



BIOX2430

Plants

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

School of Natural Sciences

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General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

BIOX1310 and BIOX1110

Corequisites

Co-badged status

BIOL2430

Unit description

The fascinating world of plants consists of incredible diversity in species and vital ecosystem functions that enable our planet to function. Through a combination of workshops, laboratory sessions, and fieldwork, this unit explores the classification, diversification, evolution, and adaptations of plants across different habitats and ecosystems. By delving into plant anatomy, physiology, and reproductive strategies, students will gain a deep understanding of how plants acquire and utilise resources, interact with their environment, and contribute to ecosystem functioning. This unit provides a comprehensive understanding of the intricate relationships between plants in various ecosystems, and their role in nutrient cycling and ecosystem processes. Skills gained in plant experimentation can be applied to careers in ecology, environmental science, and biotechnology.

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

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 the principles of the evolutionary trajectory of plants and the key events and adaptive breakthroughs that shaped their diversity, their classification and taxonomy

ULO2: Assess the key physiological processes that plants use to thrive in various environments

ULO3: Identify interactions between plants, animals, fungi and microorganisms in ecosystems, including mutualistic, commensal and pathogenic relationships

ULO4: Analyse the cultural, ethical and legal considerations related to the use of plant resources

ULO5: Propose innovative solutions to current challenges associated with plant conservation and sustainable land management and effectively communicate scientific information to diverse audiences

ULO6: Apply hands-on laboratory, plant identification and field techniques for studying plants and their functions

General Assessment Information

Requirements to pass the unit

To pass this unit you should **attempt all assessments** and must achieve a total aggregate mark **equal to or greater than 50%**.

Assessment for this unit consists of a portfolio based on workshops, a major written report, and a final exam based on material covered in the lectures delivered as flipped content activities, workshops and fieldwork sessions. Submission of all assessments and completion of exam is essential for adequate progress, since all assessment tasks are required to master the content of this unit.

Students are expected to participate in the workshops which will be on-campus, and in the on-campus fieldwork session (please note these sessions will be held on the weekend). It will be essential to engage with the interactive online material in preparation for workshops.

All assessments will be graded with the assessment criteria being provided on iLearn. We will make marks available within three weeks of the assessment submission date. Feedback on the written assignment will be provided when the marks are released. Marks will be available on Gradebook in iLearn.

Portfolio based on practical workshops (30%)

The practical workshops will run as infrequent session during the semester break. In-person participation for these is expected. The portfolio assessment consists of ten tasks which are corresponding to each of the workshop topics to hand in via iLearn. You will receive formative feedback on your respective task during the workshops with the final **Portfolio being due in Week 11**. These tasks are designed to test your practical skills and knowledge of topics covered in these workshops, which are aligned with the themes covered in the online lecture material.

More information on these assessments will be provided as the semester progresses.

Major Written Report (30%)

Students will submit a major written report related to fieldwork carried out during the on-campus sessions through Turnitin on iLearn. The report will be due in **Week 10**, and will require that students analyse, visualize and interpret data collected during the on-campus sessions, placing this information into the context of vegetation monitoring and management for ecosystem services. Please use the Major Report Guidelines to check your assignment before electronic submission.

More information on this assessment will be provided as the semester progresses.

Final examination (40%)

The final exam will be held in the official university examination period at the end of the session. On-campus attendance for the invigilated exam will be required. The exam will consist of short-, and extended-answer questions.

Plagiarism The assignment is your own work – no passages have been copied verbatim from reference sources or from other students. Students are required to write reports via the plagiarism detection software Turnitin. This can be accessed on the unit's iLearn website. Your assessment task will be automatically compared to work of your classmates, previous students from Macquarie and other universities, and with material available on the Internet. Any evidence of plagiarism will be dealt with following University policy. Please also check the Macquarie advice on using [generative AI](#). The penalties imposed by the University for plagiarism are serious and may include loss of marks, referral to a Faculty Disciplinary Committee, or even expulsion from the University.

Moderation of assessments This unit and its assessments are moderated according to departmental and university requirements. For example, where assessments are marked by multiple people, all agree on the marking process and marks are compared to ensure consistency.

Late assessment submission penalty

Students enrolled in Session-based units with written assessments will have the following university standard late penalty applied. Please see <https://students.mq.edu.au/study/assessments-exams/assessments> for more information.

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 11:55 pm. A 1-hour grace period is 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, students need to submit an application for [Special Consideration](#).

In this unit, late submissions will be accepted as follows:

- Assessment Portfolio – YES, Standard Late Penalty applies
- Assessment Major Written Report – YES, Standard Late Penalty applies
- Assessment Final Exam – NO, unless Special Consideration is Granted

Special considerations

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>.

Short extensions

For some assessment types, students are allowed to request an extra 3 calendar days to complete eligible assessments. No reason or evidence is required. This only applies to individual assessments with the Short Extension flag in CMS marked as 'yes'. Please ensure that the unit guide specifies whether short extensions apply to any of the assessments in your unit.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Major Written Report	30%	No	17/10/2026	Individual	Yes	Open
Lab portfolio	30%	No	24/10/2026	Individual	Yes	Open
Final Exam	40%	No	Exam Period	Individual	No	Observed

Major Written Report

Assessment Type ¹: Written Submission

Indicative Time on Task ²: 20 hours

Due: **17/10/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

Report based on practical work and measured data

On successful completion you will be able to:

- Explain the principles of the evolutionary trajectory of plants and the key events and adaptive breakthroughs that shaped their diversity, their classification and taxonomy
- Assess the key physiological processes that plants use to thrive in various environments
- Apply hands-on laboratory, plant identification and field techniques for studying plants and their functions

Lab portfolio

Assessment Type ¹: Portfolio

Indicative Time on Task ²: 30 hours

Due: **24/10/2026**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

Lab portfolio based on tasks in workshops

On successful completion you will be able to:

- Explain the principles of the evolutionary trajectory of plants and the key events and adaptive breakthroughs that shaped their diversity, their classification and taxonomy
- Assess the key physiological processes that plants use to thrive in various environments
- Identify interactions between plants, animals, fungi and microorganisms in ecosystems, including mutualistic, commensal and pathogenic relationships
- Analyse the cultural, ethical and legal considerations related to the use of plant resources
- Propose innovative solutions to current challenges associated with plant conservation and sustainable land management and effectively communicate scientific information to diverse audiences
- Apply hands-on laboratory, plant identification and field techniques for studying plants and their functions

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 25 hours

Due: **Exam Period**

Weighting: **40%**

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:

- Explain the principles of the evolutionary trajectory of plants and the key events and adaptive breakthroughs that shaped their diversity, their classification and taxonomy
- Assess the key physiological processes that plants use to thrive in various environments
- Identify interactions between plants, animals, fungi and microorganisms in ecosystems, including mutualistic, commensal and pathogenic relationships
- Analyse the cultural, ethical and legal considerations related to the use of plant resources

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

Week 1 classes

Lecture material as flipped content activities will be available from Week 1. The in-person infrequent workshops are scheduled 29 September - 02 October on campus.

Methods of communications

We will communicate with you via your university email and through announcements on iLearn. Queries to convenors can be sent to the unit convenor via the contact email on iLearn. General queries can be placed on the iLearn discussion board, which will be monitored by the unit convenor.

Requirements for workshops

The work carried out during practical classes is an important and integral part of the course. You must read and either download the practical notes on a laptop or tablet or print them to bring to

each class. Laptops are also available for short-term use during the practical class.

Laboratory requirements

- **Enclosed shoes (you cannot be present in the lab or field without these)**
- Notebook and pencils/pens for notes and diagrams
- Laptop, if you have one, with Excel and Word (or open source equivalents)
- No food or drink in University laboratories

Field requirements

- Appropriate clothing (walking shoes or boots, rain jacket, sun protection, trousers and long-sleeved shirt)
- Water bottle and lunch/snacks
- Small backpack to carry your equipment
- First aid kits will be supplied

NOTE: Ticks and leeches can occasionally be present at the fieldwork site. Neither carries disease, but they are certainly a nuisance. To minimize chances of problems you need to wear suitable clothing (as described above). We suggest tucking your pants into your socks, shirts into pants, etc, and liberally applying insect repellent to your shoes, clothes and exposed skin.

Recommended reading

There is no set textbook for this subject. Recommended books (all available from the library as eBooks or hardcopies) that cover many of the topics dealt with include:

- Evert & Eichhorn (2017). *Raven Biology of Plants. 8th Edition*
- Taiz et al (2022). *Plant Physiology and Development. 7th Edition*
- Gurevitch J et al (2021). *The Ecology of Plants. 3rd Edition*
- Attiwill PM & Wilson B (Eds) (2006). *Ecology: An Australian Perspective.*
- Willis KJ & McElwain JC (2014). *The Evolution of Plants. 2nd Edition*
- Schulze et al (2019). *Plant Ecology 2nd Edition*
- Lambers H et al (2019). *Plant Physiological Ecology. 3rd Edition*
- Chapin FS et al (2011). *Principles of Terrestrial Ecosystem Ecology. 2nd Edition*

Most lectures will include a list of key readings (journal articles, book chapters etc). We will make these available, whether through the Library Reserve or through the unit iLearn page.

Technology used and required

All course content will be made available via the iLearn unit webpage (the URL for iLearn is: <http://ilearn.mq.edu.au/>). You are expected to use iLearn for:

- Regularly checking subject announcements;
- Engaging with the interactive online material in preparation for workshops;

- Downloading workshop and reference materials;
- Submitting assignments;
- Checking your grades;

Students will be required to use appropriate software, particularly Excel and R, for data analysis and graphing. R can be downloaded online for free from <http://www.r-project.org>.

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 an](#)

[d 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.

Changes from Previous 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.

Unit information based on version 2026.01R of the [Handbook](#)