

BOTA20001 Green Planet: Plants and the Environment

Credit Points:	12.5									
Level:	2 (Undergraduate)									
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.									
Time Commitment:	Contact Hours: 2 x one hour lectures per week, 1 x three hour practical class per week Total Time Commitment: Estimated total time commitment of 170 hours									
Prerequisites:	One of <table border="1" data-bbox="387 573 1485 779"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOL10004 Biology of Cells and Organisms</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>BIOL10002 Biomolecules and Cells</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	BIOL10004 Biology of Cells and Organisms	Semester 1	12.50	BIOL10002 Biomolecules and Cells	Semester 1	12.50
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BIOL10002 Biomolecules and Cells	Semester 1	12.50								
Corequisites:	None									
Recommended Background Knowledge:	None									
Non Allowed Subjects:	Students may not gain credit for this subject and <table border="1" data-bbox="387 1025 1485 1178"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>AGRI20026 Plant Growth Processes</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	AGRI20026 Plant Growth Processes	Semester 1	12.50			
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AGRI20026 Plant Growth Processes	Semester 1	12.50								
Core Participation Requirements:	For the purposes of considering applications for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005) and Students Experiencing Academic Disadvantage Policy, this subject requires all students to actively and safely participate in practical class activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the Subject Coordinator and the Disability Liaison Unit. http://www.services.unimelb.edu.au/disability/									
Coordinator:	Dr Alex Johnson									
Contact:	johnsa@unimelb.edu.au (mailto:johnsa@unimelb.edu.au)									
Subject Overview:	<p>This subject examines the critical roles that plants play in life on earth. It explores how plants capture energy and carbon in the biosphere and influence the atmosphere; absorb almost all mineral nutrients that enter our ecosystem and underpin the nutrition and food supply of animals and people; have a major effect on hydrology and climate due to their water use; and produce a wealth of products ranging from food on our plates to fuel for our cars. Weekly practicals allow hand-on experience with plants and involve experiments with light, gravity, nutrients and additional factors that affect plant growth. Topics covered include:</p> <ul style="list-style-type: none"> # Carbon and energy: gas exchange and atmosphere, plant productivity, carbon crediting, climate change, artificial environments; # Water: uptake and loss, plants and the hydrological cycle, coping with drought, salinity and temperature extremes; # Nutrition: essential elements, metabolic requirements, plants as part of the global nutrition cycle, biofortification to produce nutrient-enriched food; # Renewable energy: biohydrogen, biofuels such as bioethanol and biodiesel, future directions for the biofuel industry. 									

Learning Outcomes:	<p>The objectives of this subject are to:</p> <ul style="list-style-type: none"> # introduce plant structure and function in relation to the physical environment; # demonstrate how a fundamental knowledge of plant structure and function is critical to understanding major global processes such as climate change, hydrology and agriculture; # understand how plants adapt to natural environments and how they can be modified to survive in new environments and/or provide new products; # increase awareness of environmental issue that affect plants in Australia; # provide skills in laboratory-based experimental plant science.
Assessment:	Four practical assignments (up to 3000 words in total) evenly spaced through the semester (35%); a 2-hour written examination in the examination period (65%).
Prescribed Texts:	None
Breadth Options:	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2016/B-ARTS) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2016/B-COM) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2016/B-ENVS) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2016/B-MUS) <p>You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>At the completion of the subject students should have:</p> <ul style="list-style-type: none"> # knowledge of plant structure and function in relation to the physical environment; # knowledge of how plants can be used to solve environmental problems; # knowledge of environmental issues that affect plant function in Australia; and # skills in laboratory-based experimental plant science.
Notes:	This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course.
Related Majors/Minors/Specialisations:	<p>Botany Botany Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED</p>