



MEDI2005

Human Health and Disease Processes

Session 1, In person-scheduled-weekday, North Ryde 2024

Macquarie Medical School

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General Information

Unit convenor and teaching staff

Unit Convenor

Esther Lim

esther.lim@mq.edu.au

Contact via email

Consultation by appointment

Course Director

Marina Junqueira Santiago

marina.junqueirasantiago@mq.edu.au

Contact via email

Consultation by appointment

Credit points

10

Prerequisites

(50cp at 1000 level or above) and admission to BClinSc

Corequisites

Co-badged status

Unit description

This unit integrates fundamental knowledge of human biological processes to human health and diseases. This unit focuses on key concepts in immunology, microbiology and oncology to further develop your understanding of major human diseases. In this unit, you will learn about fundamental changes in body physiology due to injury and disease, including local and systemic responses, and molecular and cellular adaptations. You will investigate disease aetiology, pathogenesis and processes at the cellular, tissue and body system levels and approach disease from a personal, community and global perspective. You will engage in discussions of disease incidence, prevalence and control, using recent local and global health examples. Learning activities will include lectures, self-directed online learning tasks, lab-based practical, and interactive tutorials and presentations. Through this unit you will gain an understanding of health and disease processes that will be critical for a profession in medicine, public health or biomedical research.

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: Identify systemic and local responses of the body to tissue injury and infection.

ULO2: Apply knowledge of human defense mechanisms including physical barriers and the immune system to identify normal and altered immunologic responses.

ULO3: Evaluate the dynamic relationship between microorganisms and humans, and methods of microbial identification and control.

ULO4: Describe common biological and genetic mechanisms of neoplastic transformation and development.

ULO5: Assess and utilize clinical case scenarios and the latest scientific research to describe, critically analyse and communicate basic concepts of diseases learned in this unit.

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 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 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
Poster Presentation	20%	No	Week 8
Practical Test	20%	No	Week 12
Final Exam	50%	No	Exam timetable
Online Quiz	10%	No	Week 4 and Week 7

Poster Presentation

Assessment Type ¹: Presentation

Indicative Time on Task ²: 20 hours

Due: **Week 8**

Weighting: **20%**

Design and presentation of a scientific poster based on group research of an assigned topic

On successful completion you will be able to:

- Apply knowledge of human defense mechanisms including physical barriers and the immune system to identify normal and altered immunologic responses.
- Evaluate the dynamic relationship between microorganisms and humans, and methods of microbial identification and control.
- Describe common biological and genetic mechanisms of neoplastic transformation and development.

Practical Test

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **Week 12**

Weighting: **20%**

In-class written test assessing learning undertaken in lab-based practical session

On successful completion you will be able to:

- Identify systemic and local responses of the body to tissue injury and infection.
- Apply knowledge of human defense mechanisms including physical barriers and the immune system to identify normal and altered immunologic responses.
- Evaluate the dynamic relationship between microorganisms and humans, and methods of microbial identification and control.
- Assess and utilize clinical case scenarios and the latest scientific research to describe, critically analyse and communicate basic concepts of diseases learned in this unit.

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 20 hours

Due: **Exam timetable**

Weighting: **50%**

Formal written exam using a combination of question types assessing content delivered across the session. This task is completed under examination conditions during the University examination period.

On successful completion you will be able to:

- Identify systemic and local responses of the body to tissue injury and infection.
- Apply knowledge of human defense mechanisms including physical barriers and the immune system to identify normal and altered immunologic responses.
- Evaluate the dynamic relationship between microorganisms and humans, and methods of microbial identification and control.
- Describe common biological and genetic mechanisms of neoplastic transformation and development.
- Assess and utilize clinical case scenarios and the latest scientific research to describe, critically analyse and communicate basic concepts of diseases learned in this unit.

Online Quiz

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 8 hours

Due: **Week 4 and Week 7**

Weighting: **10%**

A series of two online quizzes assessing lecture and tutorial content.

On successful completion you will be able to:

- Identify systemic and local responses of the body to tissue injury and infection.
- Apply knowledge of human defense mechanisms including physical barriers and the immune system to identify normal and altered immunologic responses.
- Evaluate the dynamic relationship between microorganisms and humans, and methods of microbial identification and control.
- Describe common biological and genetic mechanisms of neoplastic transformation and development.

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 face to online and face-to-face learning activities, including pre-recorded lectures, online modules, and in-class tutorials. Details can be found on the iLearn site for this unit.

Recommended Readings

Pathophysiology: The Biologic Basis for Disease in Adult and Children, Kathryn L. McCance, Sue E. Huether, Valentina L. Brashers, Neal S. Rote, 8th Edition (2019), Elsevier

Mims' Medical Microbiology and Immunology, Richard V. Goering, Hazel M. Dockrell, Mark Zuckerman, Peter L. Chiodini, 6th Edition (2019), Elsevier

Please note that these books and the prescribed readings for each week are recommended to complement your understanding of the lecture content. The prescribed readings are not compulsory and will not be assessed unless covered in the lectures.

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

	Topic/Theme	Learning Activities
Week 1	Introduction to unit	Online practical: Language of Pathology and Introduction to Medical Terminology
Week 2	Basic bacteriology	Lab practical: Isolation and identification of bacteria
Week 3	Basic virology	Follow-up lab practical: Assessment of bacteria plates
Week 4	Introduction to Immunology	Tutorial Online practical: Lymphatic system
Week 5	Inflammation and innate immunity	Tutorial Online practical: ELISA
Week 6	Humoral and cellular responses	Tutorial Online practical: Immunity and vaccination
Week 7	Alterations in immunity and inflammation	Tutorial
Week 8	No lecture	Poster presentation
Week 9	Basic haematology	Tutorial Online practical: Interpreting blood test
Week 10	Cancer biology and Hallmarks	Tutorial
Week 11	Cancer microenvironments and treatments	Tutorial Online practical: Histological features of cancer
Week 12	Cancer Epidemiology	Tutorial
Week 13	Revision	

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 \(https://students.mq.edu.au/support/study/policies\)](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 \(https://policies.mq.edu.au\)](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 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/>

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 the 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 2024.01R of the [Handbook](#)