



# BIOL2220

## Systems Physiology

Session 2, In person-scheduled-weekday, North Ryde 2023

*School of Natural Sciences*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Emily Don

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Credit points

10

Prerequisites

30cp from ANAT1001 or ANAT1002 or BIOL1110 or BIOL1210 or BIOL1320 or BIOL2230 or CHEM1001

Corequisites

Co-badged status

Unit description

This unit is for anyone interested in human physiology, and how humans maintain homeostasis whilst interacting with the outside world. The human body is capable of surviving in a dazzling variety of changing environmental conditions. It can live in jungles, mountains, crowded cities, or deserts. It can withstand the heat of a summer in Far North Queensland or the cold of a Tasmanian winter. In this unit, you will learn how systems physiology allows the human body to achieve homeostasis (a normal internal environment) in a constantly changing world. We will investigate the physiology of the cardiovascular, respiratory, alimentary, endocrine, immune, integumentary, muscular, skeletal, nervous, reproductive and renal systems. Practical classes involve measuring physiological parameters such as blood pressure and electrical conduction through the heart in humans as well as exploring how digestive enzymes work. The unit content is designed that students with a background in human biology will not be disadvantaged, however students with a background in anatomy, medical chemistry and biomolecular science are encouraged to enroll.

## 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:** Explain how the physiological systems of the human body contribute to the maintenance of homeostasis

**ULO2:** Relate specific structural features of organs to essential system functions

**ULO3:** Interpret physiological processes using equations of physical, chemical, and electrical properties

**ULO4:** Analyse data, and synthesise and communicate the implications of experimental results

**ULO5:** Perform experiments safely with human subjects and accurately collect, store and present data

**ULO6:** Identify situations in which organ systems interact to produce a co-ordinated response

## General Assessment Information

To pass this unit you must:

- Attempt all assessments, and
- Achieve a total mark equal to or greater than 50%

### Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7<sup>th</sup> day (including weekends). After the 7<sup>th</sup> day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is **11:55 pm**. A 1-hour grace period will be provided to students who experience a technical concern. For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for [Special Consideration](#).

### Assessments where Late Submissions will be accepted

Assessments 1 and 2: Database Project and Practical Class Assessments – YES, Standard Late Penalty applies

Assessments 3 and 4: Mid-Session Test and Final Exam - NO, unless Special Consideration is Granted

### Special Consideration

The [Special Consideration Policy](#) aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through [ask.mq.edu.au](https://ask.mq.edu.au).

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Database project</a>	10%	No	Weeks 2, 6 and 9
<a href="#">Practical class assignments</a>	30%	No	Throughout session
<a href="#">Mid-session test</a>	25%	No	Week 7
<a href="#">Final Exam</a>	35%	No	Exam period

### Database project

Assessment Type **1**: Report

Indicative Time on Task **2**: 13 hours

Due: **Weeks 2, 6 and 9**

Weighting: **10%**

The PeerWise database will be available to students throughout the Session. Students must write and submit questions based upon lecture, practical and tutorial content, and answer questions of other students.

On successful completion you will be able to:

- Explain how the physiological systems of the human body contribute to the maintenance of homeostasis
- Relate specific structural features of organs to essential system functions
- Interpret physiological processes using equations of physical, chemical, and electrical properties
- Analyse data, and synthesise and communicate the implications of experimental results

### Practical class assignments

Assessment Type **1**: Lab report

Indicative Time on Task **2**: 20 hours

Due: **Throughout session**

Weighting: **30%**

There are three assignments based on practical classes. Each will require a pre-practical quiz to be taken at the start of class and then a post-practical lab report are to be completed in the week

following the practical, and submitted to Turnitin.

On successful completion you will be able to:

- Explain how the physiological systems of the human body contribute to the maintenance of homeostasis
- Interpret physiological processes using equations of physical, chemical, and electrical properties
- Analyse data, and synthesise and communicate the implications of experimental results
- Perform experiments safely with human subjects and accurately collect, store and present data
- Identify situations in which organ systems interact to produce a co-ordinated response

## Mid-session test

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 7**

Weighting: **25%**

a mid-session test will be undertaken online before the mid-session break.

On successful completion you will be able to:

- Explain how the physiological systems of the human body contribute to the maintenance of homeostasis
- Relate specific structural features of organs to essential system functions
- Interpret physiological processes using equations of physical, chemical, and electrical properties
- Identify situations in which organ systems interact to produce a co-ordinated response

## Final Exam

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **Exam period**

Weighting: **35%**

The final exam will be held in the formal examination period, and will be based on all lecture and

practical material.

On successful completion you will be able to:

- Explain how the physiological systems of the human body contribute to the maintenance of homeostasis
- Relate specific structural features of organs to essential system functions
- Interpret physiological processes using equations of physical, chemical, and electrical properties
- Analyse data, and synthesise and communicate the implications of experimental results
- Identify situations in which organ systems interact to produce a co-ordinated response

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<sup>1</sup> 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.

<sup>2</sup> 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

### Week 1 Classes

Will be online only. Pre-recorded lectures will be posted during the week. Make sure to complete the online workbook in your own time.

### Methods of Communication

We will communicate with you via your university email and through announcements on iLearn. Queries to convenors can either be placed on the iLearn private message to convenor board.

**COVID Information** For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: <https://www.mq.edu.au/about/coronavirus-faqs>. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

## 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](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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/](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.

## Changes from Previous Offering

### Changes to Unit from previous offerings

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link in the iLearn page. Recent, student feedback from the previous offering of this unit was positive overall, however we are continuing to make changes such as introducing workshop classes outside of the laboratory and



including more intermediate level content. We believe that this will make the unit more approachable for students.