MEDI8103

Applied Medical Science 2

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

Macquarie Medical School

Contents

General Information

Unit convenor and teaching staff
Unit Convenor
Christine Chiu
christine.chiu@mq.edu.au

MD Stage 1 Lead
Janani Mahadeva
janani.mahadeva@mqhealth.org.au

MD Course Director
Vincent Lam
vincent.lam@mq.edu.au

Credit points
20

Prerequisites
(MEDI910 or MEDI8100) and (MEDI911 or MEDI8101) and (MEDI912 or MEDI8102)

Corequisites
(MEDI914 or MEDI8104) and (MEDI915 or MEDI8105)

Co-badged status

Unit description
This is the second unit in the Applied Medical Sciences component of the Macquarie MD Course. In this unit you will develop a foundational understanding of the biomedical sciences behind the body systems. You will study how the disciplines of anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology contribute to the structure and function of normal body systems, and how these may be altered in common disease states. You will evaluate clinical case studies individually and in small groups to identify questions and learning needs and will draw upon evidence from a range of sources to articulate responses to clinical scenarios. Learning activities will include lectures, interactive practical sessions, online activities, and team based learning sessions. Through this unit you will develop the foundational medical science knowledge needed to be an effective future clinical practitioner.

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: Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology) to explain optimal health. (Capability 1: Scientist and Scholar)

ULO2: Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology) that underpin common or clinically significant disease states. (Capability 1: Scientist and Scholar)

ULO3: Explain pharmacological properties and mechanisms of standard treatments. (Capability 1: Scientist and Scholar)

ULO4: Explain scientific and clinical information effectively using the most appropriate scientific sources. (Capability 1: Scientist and Scholar)

ULO5: Demonstrate competency in formulating relevant clinical questions about diagnosis, prognosis and treatment of conditions for which people seek healthcare. (Capability 1: Scientist and Scholar)

ULO6: Explain how psychological, social and cultural issues affect the health of individuals and populations and how these might be mediated, while respecting diversity. (Capability 3: Engaged Global Citizen)

General Assessment Information

Detailed information regarding the assessment of the Macquarie MD and unit-specific assessment is available on the MQMDAssess Macquarie MD Assessment iLearn site.

Grading

In this unit the mid- and final session examinations will be numerically graded with a standardised mark out of 100. The numeric marks for the assessment examinations are weighted according to their contribution, and used to calculate the overall Unit aggregate. The viva assessment is coarse graded, with grades (P+, P, P-, F) assigned to the focused and generic MD Capability Aspects as well as overall task performance. Only the coarse grade for the overall performance of assessment tasks weighted according to their contribution will be used to calculate the overall unit aggregate.

Unit outcomes based on the unit aggregate will be reported to the University using the standard Macquarie grades (High distinction, Distinction, Credit, Pass, Fail). A single numerical grade (SNG) will be reported for each University grade. The conversion of the aggregate to SNG are available in the Macquarie MD Rules of Assessment and Progression document posted in the Policies and Guidelines section of the MDCU Doctor of Medicine Community iLearn site.

All final grades in the Macquarie MD are reviewed by the MD Course Board and Faculty Assessment Committee and ratified by the Faculty of Medicine, Health and Human Sciences

Faculty Board. Therefore, they are not the sole responsibility of the Unit Convenor. To pass this unit students must demonstrate sufficient evidence of achievement of the learning outcomes, attempt all assessment tasks, and meet any ungraded requirements which include professionalism.

Extensions for Assessment tasks

Please refer to the Special Consideration Policy if you are unable to complete the assessment on the scheduled date.

Professional Expectations

Professionalism is a key capability embedded in the Macquarie MD. Professional Behaviour Notifications (PBN) which can be a breach (PBNB) or a commendation (PBNC) may be awarded. PBNs will be recorded in the student's portfolio. As part of developing professionalism, Macquarie MD students are expected to attend all in-person sessions including clinical, practical, laboratory and team-based learning activities. If attendance is deemed to be of concern, the student will be referred to the Stage 1 Lead for remediation, subsequent monitoring, and recording in the portfolio. Similarly, as part of developing professionalism, Macquarie MD students are expected to submit all work by the due date. Late submission without prior approved extension will result in a professional behaviour notification- breach (PBNB) in the portfolio.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Mid-session examination	30%	No	Week 7	Individual	No	Observed
Integrated written examinations	40%	No	Exam Period	Individual	No	Observed
Anatomy and Pathology Viva	30%	No	Exam Period	Individual	No	Observed

Mid-session examination

Assessment Type [1]: Examination
Indicative Time on Task [2]: 30 hours
Due: **Week 7**
Weighting: **30%**
Groupwork/Individual: Individual
Short extension [3]: No
AI Approach: Observed

The mid-session examination will assess content delivered during the first half of the session. The examination will consist of multiple choice and short answer questions which will be mapped to capability aspects. Results overall and for focused capability aspects will be recorded in your Macquarie Assessment Portfolio.

On successful completion you will be able to:

- Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology) to explain optimal health. (Capability 1: Scientist and Scholar)
- Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology) that underpin common or clinically significant disease states. (Capability 1: Scientist and Scholar)
- Explain pharmacological properties and mechanisms of standard treatments. (Capability 1: Scientist and Scholar)
- Explain scientific and clinical information effectively using the most appropriate scientific sources. (Capability 1: Scientist and Scholar)
- Demonstrate competency in formulating relevant clinical questions about diagnosis, prognosis and treatment of conditions for which people seek healthcare. (Capability 1: Scientist and Scholar)
- Explain how psychological, social and cultural issues affect the health of individuals and populations and how these might be mediated, while respecting diversity. (Capability 3: Engaged Global Citizen)

Integrated written examinations

Assessment Type [1]: Examination
Indicative Time on Task [2]: 40 hours
Due: **Exam Period**
Weighting: **40%**
Groupwork/Individual: Individual
Short extension [3]: No
AI Approach: Observed

These written examinations are integrated with MEDI8104 Clinical Practice 2. The examinations will assess content delivered during the session. The MEDI8103 components include two written papers: Paper 1 multiple choice questions and Paper 2 short answer questions. Questions will be mapped to specific focused capability aspects with results for these aspects recorded in your Macquarie Assessment Portfolio.

On successful completion you will be able to:

- Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology) to explain optimal health. (Capability 1: Scientist and Scholar)
- Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell

biology, pathology, microbiology, immunology and pharmacology) that underpin common or clinically significant disease states. (Capability 1: Scientist and Scholar)
- Explain pharmacological properties and mechanisms of standard treatments. (Capability 1: Scientist and Scholar)
- Explain scientific and clinical information effectively using the most appropriate scientific sources. (Capability 1: Scientist and Scholar)
- Demonstrate competency in formulating relevant clinical questions about diagnosis, prognosis and treatment of conditions for which people seek healthcare. (Capability 1: Scientist and Scholar)
- Explain how psychological, social and cultural issues affect the health of individuals and populations and how these might be mediated, while respecting diversity. (Capability 3: Engaged Global Citizen)

Anatomy and Pathology Viva

Assessment Type [1]: Examination
Indicative Time on Task [2]: 30 hours
Due: **Exam Period**
Weighting: **30%**
Groupwork/Individual: Individual
Short extension [3]: No
AI Approach: Observed

The viva is a structured oral examination conducted one-on-one. It will take place in the wet anatomy laboratory and will use prosected specimens, pathology pots, and still images. During the assessment, you will be asked to identify key anatomical structures and respond to clinically focused questions that require you to integrate structure, function, physiology, pharmacology, health systems, and pathology, and apply this knowledge to scenarios relevant to medical practice. Your results will be mapped to specific capability aspects and recorded in your Macquarie Assessment Portfolio.

On successful completion you will be able to:

- Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology) to explain optimal health. (Capability 1: Scientist and Scholar)
- Apply knowledge of the biomedical sciences (anatomy, physiology, biochemistry, cell biology, pathology, microbiology, immunology and pharmacology) that underpin common or clinically significant disease states. (Capability 1: Scientist and Scholar)
- Explain pharmacological properties and mechanisms of standard treatments. (Capability 1: Scientist and Scholar)

- Explain scientific and clinical information effectively using the most appropriate scientific sources. (Capability 1: Scientist and Scholar)
- Explain how psychological, social and cultural issues affect the health of individuals and populations and how these might be mediated, while respecting diversity. (Capability 3: Engaged Global Citizen)

---

[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

Assumed knowledge

This unit assumes that you have a comprehensive knowledge of *human anatomy and human physiology*.

Teaching and Learning Strategy

This unit includes ~6 hours of lectures, a 2 hour practical session, and a 2 hour clinical colloquium each week.

- Lectures will cover topics and concepts that encompass the biomedical sciences. Academic researchers and clinical specialists will deliver lectures via pre-recorded videos.
- Practical classes are held on-campus and will apply practical and/or conceptual elements.
- The Clinical Colloquium integrates learning from across all units in Year 1 to consolidate and apply both practical and conceptual elements. Online activities and resources will be available prior to the colloquium session. It is expected that students engage with the online resources to assist in their participation in the team based learning that will occur during the colloquium session.

iLearn

The unit iLearn site will provide weekly resources, including:

- lecture notes and recordings
- practical lesson pre-reading and worksheets
- preparation and consolidation learning material
- assessment details

Textbooks

The following texts are *recommended*. Copies are available online through the library and/or held in library reserve.

Available as hard copies in MQ Library reserve

- Anatomy: Moore et al. Clinically Oriented Anatomy

Available electronically via MQ Library - ClinicalKey Student

- Ralston et al. Davidson's Principles and Practice of Medicine
- Guyton & Hall. Textbook of Medical Physiology
- Kierszenbaum A.L. Histology and Cell Biology: An Introduction to Pathology.
- Rang et al. Rang and Dale's Pharmacology.
- Goering et al. Mims' Medical Microbiology and Immunology.
- Baynes & Dominiczak. Medical Biochemistry.
- Kumar et al. Robbins and Cotran Pathologic Basis of Disease.
- Moore et al. The developing human: clinically oriented embryology.

Technology and equipment

MQ is a BYOD environment. Students are encouraged to bring their personally owned devices (laptops, tablets, etc.) to class and to use these devices to access information and study. To study optimally when off campus you will need to have access to a reliable internet connection to retrieve unit information and engage with online resources.

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 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.

Changes from Previous Offering

Introduction of the Viva assessment (30%) and subsequent change in the weighting of the midsession exam and integrated exam.

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, and team-based learning activities. Some learning activities are recorded, 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.

Unit information based on version 2026.03 of the Handbook