# BIOL2220

## Systems Physiology

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

*School of Natural Sciences*

## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
<td>2</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>2</td>
</tr>
<tr>
<td>General Assessment Information</td>
<td>3</td>
</tr>
<tr>
<td>Assessment Tasks</td>
<td>4</td>
</tr>
<tr>
<td>Delivery and Resources</td>
<td>6</td>
</tr>
<tr>
<td>Policies and Procedures</td>
<td>6</td>
</tr>
<tr>
<td>Changes from Previous Offering</td>
<td>8</td>
</tr>
</tbody>
</table>

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General Information

Unit convenor and teaching staff
Emily Don
emily.don@mq.edu.au

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 7th day (including weekends). After the 7th 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.
Assessment Tasks

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database project</td>
<td>10%</td>
<td>No</td>
<td>Weeks 2, 6 and 9</td>
</tr>
<tr>
<td>Practical class assignments</td>
<td>30%</td>
<td>No</td>
<td>Throughout session</td>
</tr>
<tr>
<td>Mid-session test</td>
<td>25%</td>
<td>No</td>
<td>Week 7</td>
</tr>
<tr>
<td>Final Exam</td>
<td>35%</td>
<td>No</td>
<td>Exam period</td>
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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
- Analyze data, and synthesize 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
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 1: Quiz/Test
Indicative Time on Task 2: 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 1: Examination
Indicative Time on Task 2: 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

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

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). 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 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.
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.

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.