BOTN13002 *Plants and the Environment*
Term 1 - 2021

Profile information current as at 06/05/2024 02:27 am

All details in this unit profile for BOTN13002 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

Corrections

General Information

Overview
This unit addresses plant ecophysiology, describing in vivo responses of plants to the environment in both an agricultural and environmental context. You will gain an understanding of plant structure and function, including water relations, transport pathways, gas exchange, photosynthesis, respiration, secondary metabolism, nutrition and growth regulation.

Details
Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
BOTN11004 Foundation Plant Biology or BIOL11100 Functional Biology or BIOL12112 Animal and Plant Physiology
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 1 - 2021

- Mixed Mode
- Rockhampton

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Residential Schools
This unit has a Compulsory Residential School for distance mode students and the details are:
Click here to see your Residential School Timetable.

Website
This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Online Quiz(zes)**
Weighting: 10%
2. **Written Assessment**
Weighting: 25%
3. **Practical Assessment**
Weighting: 25%
4. **Online Test**
Weighting: 40%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from By Email

Feedback
Maintain physical residential school

Recommendation
The on-line materials created for the covid optional on-line residential school will be extended and integrated into the physical residential school, as preparatory and summary material

Feedback from Have Your Say

Feedback
Timing of assessments made preparation for exam difficult

Recommendation
Assessment timings will return to 'pre-covid' timings (ie earlier in term) in 2021. The provision for submission of a preliminary form of assignment 1 earlier in term will be promoted.

Feedback from Have Your say

Feedback
Moodle site difficult to understand

Recommendation
The Moodle site will be revised in context of improving context to other units in the rejuvenated degree offer

Feedback from Have You Say

Feedback
Best aspect of unit: Learning about water potential and calculations, good to real life application

Recommendation
Maintain this component, despite student hesitation with 'math'

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Describe and illustrate the principal physiological processes of angiosperms as an integrated system
2. Apply knowledge of plant physiology in real life situations in agriculture, forestry and vegetation management
3. Conduct plant physiology experiments, write experimental reports in the correct format and critique existing reports.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes		
	1	2	3
1 - Online Quiz(zes) - 10%	•	•	

Assessment Tasks	Learning Outcomes		
	1	2	3
2 - Written Assessment - 25%	•	•	
3 - Practical Assessment - 25%		•	•
4 - Online Test - 40%	•		

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes		
	1	2	3
1 - Communication	•		
2 - Problem Solving			•
3 - Critical Thinking	•	•	
4 - Information Literacy		•	
5 - Team Work			•
6 - Information Technology Competence			•
7 - Cross Cultural Competence			
8 - Ethical practice			
9 - Social Innovation			
10 - Aboriginal and Torres Strait Islander Cultures			

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Online Quiz(zes) - 10%		•	•	•						
2 - Written Assessment - 25%	•	•	•	•						
3 - Practical Assessment - 25%	•		•		•	•				
4 - Online Test - 40%		•	•	•						

Textbooks and Resources

Textbooks

BOTN13002

Supplementary

Plant Physiology
Edition: 4th (1992)
Authors: Salisbury FB and Ross, CW
Wadsworth
Belmont , California , USA
ISBN: 0534983901
Binding: Paperback

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Computer with Microsoft Office and Endnote installed. The 'Real Statistics' add-In for Microsoft Excel is highly recommended to undertake the statistical analysis required for this unit

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Kerry Walsh Unit Coordinator
k.walsh@cqu.edu.au

Schedule

Week 1 - 08 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Introduction - what is plant physiology?	Please read 'Plants in Action ed 1' sections 'Preamble', 'A Plant Science Manifesto' and 'Plant Science Applied: case study cotton'. from https://www.asps.org.au/plants-in-action-2nd-edition-pdf-files	This weeks' quizz is for background - for me to understand how much you know about plants!

Week 2 - 15 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Seed dormancy and germination	Plants in Action ed 1: Chapters 8.1.1, 8.1.2 and case study 8.1. Study Guide Module 1	Let us get a discussion going each week - e.g., this week on the Global Seed Vault and the oldest seed to have germinated.

Week 3 - 22 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Water potential	Plants in Action: Chapter 3 (Water movement) and 5 (Phloem transport) and the section in Chapter 7 on cell expansion (over several weeks) Study Guide Module 2	Week 1 Quiz closes Week 3 Monday night.

Week 4 - 29 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Water uptake and transport	as for week 2: Plants in Action: Chapter 3 (Water movement) and 5 (Phloem transport), the section in Chapter 7 on cell expansion and Chapter 15. Study Guide Module 3	Week 2 Quiz closes Week 4 Monday night.

Week 5 - 05 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Water relations	as for week 4	Week 3 Quiz closes Week 5 Monday night. (Optional - progress submission on Assignment 1).

Vacation Week - 12 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 19 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Mineral nutrition	Plants in Action: Chapters 4 and 16 Study Guide Module 4	Week 4 Quiz closes Week 6 Monday night. Residential School is scheduled in Rockhampton (9/G14) **21-23 April, 2021 -** this is compulsory. (Optional - progress submission on Assignment 1).

Week 7 - 26 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Nitrogen and sulphur	Plants in Action: Chapters 4 and 16 Study Guide Module 5	Week 5 Quiz closes Week 7 Monday night.

Week 8 - 03 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Photosynthesis	Plants in Action: Chapters 1, 2 and 13 Study Guide Module 6	Week 6 Quiz closes Week 8 Monday night.

Week 9 - 10 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Carbohydrate metabolism	Plants in Action: Chapters 2.4 and 11.3 to 11.7 Study Guide Module 7	Week 7 Quiz closes Week 9 Monday night.

Week 10 - 17 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Plant growth - description and regulation	Plants in Action: Chapter 6 and 9 Study Guide Module 8	Week 8 Quiz closes Week 10 Monday night. **Assignment - Making sense of plant processes** Due: Week 10 Monday (17 May 2021) 11:45 am AEST **Practical reports** Due: Week 10 Monday (17 May 2021) 11:45 pm AEST

Week 11 - 24 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Plant growth modelling - bringing it all together	Plants in Action: Chapter 6	Week 9 and 10 Quiz close Week 11 Monday night. .

Week 12 - 31 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Review		Week 11 Quiz closes Week 12 Friday night. Assignment and Practical reports due for return.
Review/Exam Week - 07 Jun 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
		Week 12 review quiz closes 11:59 pm; Monday of exam/review week (i.e., week '13'). On-line test open for 3 h during Wednesday 9/6/21 **SUMMATIVE ASSESSMENT** Due: Review/Exam Week Wednesday (9 June 2021) 11:45 pm AEST
Exam Week - 14 Jun 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Term Specific Information

This term we will try the use of 'huddle space' and a late lecture slot (5 to 7 pm Tuesdays). Do look to participate in discussions, and ask questions... for curiosity or if I am unclear on something (if you ask the question, the rest of the class, too shy to speak up, will benefit). Remember that the Residential School is compulsory (for the reason that it imparts useful practical skills and it allows for discussion that 'gels' the course content)...so do book accommodation if needed. There will be a slightly larger cohort at Residential, with some carrying over from 2020 to undertake the Residential School.

Assessment Tasks

1 Formative assessment

Assessment Type
Online Quiz(zes)

Task Description

On-line quizzes are keyed to the material provided each week and are open for two weeks (less in the last weeks of term). They are intended to pace you, providing incentive for weekly learning. The quizzes are designed to check that you have done the reading and understood the concepts associated with each weeks' learning. As items of continuous assessment, each quiz is of small ‘value', but understanding each week’s material will lead to better assignment and exam scores!

For each quiz: there is no time limit; and one re-attempt of a quiz is allowed but not required. There is a 20 minute enforced time period between attempts. The highest grade of the two attempts will be used in assessment. Questions are generally multiple choice but include matching of terms and calculations. The questions in each quiz are taken from a question bank, so you may not get the same questions the second time you take the quiz. All quizzes must be attempted.

Number of Quizzes
11

Frequency of Quizzes
Weekly

Assessment Due Date

A window is provided on each quiz, generally the Monday of the second week following the content week being assessed (e.g., quiz of Week 1 is due Monday of Week 3), but this window is compressed in latter weeks.

Return Date to Students

Quizzes are automatically marked on submission.

Weighting
10%

Minimum mark or grade
50% (for average of all quizzes)

Assessment Criteria
The quizzes cover understanding of technical terms and concepts. Questions may be in multiple choice, matching term or calculation answer formats. Answers will be automatically marked as correct or incorrect.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Quizzes are accessed through the Moodle site.

Learning Outcomes Assessed

- Describe and illustrate the principal physiological processes of angiosperms as an integrated system
- Apply knowledge of plant physiology in real life situations in agriculture, forestry and vegetation management

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy

2 Assignment - Making sense of plant processes

Assessment Type
Written Assessment

Task Description
The 'Making Sense of Plant Processes' assessment item is meant to check and demonstrate your progress in various plant topics covered in the unit to the point of submission of the assignment.
This assessment item is comprised of a number of tasks, including calculations and descriptive/interpretive short answers. It will cover material presented in Weeks 1 - 10. The specific questions will be posted on the Moodle site by the end of Week 2. Start this assessment right away and keep on top of it....do not wait for the last week to do it!
Please submit your answers in a Word document (doc, docx or rtf). PDF documents will not be accepted. You can perform calculations or draw figures by hand and insert them as images (e.g., jpegs) in the Word document. If you don't have a scanner – take a photo on your mobile phone, or use SnagIt or similar (remember to attribute your sources). Please consider redrafting your calculations for clarity before photographing/scanning them. Also (although obvious, its an issue each year) remember to number your answers (keyed to questions).

Assessment Due Date
Week 10 Monday (17 May 2021) 11:45 am AEST
To be submitted through the Moodle site.

Return Date to Students
Week 12 Monday (31 May 2021)
Do look over the assignment feedback in preparation for the final assessment.

Weighting
25%

Minimum mark or grade
45%

Assessment Criteria
For calculation based tasks, marks are awarded for:

1. A statement of the principle and key relationship (20%);
2. Clear step by step calculations, with explanation and unit analysis (60%);
3. The correct numerical answer (20%).
For descriptive/interpretative tasks cite and reference relevant supporting information and interpret it in the context of your response to the question asked. Marks are awarded for:
1. The quality of the background review, including a definition of the topic (30%);
2. The discussion of this information in context of the question asked (50%);
3. The clarity of English expression, spelling, grammar, accuracy of referencing, appropriate length (20%).

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe and illustrate the principal physiological processes of angiosperms as an integrated system
- Apply knowledge of plant physiology in real life situations in agriculture, forestry and vegetation management

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

3 Practical reports

Assessment Type
Practical Assessment

Task Description
Two practical reports (1000 words each, excluding references, figure captions, tables and title page) are required in the format of a scientific paper or technical report. Each will describe one of the experiments undertaken at residential school. The choice of the exercises undertaken during Residential School to be used in the reports will be discussed during the School. These reports will each 'stand alone', but should be submitted as one document (with one section for each report).
Please submit your answers in a Word document (doc, docx or rtf). PDF documents will NOT be accepted. You can perform calculations or draw figures by hand and insert them as images (e.g. jpegs) in the word document. If you don't have a scanner – take a photo on your mobile phone. You must make sure we know what question you're answering by putting the question number in front of the text. Please consider redrafting your calculations for clarity before photographing/scanning them.

Assessment Due Date
Week 10 Monday (17 May 2021) 11:45 pm AEST
same due date as assignment 1, but you can submit it earlier!

Return Date to Students
Week 12 Monday (31 May 2021)

Weighting
25%

Minimum mark or grade
45%

Assessment Criteria

Assessment Criteria

The reports will not be assessed on the 'success' of the experiment. Assessment will be based on:
1. Structure (as a scientific or technical report, with Title, Abstract, Keywords, Introduction, Materials and Methods, Results and Discussion, Acknowledgements, References, Appendices (if any));
2. Demonstration and explanation of calculations, with explanation of units in each step;
3. Appropriate data analysis;
4. Interpretation of data in the discussion section, with reference to existing knowledge.
5. Correct citations

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Please submit your assignment as a doc, docx or rtf file with images of your calculations/figures embedded in the document.

Learning Outcomes Assessed

- Apply knowledge of plant physiology in real life situations in agriculture, forestry and vegetation management
- Conduct plant physiology experiments, write experimental reports in the correct format and critique existing reports.

Graduate Attributes

- Communication
- Critical Thinking
- Team Work
- Information Technology Competence

4 SUMMATIVE ASSESSMENT

Assessment Type
Online Test

Task Description
This assessment item involves a written response to a series of questions drawn from each topic covered in the unit in an examination type format. Students will access the questions on-line and will have 3 h to complete the task, to be undertaken within the nominated 24 h period. This is an 'open book' format. Submissions can be handwritten or typed, but please ensure legibility.

Assessment Due Date
Review/Exam Week Wednesday (9 June 2021) 11:45 pm AEST
A three hour window is provided for this activity, once commenced. It can be commenced any time during the nominated day, but must be completed within a 3 h continuous window once started..

Return Date to Students
Exam Week Wednesday (16 June 2021)

Weighting
40%

Minimum mark or grade
45%

Assessment Criteria
Each sub-question of the assessment will have an associated mark. Please allocate your time proportional to the mark. Responses will be assessed in context of the demonstration of understanding of terms and concepts, to the level covered in the coursework of the unit.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe and illustrate the principal physiological processes of angiosperms as an integrated system

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem