FACULTY OF SCIENCE

SCHOOL OF BEES

BIOS 2051

PLANT BIOLOGY

SESSION 3, 2021

Faculty of Science - Course Outline - 2021

1. Information about the Course

NB: Some of this information is available on the UNSW Virtual Handbook[1]

Year of Delivery	2021
Course Code	BIOS 2051
Course Name	Flowering Plants
Academic Unit	School of Biological, Earth and Environmental Sciences
Level of Course	Second year
Units of Credit	6UOC
Session(s) Offered	Session 3
Assumed Knowledge, Prerequisites or Co-requisites	BIOS 1101
Hours per Week	6
Number of Weeks	10
Commencement Date	Sept 15, 2021

Summary of Course Structure (for details see 'Course Schedule')

Component	HPW	Time	Day	Location
Lectures	***2***	*9:00 AM - 11:00 AM*	*Thursday*	*Remote*
Laboratory	***4***	*1:00 PM - 5:00 PM*	*Wednesday*	*Remote*
TOTAL	6			

2. Staff Involved in the Course

Staff	Role	Name	Contact Details	Consultation Times
Course Convener		A/Prof Will Cornwell	w.cornwell@unsw.edu.au	By appointment
Additional Teaching Staff	Lecturers & Facilitators	Prof Angela Moles	a.moles@unsw.edu.au	By appointment
		Prof David Keith	david.keith@unsw.edu.au	By appointment
	Technical & Laboratory Staff	Vivian Sim	vivian.sim@unsw.edu.au	By appointment

[1] UNSW Virtual Handbook: https://www.handbook.unsw.edu.au/

3. Course Details

Course Description[2] (Handbook Entry)	Basic plant biology including cell structure, plant morphology and anatomy, water and sugar transport, seed structure and germination, plant growth and development, leaves and photosynthesis, roots, micro-organisms and nutrition, evolution of land plants and plant taxonomy. A strong emphasis is placed on Australian native flora. Practical work includes light microscopy; plant anatomy, adaptation, diversity, and identification.
Course Aims[3]	The course is designed to provide an introduction to the biology of flowering plants.
Student Learning Outcomes[4]	By the end of this course, you will be able to: 1) Interpret the major aspects of functional and biological diversity of flowering plants; 2) Understand plant adaptations to life in terrestrial ecosystems; 3) Identify plants from the Australian flora; and 4) Integrate fundamental aspects of the biology of plants with current research issues in botany.

Major Topics (Syllabus Outline)	- The diversity and evolution of flowering plants - Form and function of plant cells, tissues, organs, and body plans. - Plant adaptation - Plant identification - The flora of Australia
Relationship to Other Courses within the Program	Flowering plants is the introductory botany course at UNSW. Flowering plants is assumed knowledge for plant ecosystems processes, and honours research in plant sciences. A background in the biology of plants will be valuable for all students continuing in biological, earth, and environmental sciences

4. Rationale and Strategies Underpinning the Course

Rationale for learning and teaching in this course[5], i.e., How this course is taught?	Learning and teaching in flowering plants will focus on applying fundamental aspects of plant biology to understanding plant diversity and adaptation. A significant part of the course will be in exploring the relationship between topics in plant biology and current botany research
Teaching Strategies	Lectures will focus on providing the fundamentals of flowering plants. Information in lectures will be linked with examples of the adaptive or functional importance of key plant traits. Examples of the importance plant biology topics to current research will be given throughout the course. Labs are designed to provide an opportunity to explore and apply the knowledge presented in lectures. Several lab projects are designed to focus on the research-teaching nexus in plant biology.
How the assessment supports and assists the learning	Theory and practical exams will assess students' understanding of the topics in plant biology explored in this course. In lab assessments are designed to allow students to check their progress throughout the course. Two major assessments are designed for students to explore research topics in biology, and expose students to research facilities within the School of BEES

[2] UNSW Virtual Handbook: https://www.handbook.unsw.edu.au/
[3] Learning and Teaching Unit: http://www.ltu.unsw.edu.au
[4] Learning and Teaching Unit – Learning Outcomes: http://www.ltu.unsw.edu.au/ref4-2-1_outcomes.cfm
[5] LTU – Teaching Philosophy: http://www.ltu.unsw.edu.au/ref3-3-5_teaching_portfolio.cfm#philosophy

5. Course Schedule

Some of this information is available on the Virtual Handbook[6] and the UNSW Timetable[7].

Week	Topic	Assignment and Submission dates (see also 'Assessment Tasks & Feedback')
Week 1 (15-16 Sept)	Introduction Plants are cool. Climate change and plants. Vegetative morphology, using keys.	
Week 2 (22-23 Sept)	Flower morphology and pollination ecology; history of flowering plants Learn to use family key.	
Week 3 (29-30 Sept)	Important Australian families and the history of flowering plants How flowers become fruits Online module – Fertilization	
Week 4 (6-7 Oct)	Trees and climate change Literature discussion	Moodle Quiz Due 11 Oct
Week 5 (13-14 Oct)	Role of herbaria and research into plants Climate change impact assessment introduction	
Week 6	NO CLASSES Online module – Plant water relations	iNaturalist observations Due 25 Oct
Week 7 (27 Oct – 28 Oct)	Fire Ecology Disturbance, Plants, and Ecological Theory	
Week 8 (3-4 Nov)	Roots and symbioses Invasions and rapid evolution	Plant Collections Due 8 Nov
Week 9 (10-11 Nov)	Disturbance, plants, and ecological theory Herbivory and trying not to be eaten	Climate Change Impact Report Due 15 Nov
Week 10 (17-18 Nov)	Test of practical skills Review of concepts for final	Test of practical skills

Lecture topics may change slightly through the session

[6] UNSW Virtual Handbook: https://www.handbook.unsw.edu.au/
[7] UNSW Timetable: http://www.timetable.unsw.edu.au/

6. Assessment Tasks and Feedback

Task		% of total mark	Assessment Criteria	Date of		Feedback		
				Release	Submission	WHO	WHEN	HOW
Final (theory) exam		35	Demonstration of theory skills	Dates set by exams office				
Tests of practical skills	Prac exam	20	Demonstration of practical botanical skills including plant ID and microscope use	Week 10		A/Prof. Cornwell	After session	Comments on exam papers
	Quiz on plant families	5	Correct IDs of Families and Tissues	Week 4		Moodle and A/Prof. Cornwell		
Plant Identification and Collection	iNat + Weed Collection	25	Detailed criteria will be provided	Week 1	(1) 25 Oct (2) 8 Nov	A/Prof Cornwell	(1) 1 Nov (2) 15 Nov	Comments on specimens, photos, and accompanying documentation
Climate change impact report		15	Detailed criteria will be provided	Week 1		A/Prof Cornwell	Week 10	Marks and written comments via moodle

Further details on all assessments will be provided on moodle and in class

7. Additional Resources and Support

Text Books	Robinson, L. (1991). *Field guide to the native plants of Sydney*. Kangaroo Press.
Course Manual	A course manual be made available to the students in print and/ or online on Moodle
Required Readings	Articles and internet resources linking fundamentals of plant science with current research will be posted on moodle throughout the year.
Additional Readings	Physical botanical floras and plant identification resources are available Wednesday afternoon in the lab space and consistently via the internet and the library. Online key to the plants of NSW is found here: https://plantnet.rbgsyd.nsw.gov.au/
Societies	Australian Systematic Botany Society (www.angb.gov.au); Botanical Society of America (www.botany.org)
Computer Laboratories or Study Spaces	Study space in Biosciences South

8. Required Equipment, Training and Enabling Skills

Equipment Required	You will be required to wear a lab coat and closed toed shoes in the practicals. In person classes will require face coverings and other COVID safe equipment and practices.
Enabling Skills - training which maybe required to complete this course	Students are required to observe HS regulations during the practicals.

9. Course Evaluation and Development

Student feedback is gathered periodically by various means. Such feedback is considered carefully with a view to acting on it constructively wherever possible. This course outline conveys how feedback has helped to shape and develop this course.

Mechanisms of Review	Last Review Date	Comments or Changes Resulting from Reviews
Major Course Review	*2009*	Flowering plants has undergone extensive changes to emphasise the link between the fundamentals of botany and active research in plant sciences, and to introduce new lecture and practical material.
CATEI[8]	*2019*	Improved feedback will be given to students throughout the course. The relevance of studying flowering plants to future biological training and careers in biology will be highlighted.

[8] Science CATEI procedure: http://www.science.unsw.edu.au/guide/slatig/catei.html

10. Administration Matters

Expectations of Students	You are expected to attend all your scheduled classes. Since this subject is not offered in distance mode, if you miss class your progress will be significantly hindered. Any alterations to the schedule will be announced in a preceding class. If you miss a class it is your responsibility to (1) catch up on the course material and (2) find out the details of any announcements. Students whose attendance at classes or assessment is affected by obligatory religious ceremonies or other commitments (representing the university, military service etc.) should discuss ways of dealing with this clash with Dr. Cornwell prior to, or at the commencement of, the course.		
Assignment Submissions	Assignments will be submitted in the practicals, Moodle, or in the BEES undergraduate office		
Occupational Health and Safety[9]	Information on relevant Occupational Health and Safety policies and can be found on the following websites https://www.ohs.unsw.edu.au/ http://www.bees.unsw.edu.au/ohs/indexohs.html		
Examination Procedures	The final examination will be scheduled by the examinations branch. Students should be available for examination throughout the entire UNSW end of year examination period. Supplementary examinations will only be granted to students who miss the final examination due to illness or other unexpected reasons outside their control. A student who wishes to apply for a supplementary examination should contact one of the course convenors as soon as the problem becomes apparent. If a supplementary examination is granted, it will be held before the beginning of the next session. Until then, you should maintain a current address with SIS, and be available for contact and assessment.		
Equity and Diversity	Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit (9385 4734 or www.equity.unsw.edu.au/disabil.html). Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made. Information on designing courses and course outlines that take into account the needs of students with disabilities can be found at: www.secretariat.unsw.edu.au/acboardcom/minutes/coe/disabilityguidelines.pdf		
Grievance Policy[10]	**School Contact**	**Faculty Contact**	**University Contact**
	Contact the school of BEES student office.	A/Prof Julian Cox Associate Dean (Education) Julian.cox@unsw.edu.au 9385 8574	University Counselling Services Tel: 9385 5418

[9] UNSW Occupational Health and Safety: https://www.ohs.unsw.edu.au/
[10] UNSW Grievance Policy: https://student.unsw.edu.au/complaints

11. UNSW Academic Honesty and Plagiarism

The following information should appear in all course outlines or be available on the web in unaltered form. It is recommended, however, that additional discipline-specific advice and/or material be added to assist students wherever possible. Faculty of Science has information on the website[11]:

What is Plagiarism?

Plagiarism is the presentation of the thoughts or work of another as one's own.
*Examples include:

- direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

Knowingly permitting your work to be copied by another student may also be considered to be plagiarism.

Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle
† Adapted with kind permission from the University of Melbourne.

[11] Faculty of Science – Academic Misconduct: http://www.science.unsw.edu.au/guide/slatig/acadmisc.html