



ANAT2004

Neuroanatomy

Session 2, In person-scheduled-weekday, North Ryde 2026

Department of Chiropractic

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Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff

Unit Convenor

Stephanie Marhoff-Beard

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Credit points

10

Prerequisites

HLTH108 or ANAT1001 or COGS1000 or MHHS1002

Corequisites

Co-badged status

Unit description

This unit builds on the basic anatomy units. It focuses on the structure and function of the nervous system. The unit utilises an integrated approach within which relevant gross anatomy, histology and embryology, as well as clinical and applied anatomy are incorporated.

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 organisation, structure and interconnected function of the nervous system

ULO2: Utilise your knowledge of embryology to describe the orientation of the nervous system, structure of the brainstem and the relationship of dermatomes and myotomes with spinal nerves

ULO3: Trace somatic and autonomic sensory and motor pathways

ULO4: Extend your acquired knowledge of neuroanatomy to discuss, evaluate and interpret clinical case studies and published research.

ULO5: Analyse, interpret and assess relevant anatomical structures on images, photographs, bones, models, prosections, normal radiographs, MRI and CT scans.

General Assessment Information

Assessment Tasks Description

1. **Presentation:** A **strictly** two-minute lesson in the tutorial on any one small aspect of the previous week's lecture content. The intent is to TEACH the concept in your own words, simply, in any creative way to make your audience understand it. You can use PowerPoint, the whiteboard, props/models you make, music, dance, movement – anything you like to ensure the meaning is clear. Note that no pre-recordings are acceptable for this assessment. Please be sure to consult the rubric (see manual) to see how marks are allocated for this task. The presentation must fit into 2 minutes, and will be stopped at 2 minutes. Note: you will choose your presentation week in the first tutorial. Failure to present will result in a zero, unless you have applied for a special consideration
2. **Practical exam:** All identification activities conducted during the practical class are examinable, and include identifying structures on images, bones, models, prosections, radiographs, MRI and CT images. This is a written examination and will be held during your week 13 practical timeslot.
3. **Final examination:** This will cover the content of the entire semester. It tests knowledge of the theory, and the ability to connect that knowledge to real life situations (e.g., case studies). It will consist of a 2 hour written exam.

General assessment Information

Grade descriptors and other information concerning grading are contained in the [Macquarie University Assessment Policy](#).

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](#) (clause 127-8).

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 Submissions

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 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For example:

Number of days (hours) late	Total Possible Marks	Deduction	Raw mark	Final mark
1 day (1-24 hours)	100	5	75	70
2 days (24-48 hours)	100	10	75	65
3 days (48-72 hours)	100	15	75	60
7 days (144-168 hours)	100	35	75	40
>7 days (>168 hours)	100	-	75	0

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.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
<u>Presentation</u>	25%	No	Present once in semester, weeks 1-12	Individual	No	Observed
<u>Practical Exam</u>	25%	No	Week 13	Individual	No	Observed
<u>Final Written Examination</u>	50%	No	University's Official Exam Period	Individual	No	Observed

Presentation

Assessment Type ¹: Presentation task

Indicative Time on Task ²: 12 hours

Due: **Present once in semester, weeks 1-12**

Weighting: **25%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will present one short presentation in the tutorial on a chosen aspect of unit content

On successful completion you will be able to:

- Describe the organisation, structure and interconnected function of the nervous system
- Utilise your knowledge of embryology to describe the orientation of the nervous system, structure of the brainstem and the relationship of dermatomes and myotomes with spinal nerves
- Trace somatic and autonomic sensory and motor pathways
- Extend your acquired knowledge of neuroanatomy to discuss, evaluate and interpret clinical case studies and published research.

Practical Exam

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 20 hours

Due: **Week 13**

Weighting: **25%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will attend a practical exam assessing your knowledge of the nervous system by identifying structures on models, prosections, images, bones, radiographs, MRI and CT images.

On successful completion you will be able to:

- Describe the organisation, structure and interconnected function of the nervous system
- Analyse, interpret and assess relevant anatomical structures on images, photographs, bones, models, prosections, normal radiographs, MRI and CT scans.

Final Written Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 35 hours

Due: **University's Official Exam Period**

Weighting: **50%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

An exam that will cover the content of the semester.

On successful completion you will be able to:

- Describe the organisation, structure and interconnected function of the nervous system
- Utilise your knowledge of embryology to describe the orientation of the nervous system,

structure of the brainstem and the relationship of dermatomes and myotomes with spinal nerves

- Trace somatic and autonomic sensory and motor pathways
- Extend your acquired knowledge of neuroanatomy to discuss, evaluate and interpret clinical case studies and published research.
- Analyse, interpret and assess relevant anatomical structures on images, photographs, bones, models, prosections, normal radiographs, MRI and CT scans.

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
- [Academic Success](#) 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.

³ An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

Delivery and Resources

As a student enrolled in this unit, you will engage in a range of online and face-to-face learning activities, including face-to-face practicals, face-to-face tutorials, readings, and online PowerPoint and pre-recordings of lectures. Details can be found on the iLearn site for this unit. All lecture materials will be posted on iLearn. The Audiovisual recording will be available on ECHO which can be found on iLearn.

Activities will comprise:

1. 1 × 2h pre-recorded lecture and 1 × 1 hour pre-recorded lecture per week, available on ECHO, weeks 1 - 12
2. 1 × 2h laboratory practical class per week, weeks 2 - 12: Students must register for a practical slot on e-student
3. 1 × 1 hour tutorial class per week, weeks 2 - 12: Students must register for a tutorial slot on e-student

Required and recommended resources

Required:

- ANAT2004 *Laboratory Course Manual* – available as a download on iLearn

Recommended:

- Haines DE (2018) *Neuroanatomy Atlas in Clinical Context, Structures, Sections, Systems and Syndromes*. 10th ed. LWW
- Krebs C, Weinberg J and Akesson E (2012) *Lippincott's Illustrated Reviews Neuroscience* Harvey RA (series editor) Wolters Kluwer LWW
- Kiernan, JA (2009) *Barr's The Human Nervous System An Anatomical Viewpoint*. 9th ed. Wolters Kluwer/Lippincott Williams & Wilkins, PA
- Blumenfeld H (2002) *Neuroanatomy through Clinical Cases*. Sinauer Associates Inc, Massachusetts.

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.

Unit Schedule

WEEK	PRE-RECORDED LECTURE TOPIC	PRACTICAL	TUTORIAL
1 JUL 27	Overview of Nervous System Overview of Spinal Cord and Blood Supply	None	None
2 AUG 03	Ontogeny Cerebral Cortex	Spinal Cord and Blood Supply	Allocation of presentation dates Overview and Spinal Cord
3 AUG 10	Diencephalon and Internal Capsule Limbic System	Cerebral Cortex and Blood Supply	Presentations Ontogeny and Cerebral Cortex
4 AUG 17	Basal Ganglia	Diencephalon, Internal capsule, Limbic System	Presentations Diencephalon
5 AUG 24	Brainstem	Basal Ganglia	Presentations Basal ganglia
6 AUG 31	Cranial Nerves	Brainstem	Presentations Brainstem

7 SEPT 07	Special Senses	Cranial Nerves	Presentations Cranial Nerves
8 SEPT 14	Cerebellum	Mock Practical Exam	Presentations Radiology and Special Senses
Sept 21- Oct 5th MID SEMESTER BREAK			
9 OCT 06	Plexuses and peripheral Nerves	No practicals- Public Holiday	Presentations Cerebellum
10 OCT 12	Autonomic Nervous System	Special Senses	Presentations Plexuses and Peripheral Nerves
11 OCT 19	Sensory Afferent Pathways	Cerebellum, ANS, Plexuses and Peripheral Nerves	Presentations ANS
12 OCT 26	Motor Efferent Pathways	Revision	Presentations Pathways
13 NOV 2	None	Practical Exam	Presentations Pathways

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](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 \(https://students.mq.edu.au/su\)](https://students.mq.edu.au/su)

[upport/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 connect.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 and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

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

Academic Success

[Academic Success](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Ask a Study Coach](#)
- [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 the [Service Connect Portal](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit <https://students.mq.edu.au/support/technology/service-desk>.

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.

Diversity and Inclusion

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.

Changes since First Published

Date	Description
14/07/2026	Added extra info to Delivery and resources

Unit information based on version 2026.03 of the [Handbook](#)