



BIOX2210

Life Processes

Session 2, In person-scheduled-infrequent, North Ryde 2024

School of Natural Sciences

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General Information

Unit convenor and teaching staff

Simon Griffith

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Credit points

10

Prerequisites

(40cp at 1000 level or above) including (BIOL1310 or BIOL114) or (BIOL1110 or BIOL115)

Corequisites

Co-badged status

Unit description

This unit will compare and contrast a range of physiological processes in microbes, plants and animals. It will highlight common features and their evolutionary origins, with particular reference to prokaryotic genes which have been conserved in multicellular organisms. Topics to be explored include metabolism (e.g. respiration, photosynthesis and transport), environmental responses (e.g. abiotic stress response, immune reactions, behaviour), and phenology (e.g. sexual maturation, fertilisation, life cycles). The unit will draw the common threads of evolution together in complex multicellular organisms, as well as contrasting those processes unique to each Kingdom, such as photosynthesis and locomotion.

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 co-ordination of physiological processes in organisms, including transport systems and responses to stimuli

ULO2: Apply detailed knowledge to explain the processes by which organisms gain energy, grow, and develop

ULO3: Compare and contrast physiological processes, and their evolution, in microbes, plants, and animals

ULO4: Demonstrate critical thinking and writing skills to appraise scientific literature on a

major physiological theme

ULO5: Analyse and interpret complex experimental data and critically evaluate these data in the context of physiological phenomena

ULO6: Apply broad and coherent knowledge of physiology to understand how organisms adapt to environmental challenges

General Assessment Information

Requirements to Pass this Unit

Students should participate in all learning activities and should attempt all assessments. To pass this unit students must achieve a total mark equal to or greater than 50%

Late Assessment Submission and Penalties

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

- Major Written Assignment – YES, Standard Late Penalty applies

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.

Written Assessments: If you experience circumstances or events that affect your ability to complete the written assessments in this unit on time, please inform the convenor and submit a Special Consideration request through ask.mq.edu.au.

Weekly practice-based tasks: Practical work constitutes a large proportion of the unit.

Attendance at practical sessions is expected, is necessary to learn the material that will be assessed and to allow for successful completion of the unit.

Note that a Special Consideration should **only be applied for** if you miss more than two of the weekly practical classes.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Practical Quizzes</u>	20%	No	In time-tabled practical classes (mid semester break)
<u>Written Assignment</u>	20%	No	Part 1: 12th Sept; Part 2: 31st Oct
<u>Final Examination</u>	40%	No	Exam period
<u>Weekly Quizzes</u>	20%	No	Weekly

Practical Quizzes

Assessment Type ¹: Qualitative analysis task

Indicative Time on Task ²: 0 hours

Due: **In time-tabled practical classes (mid semester break)**

Weighting: **20%**

Students will be marked on the acquisition of data and practical outcomes (such as micrographs, and statistical outcomes) during practical classes.

On successful completion you will be able to:

- Describe the co-ordination of physiological processes in organisms, including transport systems and responses to stimuli
- Apply detailed knowledge to explain the processes by which organisms gain energy, grow, and develop
- Demonstrate critical thinking and writing skills to appraise scientific literature on a major physiological theme

Written Assignment

Assessment Type ¹: Report

Indicative Time on Task ²: 30 hours

Due: **Part 1: 12th Sept; Part 2: 31st Oct**

Weighting: **20%**

A critical analysis of two recent publications on one of a set of topics chosen by the student.

The assignment will be split into two submissions. One completed early in the session, and a second identical assessment presented later in the session. This will provide an opportunity for students to get feedback on the first attempt and implement that for the second.

On successful completion you will be able to:

- Demonstrate critical thinking and writing skills to appraise scientific literature on a major physiological theme
- Analyse and interpret complex experimental data and critically evaluate these data in the context of physiological phenomena
- Apply broad and coherent knowledge of physiology to understand how organisms adapt to environmental challenges

Final Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 20 hours

Due: **Exam period**

Weighting: **40%**

An analytical set of short-answer questions assembled in graded order of difficulty designed to test understanding rather than factual recall

On successful completion you will be able to:

- Describe the co-ordination of physiological processes in organisms, including transport systems and responses to stimuli
- Apply detailed knowledge to explain the processes by which organisms gain energy, grow, and develop
- Compare and contrast physiological processes, and their evolution, in microbes, plants,

and animals

- Analyse and interpret complex experimental data and critically evaluate these data in the context of physiological phenomena
- Apply broad and coherent knowledge of physiology to understand how organisms adapt to environmental challenges

Weekly Quizzes

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 12 hours

Due: **Weekly**

Weighting: **20%**

Students complete a set of lecture-specific questions embedded in each lecture with answers registered in iLearn

On successful completion you will be able to:

- Describe the co-ordination of physiological processes in organisms, including transport systems and responses to stimuli
- Apply detailed knowledge to explain the processes by which organisms gain energy, grow, and develop
- Compare and contrast physiological processes, and their evolution, in microbes, plants, and animals

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

Lectures will be posted weekly on ilearn and will remain available for the rest of the session.

Practical classes will be held in laboratories and as time-tabled. There is no online equivalent.

Unit Schedule

Practical classes will be held weekly (from Week 2) for students taking frequent attendance mode and in a block in the mid-semester break for those students taking infrequent attendance mode. Details of each practical will be posted a week earlier on ilearn and reading for each practical class is required and assessed via an ilearn quiz which will close before the time-tabled day of the class.

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 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/>

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 the [Service Connect Portal](#), 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

This year, we have split the written assignment into two parts with the first part assessed by mid semester to enable students to receive feedback and implement that feedback into the second part is submitted later in the session.

The practical class assessment will also be slightly different, with the test of practical classes partly conducted before the class to assess the preparatory reading, and the second test conducted during the class to enable a better test of practical skills.

Unit information based on version 2024.02 of the [Handbook](#)