

## 208-293 Plant Growth Processes

<b>Credit Points:</b>	12.50
<b>Level:</b>	2 (Undergraduate)
<b>Dates &amp; Locations:</b>	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: 60 hours Total Time Commitment: Contact hours: 60. Estimated total time commitment (including non-contact time): 120 hours.
<b>Prerequisites:</b>	None
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.&lt;/p&gt; <p>&lt;p&gt;It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p> </p>
<b>Coordinator:</b>	Dr Marc Edouard Nicolas
<b>Subject Overview:</b>	The production of plant food and fibre involves the manipulation of plant growth and development to achieve desired levels of yield and quality. This subject considers how crop and pasture canopies grow by acquiring resources from the environment, how plants allocate resources to different growth processes, and how management and environment (including climate change) affect plant production in Australia and worldwide. Plant processes will be presented at the plant, canopy and community level, touching on the wider implications for water and nutrient management as they influence landscape processes such as salinity and soil acidification.
<b>Objectives:</b>	<p>On completion of this subject students will:</p> <ul style="list-style-type: none"> <li># be able to describe root growth and function, nutrient uptake, nitrogen fixation and explain the importance of plant nutrition in managing crops, as well as implications for nutrient run-off and water quality.</li> <li># be able to describe water uptake, transpiration, xylem flow, stomatal control and explain the implications of these processes for managing crop transpiration and soil evaporation in dryland cropping and under irrigation.</li> <li># be able to analyse biomass assimilation, translocation and storage from first principles of photosynthesis and light interception at the plant and canopy level, as well as the role of the phloem and carbon sinks in the partitioning of photoassimilates.</li> <li># know the critical step and processes in plant development, and explain the pivotal role of flowering time (and the factors affecting it) in adaptation to stressful environments, and</li> <li># document the abiotic factors affecting plant productivity and plant adaptations to these factors.</li> </ul>
<b>Assessment:</b>	One 3-hour examination worth 50% of final marks; two practical reports equivalent to 3000 words (first report 15% of final marks, second report 25% of final marks) and one online assessment worth 10% of final marks.
<b>Prescribed Texts:</b>	Taiz, L. and Zeiger, E. (2006) Plant Physiology. 4th edition. Sinauer Associates.

<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> <li># <b>Bachelor of Arts</b> (<a href="https://handbook.unimelb.edu.au/view/2009/D09">https://handbook.unimelb.edu.au/view/2009/D09</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2009/F04">https://handbook.unimelb.edu.au/view/2009/F04</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2009/A04">https://handbook.unimelb.edu.au/view/2009/A04</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2009/M05">https://handbook.unimelb.edu.au/view/2009/M05</a>)</li> </ul> <p>You should visit <b>learn more about breadth subjects</b> (<a href="http://breadth.unimelb.edu.au/breadth/info/index.html">http://breadth.unimelb.edu.au/breadth/info/index.html</a>) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>On completion of this subject, students should have developed their:</p> <ul style="list-style-type: none"> <li># ability to apply physiological knowledge to the analysis of crop production problems</li> <li># capacity to conduct an experiment, analyse and interpret a large dataset, including simple statistical analysis</li> <li># capacity to write scientific reports, including the use of scientific literature to discuss results.</li> </ul>
<b>Notes:</b>	This subject is available for science credit to students enrolled in the BSc (new degree only).