MEDI2300
Nervous System
Session 1, In person-scheduled-weekday, North Ryde 2023

Macquarie Medical School

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General Information

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Course Director
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Credit points
10

Prerequisites
40cp at 1000 level or above including HLTH108 or ANAT1001

Corequisites

Co-badged status

Unit description
This unit will provide you with an introductory understanding of the nervous system. This unit integrates both anatomy and physiology allowing you to learn about how the nervous system is organised and communicates information with a particular focus on the production of movement, processing of sensory information, regulation of homeostatic function and the basics of learning and memory. You will also be introduced to drug classes that positively and negatively affect the functioning of the nervous system and the clinical consequences that arise from pathological changes to the nervous system. Key learning activities will include lectures, tutorial and practical sessions.

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: Describe the general organisation of the nervous system and how communication occurs within the nervous system.

ULO2: Identify the brain structures critical for movement, sensation, homeostatic function, and learning and memory.

ULO4: Outline the mechanism of action of specific drug classes that affect the functioning of the nervous system.

ULO3: Discuss how the nervous system produces movement, processes sensory information, regulates homeostatic function and consolidates learning and memory.

ULO5: Identify how common pathological conditions affect neural control of movement, sensation, homeostatic function and/or learning and memory.

### General Assessment Information

Grade descriptors and other information concerning grading are contained in the [Macquarie University Assessment Policy](https://unitguides.mq.edu.au/unit_offerings/157797/unit_guide/print).

All final grades are determined by a grading committee, in accordance with the Macquarie University Assessment Policy, and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade and a mark which must correspond to the grade descriptors specified in the [Assessment Procedure](https://unitguides.mq.edu.au/unit_offerings/157797/unit_guide/print) (clause 128).

To pass this unit, you must demonstrate sufficient evidence of achievement of the learning outcomes, meet any ungraded requirements, and achieve a final mark of 50 or better.

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

### Late Submission

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of ‘0’ will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55 pm. A one-hour grace period is provided to students who experience a technical concern.

For example:

<table>
<thead>
<tr>
<th>Number of days (hours) late</th>
<th>Total possible marks</th>
<th>Deduction</th>
<th>Raw mark</th>
<th>Final mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day (1-24 hours)</td>
<td>100</td>
<td>5</td>
<td>75</td>
<td>70</td>
</tr>
<tr>
<td>2 days (24-48 hours)</td>
<td>100</td>
<td>10</td>
<td>75</td>
<td>65</td>
</tr>
<tr>
<td>3 days (48-72 hours)</td>
<td>100</td>
<td>15</td>
<td>75</td>
<td>60</td>
</tr>
<tr>
<td>7 days (144-168 hours)</td>
<td>100</td>
<td>35</td>
<td>75</td>
<td>40</td>
</tr>
<tr>
<td>&gt;7 days (&gt;168 hours)</td>
<td>100</td>
<td>-</td>
<td>75</td>
<td>0</td>
</tr>
</tbody>
</table>
For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

**Special Consideration**

If you are unable to complete an assessment task on or by the specified date due to circumstances that are unexpected, unavoidable, significantly disruptive and beyond your control, you may apply for special consideration in accordance with the [Special Consideration Policy](https://unitguides.mq.edu.au/). Applications for special consideration must be supported by appropriate evidence and submitted via ask.mq.edu.au.

### Assessment Tasks

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam</td>
<td>50%</td>
<td>No</td>
<td>Exam Period</td>
</tr>
<tr>
<td>Anatomy Test</td>
<td>20%</td>
<td>No</td>
<td>Week 12</td>
</tr>
<tr>
<td>Learning Resource</td>
<td>15%</td>
<td>No</td>
<td>Multiple weeks</td>
</tr>
<tr>
<td>Quiz</td>
<td>15%</td>
<td>No</td>
<td>Multiple weeks</td>
</tr>
</tbody>
</table>

**Final Exam**

Assessment Type ¹: Examination  
Indicative Time on Task ²: 20 hours  
Due: Exam Period  
Weighting: 50%

On-campus formal exam assessing content delivered across the session taken during the University examination period.

On successful completion you will be able to:

- Describe the general organisation of the nervous system and how communication occurs within the nervous system.
- Identify the brain structures critical for movement, sensation, homeostatic function, and learning and memory.
- Outline the mechanism of action of specific drug classes that affect the functioning of the nervous system.
- Discuss how the nervous system produces movement, processes sensory information,
regulates homeostatic function and consolidates learning and memory.

- Identify how common pathological conditions affect neural control of movement, sensation, homeostatic function and/or learning and memory.

**Anatomy Test**

Assessment Type: Quiz/Test  
Indicative Time on Task: 20 hours  
Due: **Week 12**  
Weighting: **20%**

On-campus test assessing material covered in and related to anatomy practical sessions.

On successful completion you will be able to:

- Describe the general organisation of the nervous system and how communication occurs within the nervous system.
- Identify the brain structures critical for movement, sensation, homeostatic function, and learning and memory.
- Discuss how the nervous system produces movement, processes sensory information, regulates homeostatic function and consolidates learning and memory.

**Learning Resource**

Assessment Type: Creative work  
Indicative Time on Task: 12 hours  
Due: **Multiple weeks**  
Weighting: **15%**

A two-part assessment where students (1) create a collection of learning resources that are made available to their peers to assist with their learning and (2) engage with the learning resources created by their peers.

On successful completion you will be able to:

- Describe the general organisation of the nervous system and how communication occurs within the nervous system.
- Identify the brain structures critical for movement, sensation, homeostatic function, and learning and memory.
• Outline the mechanism of action of specific drug classes that affect the functioning of the nervous system.
• Discuss how the nervous system produces movement, processes sensory information, regulates homeostatic function and consolidates learning and memory.
• Identify how common pathological conditions affect neural control of movement, sensation, homeostatic function and/or learning and memory.

Quiz

Assessment Type: Participatory task
Indicative Time on Task: 12 hours
Due: Multiple weeks
Weighting: 15%

Weekly, low-stakes, open-book quiz covering learning material for the week and prepares students for in-class activities. Top six test results count towards final mark.

On successful completion you will be able to:
• Describe the general organisation of the nervous system and how communication occurs within the nervous system.
• Identify the brain structures critical for movement, sensation, homeostatic function, and learning and memory.
• Outline the mechanism of action of specific drug classes that affect the functioning of the nervous system.
• Discuss how the nervous system produces movement, processes sensory information, regulates homeostatic function and consolidates learning and memory.
• Identify how common pathological conditions affect neural control of movement, sensation, homeostatic function and/or learning and memory.

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

As a student enrolled in this unit, you will engage in a range of online and/or face-to-face learning activities, including readings, online modules, tutorial, videos and lectures. Details can be found on the iLearn site for this unit.

Recommended Readings

There are many textbooks available that cover the topics included in this unit. Have a look around which style and delivery works best for you. As a general recommendation we will refer to Bear Connor & Paradiso - Exploring the Brain in this unit.

Technology Used

Active participation in the learning activities throughout the unit will require students to have access to a tablet, laptop or similar device. Students who do not own their own laptop computer may borrow one from the university library.

Details can be found on the MEDI2300 iLearn site.

Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
<th>Scheduled Learning Activity</th>
<th>Assessment Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Tutorial</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Organisation of the Nervous System</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Tutorial, Weekly Quiz</td>
</tr>
<tr>
<td>3</td>
<td>Cells of the Nervous System</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Tutorial, Weekly Quiz</td>
</tr>
<tr>
<td>4</td>
<td>Membrane Potential</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Tutorial, Weekly Quiz</td>
</tr>
<tr>
<td>5</td>
<td>Action Potential</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Tutorial, Weekly Quiz</td>
</tr>
<tr>
<td>6</td>
<td>Neurotransmission</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Tutorial, Weekly Quiz, Learning Resource Submission</td>
</tr>
<tr>
<td>7</td>
<td>Special Senses I</td>
<td>Online Lecture, Tutorial, Practical</td>
<td>Online Lecture, Practical, Tutorial, Weekly Quiz</td>
</tr>
<tr>
<td>8</td>
<td>Special Senses II</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Practical, Tutorial, Weekly Quiz, Learning Resource Submission</td>
</tr>
<tr>
<td>9</td>
<td>Somatosensation</td>
<td>Online Lecture, Tutorial, Practical</td>
<td>Online Lecture, Practical, Tutorial, Weekly Quiz, Learning Resource Submission</td>
</tr>
<tr>
<td>10</td>
<td>Movement</td>
<td>Online Lecture, Tutorial, Practical</td>
<td>Online Lecture, Practical, Tutorial, Weekly Quiz, Learning Resource Submission</td>
</tr>
<tr>
<td>11</td>
<td>Homeostasis</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Tutorial, Weekly Quiz</td>
</tr>
<tr>
<td>Week</td>
<td>Lecture Topic</td>
<td>Scheduled Learning Activity</td>
<td>Assessment Task</td>
</tr>
<tr>
<td>------</td>
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<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>Learning and Memory</td>
<td>Online Lecture, Tutorial</td>
<td>Online Lecture, Tutorial, Weekly Quiz, Practical Test, Learning Resource Submission</td>
</tr>
<tr>
<td>13</td>
<td>Revision</td>
<td>Online</td>
<td>Learning Resource Submission</td>
</tr>
</tbody>
</table>

**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
- Assessment Procedure
- Complaints Resolution 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

**Academic Integrity**

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing an
Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the 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

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study
- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault
- Social support including information about finances, tenancy and legal issues
- Student Advocacy provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via AskMQ, or contact Service Connect.

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.
INCLUSION AND DIVERSITY

Social inclusion at Macquarie University is about giving everyone who has the potential to benefit from higher education the opportunity to study at university, participate in campus life and flourish in their chosen field. The University has made significant moves to promote an equitable, diverse and exciting campus community for the benefit of staff and students. It is your responsibility to contribute towards the development of an inclusive culture and practice in the areas of learning and teaching, research, and service orientation and delivery. As a member of the Macquarie University community, you must not discriminate against or harass others based on their sex, gender, race, marital status, carers' responsibilities, disability, sexual orientation, age, political conviction or religious belief. All staff and students are expected to display appropriate behaviour that is conducive to a healthy learning environment for everyone.

PROFESSIONALISM

In the Faculty of Medicine, Health and Human Sciences, professionalism is a key capability embedded in all our courses.

As part of developing professionalism, students are expected to attend all small group interactive sessions including clinical, practical, laboratory, work-integrated learning (e.g., PACE placements), and team-based learning activities. Some learning activities are recorded (e.g., face-to-face lectures), however you are encouraged to avoid relying upon such material as they do not recreate the whole learning experience and technical issues can and do occur. As an adult learner, we respect your decision to choose how you engage with your learning, but we would remind you that the learning opportunities we create for you have been done so to enable your success, and that by not engaging you may impact your ability to successfully complete this unit. We equally expect that you show respect for the academic staff who have worked hard to develop meaningful activities and prioritise your learning by communicating with them in advance if you are unable to attend a small group interactive session.

Another dimension of professionalism is having respect for your peers. It is the right of every student to learn in an environment that is free of disruption and distraction. Please arrive to all learning activities on time, and if you are unavoidably detained, please join activity as quietly as possible to minimise disruption. Phones and other electronic devices that produce noise and other distractions must be turned off prior to entering class. Where your own device (e.g., laptop) is being used for class-related activities, you are asked to close down all other applications to avoid distraction to you and others. Please treat your fellow students with the utmost respect. If you are uncomfortable participating in any specific activity, please let the relevant academic know.