Course Outline

Code: ENS318
Title: Plant Growth and Reproduction

School of: Science & Engineering
Teaching Session: Semester 2
Year: 2020
Course Coordinator: Renata Grunennvaldt; rgrunen1@usc.edu.au
Course Moderator: Assoc. Prof. Alison Shapcott

Please go to the USC website 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 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 - Independent application of graduate knowledge and skills. Meets AQF and professional requirements. May require pre-requisites and developing level knowledge/skills. Normally taken in the 3rd or 4th 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?

Specific Learning Outcomes On successful completion of this course you should be able to:	**Assessment Tasks** You will be assessed on the learning outcome in task/s:	**Graduate Qualities or Professional Standards mapping** Completing these tasks successfully will contribute to you becoming:
Perform and interpret nursery and laboratory experiments, and record and report relevant information in a standard scientific format.	Tasks 1,2	Ethical. Empowered.
Evaluate the sustainability implications of plant growth and reproduction strategies	Tasks 1, 2, 3	Sustainability-focussed.
Describe physiological processes in plants, recognize structural features, relate structure and function to ecology, and apply this framework to new situations.	Tasks 2,3	Knowledgeable. Empowered.
Search the scientific literature for information, critically evaluate the literature, and present this information in an appropriate written and oral format.	Tasks 1, 2	Creative and critical thinkers. Empowered.
Analysis of microscopic slides and images, use scientific apparatus to quantify aspects of physiology, and use scientific observation skills to interpret scientific results.	Task 2	Empowered. Knowledgeable.

5. Am I eligible to enrol in this course?

Refer to the USC Glossary of terms for definitions of "pre-requisites, co-requisites and anti-requisites".

5.1 Enrolment restrictions

Nil

5.2 Pre-requisites

N/A

5.3 Co-requisites

Nil

5.4 Anti-requisites

Nil

5.5 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 – 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

Task No.	Assessment Tasks	Individual or Group	Weighting %	What is the duration / length?	When should I submit?	Where should I submit it?	WIL or PC
1	Literature review and seminar	Individual	30	2000 words + 3 minute seminar	End of week 5	Blackboard SafeAssign, online	No
2	Practical reports	Individual	30	Completed fourpractical reports	Dates will be provided through the semester	In class or online,	No
3	End of semester examination	Individual	40	2 hours	Central exam period, online	Exam venue, online	No
			100%				

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:	Literature review and seminar presentation
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:	Review and synthesis of relevant literature; writing in a scientific format; presenting scientific information in an oral and visual format as required for a science seminar; synthesising relevant literature into an accessible oral and visual format for undergraduate students; evaluating the sustainability implications of plant growth and reproduction strategies. The literature review and the 3-minute seminar will be worth 20% and 10%, respectively, of the course marks.

Assessment Task 2: Nursery, field and laboratory report

Goal:	To develop data collection, analysis and reporting skills by following and conducting -experiments and using scientific apparatus related to plant growth and reproduction
Product:	Four practical reports
Format:	You will submit individual reports containing the data, analyses, results and discussion from the practical classes
Criteria:	Completeness of the data collection and answers to practical questions; content, data analysis, presentation and scientific interpretation of the results; evaluating the sustainability implications of plant growth and reproduction strategies. Each report will worth 7.5% of the course marks, total 30%

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:	Final examination

Format:	This 2-hour examination will be based on material covered in the lectures, practicals and field trip, and will be held in the central examination period or online
Criteria:	Short answer questions will require the ability to demonstrate practical and theoretical knowledge of plant growth and reproduction. Essay questions will be graded on the use of logical and reasoned arguments to analyse complex issues of sustainability in plant growth and reproduction.

7. What are the course activities?

7.1 Directed study hours

The directed study hours listed here are a portion of the workload for this course. 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. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

This course will be delivered via technology-enabled learning and teaching. All lectures will remain in this mode for Semester 2 2020. When government guidelines allow, students that elected on-campus study via the class selection process will be advised when on campus tutorials and practical sessions will resume.

Location:	Directed study hours for location:
USC Sunshine Coast	Lecture – 2 hours per week Practical or online demonstrations-Class – 3 hours per fortnight Field trip or online demonstrations– 6 hours per semester

7.2 Course content

Week # / Module #	What key concepts/content will I learn?
1-4	Plant reproduction: flowering; pollination; fruit development; seed germination
5-6	Growth regulation and plant structure: plant hormones; root, stem and leaf development
7-11	Limitations to plant growth: nutrient uptake and distribution; photosynthesis, water relations and transpiration; carbon partitioning
12	Plant propagation: seedling and cutting production; tissue culture
13	Revision and review

Please note course content is subject to variation.

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

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

8.1 Prescribed text(s)

Nil. The following recommended text is available as a free on-line edition:
BJ Atwell, PE Kriedemann, CGN Turnbull (2010) Plants in Action. Macmillan Education Australia.
http://plantsinaction.science.uq.edu.au/edition1/?q=content/title-page

This text will assist you in preparing for lectures and practicals, and will provide further information regarding particular aspects of your course.

8.2 Specific requirements

Laboratory coat, covered shoes, hat

9. Risk management

Health and safety risks for this course have been assessed as low.

It is your responsibility as a student 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. It is also your responsibility to familiarise yourself with the University's general health and safety principles by reviewing the online Health Safety and Wellbeing training module 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 Blackboard, are electronically checked through SafeAssign. This software allows for text comparisons to be made between your submitted assessment item and all other work that SafeAssign has access to.

10.2 Assessment: Additional requirements

Eligibility for Supplementary Assessment

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

a) The final mark is in the percentage range 47% to 49.4%
b) The course is graded using the Standard Grading scale
c) You have not failed an assessment task in the course due to academic misconduct

10.3 Assessment: Submission penalties

Late submission of assessment tasks will 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 and supply the required documentation to negotiate an outcome.

10.4 Study help

In the first instance, you should contact your tutor, then the Course Coordinator. Additional assistance is provided to all students through Academic Skills Advisers. To book an appointment or find a drop-in session go to Student Hub.

Contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au

10.5 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
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website:
http://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.6 General Enquiries

In person:

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

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au