

ENS318 Plant Growth and Reproduction

School: School of Science, Technology and Engineering

2023 | Semester 2

UniSC Sunshine Coast
UniSC Moreton Bay

**BLENDED
LEARNING**

Most of your course is on campus but you may be able to do some components of this course online.

Please go to usc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

Plants enable other life forms on the planet and drive all ecosystems. This course explores concepts of plant adaptations to the environment. You will learn about the mechanisms that enable plants to survive, grow and reproduce in the harshest environments, and examine key processes and applications such as flowering, pollination, fruit production, germination, plant growth regulators, root function, soils and plant nutrition, photosynthesis and carbon sequestration, plant water relations, transpiration, carbon partitioning, nursery propagation and plant tissue culture.

1.2. How will this course be delivered?

| ACTIVITY | HOURS | BEGINNING WEEK | FREQUENCY |
|--|-------|----------------|-----------|
| BLENDED LEARNING | | | |
| Learning materials – Asynchronous learning material | 2hrs | Week 1 | 13 times |
| Laboratory 1 – On Campus lab | 3hrs | Week 1 | 6 times |
| Fieldwork – Fieldwork. Week to be determined | 6hrs | Not applicable | Once Only |
| Seminar – On campus seminar | 1hr | Week 7 | 2 times |

1.3. Course Topics

Plant reproduction; seed germination; plant hormones; root, stem and leaf function; plant nutrient, water and carbon uptake; plant propagation.

2. What level is this course?

300 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

| COURSE LEARNING OUTCOMES | | GRADUATE QUALITIES |
|---|--|--|
| On successful completion of this course, you should be able to... | | Completing these tasks successfully will contribute to you becoming... |
| 1 | Perform and interpret nursery and laboratory experiments, and record and report relevant information in a standard scientific format. | Empowered Ethical |
| 2 | Evaluate the sustainability implications of plant growth and reproduction strategies | Sustainability-focussed |
| 3 | Describe physiological processes in plants, recognize structural features, relate structure and function to ecology, and apply this framework to new situations. | Knowledgeable Empowered |
| 4 | Search the scientific literature for information, critically evaluate the literature, and present this information in an appropriate written and oral format. | Creative and critical thinker Empowered |
| 5 | Use a microscope to examine and illustrate specimens, use scientific apparatus to quantify aspects of physiology, and use scientific observation skills to interpret scientific results. | Knowledgeable Empowered |

5. Am I eligible to enrol in this course?

Refer to the [UniSC Glossary of terms](#) for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

Not applicable

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

You will have prior knowledge and skills in scientific research design and statistical methods that can be used to summarise, analyse and interpret scientific data.

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

Practical workbooks will be reviewed by the lecturer and tutor during the practical classes in weeks 1-3.

6.3. Assessment tasks

| DELIVERY MODE | TASK NO. | ASSESSMENT PRODUCT | INDIVIDUAL OR GROUP | WEIGHTING % | WHAT IS THE DURATION / LENGTH? | WHEN SHOULD I SUBMIT? | WHERE SHOULD I SUBMIT IT? |
|---------------|----------|-----------------------------------|---------------------|-------------|--|-----------------------|---|
| All | 1 | Oral and Written Piece | Individual | 30% | 2000 words + 3 minute seminar | Week 5 | Online Assignment Submission with plagiarism check and in class |
| All | 2 | Written Piece | Individual | 30% | Completed nursery, field and laboratory workbook | Week 12 | Assignment Box |
| All | 3 | Examination - Centrally Scheduled | Individual | 40% | 2 hours | Exam Period | Exam Venue |

All - Assessment Task 1: Literature review and seminar

| | | | | | |
|-----------------|---|---|--|--|---------------------------|
| GOAL: | To develop scientific research, writing and presentation skills and gain an in-depth understanding of the state of the scientific literature on a chosen topic in plant growth and reproduction | | | | |
| PRODUCT: | Oral and Written Piece | | | | |
| FORMAT: | You will submit an individual 2000 word review (excluding figures, tables and references) and present a 3-minute seminar based on peer-reviewed scientific journal articles covering an aspect of plant growth or reproduction. A list of topics will be made available in the first practical class. | | | | |
| CRITERIA: | No. | | | | Learning Outcome assessed |
| | 1 | Use of research to review relevant literature | | | 4 |
| | 2 | Communication of scientific findings | | | 4 |
| | 3 | Presenting scientific information in an oral and visual format as required for a science seminar | | | 1 |
| | 4 | Synthesising relevant literature into an accessible oral and visual format for undergraduate students; evaluating the sustainability implications of plant growth and reproduction strategies | | | 2 5 |
| | 5 | Communicating the literature review and the 3-minute seminar (will be worth 20% and 10%, respectively, of the course marks). | | | 2 3 4 |
| GENERIC SKILLS: | | | | | |

All - Assessment Task 2: Nursery, field and laboratory report

| | | |
|------------------------|---|---|
| GOAL: | To develop data collection, analysis and reporting skills by conducting real experiments and using scientific apparatus related to plant growth and reproduction | |
| PRODUCT: | Written Piece | |
| FORMAT: | You will submit a completed individual workbook containing the data, analyses, results and discussion from the nursery experiments, laboratory experiments and field trip | |
| CRITERIA: | No. | Learning Outcome assessed |
| | 1 | Communication the completeness of the data collection and answers to practical questions |
| | 2 | Evaluation of content, data analysis, presentation and scientific interpretation of the results |
| | 3 | Communication of the field trip summary |
| | 4 | Evaluating the sustainability implications of plant growth and reproduction strategies |
| GENERIC SKILLS: | | |

All - Assessment Task 3: End of semester examination

| | | |
|------------------------|--|--|
| GOAL: | To demonstrate the cumulative learning in this course including plant physiological processes, structure and function in relation to ecology, and plant management strategies to ensure sustainability | |
| PRODUCT: | Examination - Centrally Scheduled | |
| FORMAT: | This 2-hour examination will be based on learning material, practicals and field trip, and will be held in the central examination period. | |
| CRITERIA: | No. | Learning Outcome assessed |
| | 1 | Application of theoretical and practical knowledge of plant growth and reproduction (Short answer questions) |
| | 2 | Essay questions will be graded on the use of logical and reasoned arguments to analyse complex issues of sustainability in plant growth and reproduction |
| GENERIC SKILLS: | | |

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

Please note that you need to have regular access to the resource(s) listed below. Resources may be required or recommended.

| REQUIRED? | AUTHOR | YEAR | TITLE | EDITION | PUBLISHER |
|-------------|--|------|---|---------|-------------------------------|
| Recommended | BJ Atwell, PE Kriedemann, CGN Turnbull | 2010 | Plants in Action (available as a free on-line edition: http://plantsinaction.science.uq.edu.au/edition1/?q=content/title-page) | n/a | Macmillan Education Australia |

8.2. Specific requirements

Laboratory coat, covered shoes, hat

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the [online induction training for students](#), and following the instructions of the University staff

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

The final mark is in the percentage range 47% to 49.4%

The course is graded using the Standard Grading scale

You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate:

- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.

- 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.

- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: [07 5430 1168](tel:0754301168) or using the [SafeZone](#) app. For general enquires contact the SafeUniSC team by phone [07 5456 3864](tel:0754563864) or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call [07 5430 1226](tel:0754301226) or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the [Learning Advisers](#) web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to [Student Hub](#), email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, [AccessAbility Services](#) can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to [Student Hub](#), email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit <https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.9. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The [Student Charter](#) sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.10. General Enquiries

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au