



BIOL1110

Genes to Organisms

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

School of Natural Sciences

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General Information

Unit convenor and teaching staff

Unit Convener

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Unit Administration

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Unit description

This unit deals with the nuts and bolts of life on earth. Throughout the unit there is a single unifying theme - that all of the processes that give rise to life are derived from DNA. We show students that DNA controls life by acting as a blueprint for the construction of proteins, and that those proteins build cells which act as the basic structural and functional units of all life. To demonstrate these processes to students, we start by talking about the structure and function of DNA to show how it can act as a simple code for the construction of proteins. Students are then shown how proteins are constructed from the DNA code, and how those proteins can be used to build and maintain cells. Having established these basic principles, the unit then goes on to explain how cells construct multicellular organisms during development, and how the proper functioning of those organisms is maintained by regulating cellular activity. We also demonstrate that the DNA code is essentially immortal because it can be copied from generation to generation, from cell to cell.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Good Health and Well Being; Quality Education; Life on Land

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: Define how biological information is encoded in the structure of the genetic molecule, DNA

ULO2: Describe how large macromolecules, such as nucleic acids and proteins are constructed from simpler building blocks

ULO3: Explain how eukaryotic cells are constructed, in terms of the structure and functions of organelles

ULO4: Describe how genetic information is transmitted through the generations, and the evolutionary process

ULO5: Discuss modern applications of genetics and genomics

ULO6: Analyse scientific data and use the basic elements of scientific writing to write reports

General Assessment Information

Requirements to pass the unit

To pass this unit you must achieve a total mark equal to or greater than 50%. This unit has no hurdle assessments.

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.

Use of Generative AI

Paper Dissection – YES, this assessment is open. In this assessment you may use generative AI to provide feedback on your writing (e.g., to check grammar), but all writing should be your own. Specific questions of this assignment require the use of AI.

Practical Problem Set – NO, this assessment is observed. This assessment is completed in a supervised environment and the use of AI is not permitted.

Assessments where Late Submissions will be accepted:

Paper Dissection – YES, Standard Late Penalty applies

Practical Problem Set – 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 <https://connect.mq.edu.au>.

Week 1 classes

Lectures will start in Week 1 (see Unit Schedule on iLearn for more details). There are no practical classes in Week 1. Practical classes will commence from Week 2 onwards (see unit schedule table under the "Unit Information" heading on iLearn).

Changes to the unit from last offering

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.

Student feedback from the previous offering of this unit was very positive overall, with students pleased with the clarity around assessment requirements and the level of support from teaching staff. As such, no change to the delivery of the unit is planned, however we will continue to strive to improve the level of support and the level of student engagement.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Final Exam	45%	No	Formal exam period (exact date TBA)	Individual	No	Observed
Paper dissection	25%	No	09/10/2026	Individual	Yes	Open
Practical problem set	30%	No	18/09/2026	Individual	Yes	Open

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 40 hours

Due: **Formal exam period (exact date TBA)**

Weighting: **45%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will undertake a final examination during the formal examination period.

On successful completion you will be able to:

- Define how biological information is encoded in the structure of the genetic molecule, DNA
- Describe how large macromolecules, such as nucleic acids and proteins are constructed from simpler building blocks
- Explain how eukaryotic cells are constructed, in terms of the structure and functions of organelles
- Describe how genetic information is transmitted through the generations, and the evolutionary process
- Discuss modern applications of genetics and genomics

Paper dissection

Assessment Type ¹: Written Submission

Indicative Time on Task ²: 25 hours

Due: **09/10/2026**

Weighting: **25%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

A library of at least 10 public research papers will be made available to students. Students must select one paper (or choose a paper in which they are interested, with the approval of the convenors) and analyse the structure, underlying research, and implications of the paper, following the set of questions provided.

On successful completion you will be able to:

- Discuss modern applications of genetics and genomics
- Analyse scientific data and use the basic elements of scientific writing to write reports

Practical problem set

Assessment Type ¹: Problem-based task

Indicative Time on Task ²: 36 hours

Due: **18/09/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

The practical problem set will consist of multiple choice questions covering practical material discussed to that point.

On successful completion you will be able to:

- Define how biological information is encoded in the structure of the genetic molecule, DNA
- Describe how large macromolecules, such as nucleic acids and proteins are constructed from simpler building blocks

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

Lectures

(1) Two 1-hour online lecture recordings per week (starting in week 1). Recordings will be guided online learning H5P modules. The class timetable for this unit can be found through the Timetable portal and on iLearn. The Monday lecture slots will be used for Zoom Q&A and discussion sessions (consult unit iLearn page for further details).

Practicals

There are nine practicals in this unit (see unit schedule table under the "Unit Information" heading on iLearn). All practicals will be delivered in face-to-face mode. To check the availability

of practicals for your unit, please go to timetable viewer, before enrolling in eStudent. To check detailed information on unit assessments, visit the unit iLearn site.

How to find the answers:

1. Read the unit outline
2. Using the Virtual Peer chatbot
3. Consult iLearn (often most questions have already been asked)
4. All questions on lecture content should be posted on the iLearn forum. We will be monitoring the iLearn forum and ensuring all questions are correctly answered. If the answer to any course related question will benefit many students, please post it on iLearn.
5. Only email biol1110@mq.edu.au if you have any questions about: a) organising alternative times for assessments or extensions, b) withdrawal from the unit, c) personal issues affecting your study, d) practical class allocations and e) mark queries
6. Please only approach teaching staff with questions during practical sessions
7. Please only approach Lab technicians during practical classes and only with technical questions
8. Unexpected adjustments made during the course will be announced via iLearn announcements so make sure you check iLearn regularly.

iLearn

The primary means of communication for this unit is via iLearn and email (biol1110@mq.edu.au).

iLearn is a web-based computer-mediated communication package and can be accessed by most web browsers from inside or outside the University.

We expect you to use iLearn for:

- 1) Regularly checking subject announcements (at least twice per week)
- 2) Discussing the unit and its content with staff and other students
- 3) Downloading Lecture and Practical materials
- 4) Downloading reference materials

Logging in to iLearn

The URL for the iLearn login page is: <https://ilearn.mq.edu.au/>. You will need to log in to iLearn each time you use it. Your username is your student number. If you are having trouble accessing your online unit due to a disability or health condition, please visit the

Student Services Website

<https://students.mq.edu.au/support/personal> or information on how to get assistance. If you are having problems logging on after ensuring you have entered your username and password correctly, you should contact Student IT Help, http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

Textbook

CAMPBELL BIOLOGY 11th EDITION (ANZ) This textbook is available in hard copy from the Coop Bookshop (ISBN 9781488626241) or electronically via Leganto on the unit's iLearn page. Please note that earlier editions (e.g., 10th Edition) of this textbook can be used as reference source for this unit.

Unit Schedule

The schedule for this unit is available on iLearn under the "Unit information" heading.

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/>

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.

Unit information based on version 2026.02 of the [Handbook](#)