it is highly recommended that you obtain a copy of **Haines. *Neuroanatomy in Clinical Context: An atlas of Structures, Sections, Systems, and Syndromes* (Wolters Kluwer)** and bring this with you to class. A copy of the **MEDI 204 Workbook** available for purchase in the Co-Op Bookshop will also be required.

The most recent edition of each text will be placed on reserve in the library. Any of the recent editions of these texts are suitable. There are other neuroscience textbooks that will provide useful background to this unit. In addition, popular scientific journals such as New Scientist and Nature Neuroscience contain articles that are easy to read and understand, providing a good overview of recent developments in neuroscience.

iLearn:

All lecture material will be recorded and made available through iLearn (<https://ilearn.mq.edu.au/login/MQ/>). In addition, a number of learning activities and resources will be available on iLearn that supplement the material covered in lectures. It is recommended that you go through all learning activities and resources.

iLearn will also be used to communicate important information about assessments and tests. It is expected that you log on to iLearn regularly so you can:

- Check for announcements
- Download lecture material
- Complete weekly on-line quizzes
- Access supplementary learning material
- Communicate with lecturers
- Check your grades

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit <http://students.mq.edu.au/events/2016/07/19/ne>

[w assessment policy in place from session 2/](#)

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of 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/support/student_conduct/

Results

Results shown in *iLearn*, 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.

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 improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

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

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.

Graduate Capabilities

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Describe the organisation of the nervous system and how this relates to the production of movement, perception of somatic sensations and regulation of essential bodily functions.
- Discuss the pathological changes that may affect neural control of movement, somatic sensation and homeostatic function and apply this knowledge in a clinical context.
- Identify the brain structures critical for movement, sensation and homeostatic function.
- Explain the specific function of each brain region and the pathological changes that may affect their function.
- Present a critique of published research articles relating to disorders of movement, sensation and/or homeostatic control and demonstrate an understanding of how this relates to the organisation of the nervous system and recent medical advances in the field.

Assessment tasks

- Online Quizzes
- Case Study Report
- Practical Test
- Group Presentation
- Final Examination.

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Discuss the pathological changes that may affect neural control of movement, somatic sensation and homeostatic function and apply this knowledge in a clinical context.
- Explain the specific function of each brain region and the pathological changes that may affect their function.
- Present a critique of published research articles relating to disorders of movement, sensation and/or homeostatic control and demonstrate an understanding of how this relates to the organisation of the nervous system and recent medical advances in the field.

Assessment tasks

- Online Quizzes
- Case Study Report
- Practical Test
- Group Presentation
- Final Examination.

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcome

- Present a critique of published research articles relating to disorders of movement, sensation and/or homeostatic control and demonstrate an understanding of how this relates to the organisation of the nervous system and recent medical advances in the field.

Assessment tasks

- Case Study Report
- Group Presentation