

FRST90016 Trees in a Changing Climate

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, Creswick This subject commences in the following study period/s: November, Creswick - Taught on campus. This subject has a pre-teaching period and during this time students will have to complete two pieces of 'essential readings' provided.
Time Commitment:	Contact Hours: 48 hours of lectures, practical work and tutorials in a two-week intensive teaching block Total Time Commitment: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	Basic understanding in plant biology; some basic computer skills (Office suite incl. worksheets)
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
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Subject Overview:	Climate change scenarios predict increased severity of environmental stresses such as drought, heat or flooding. Trees as immobile and long-lived organisms have to cope with such impacts to secure their survival and that of their species. What enables trees to survive and thrive under changing conditions? What are the different strategies employed by ecologically different species? What structural and functional factors of tree life are important? This subject will deliver the underpinning knowledge on tree functional biology and explore examples for response strategies trees may draw on to thrive under such adverse conditions. To this end, we will investigate plant stress adaptation mechanisms from a cellular to a whole tree level in theory and practical experiments and some modelling exercises. Such knowledge will only become more important as we accept the need to manage forests and other natural resources for globally changing environments.
Learning Outcomes:	By the end of the subject students should: <ul style="list-style-type: none"> # Have a good knowledge of the fundamental processes of tree life - photosynthesis, respiration, water relations # Understand principles of tree-environment interactions (tree eco-physiology) # Understand what effect climate change related stresses such as temperature, drought or flooding have on tree functional biology

	<ul style="list-style-type: none"> # Have a good knowledge of the fundamental molecular and physiological mechanisms that trees use to respond and adapt to environmental stresses # Understand strategies used by trees to withstand adverse environmental conditions (stress physiology) # Have an overview of methods used to measure the life functions of trees; for example photosynthesis, water relations, metabolites # Recognise the importance of trees in ecosystems in general and value the inherent beauty of trees as an organism
Assessment:	One written assignment (4000 words) 70% due 18 December 2015, One oral presentation (5-10mins) 30% due last day of Intensive subject.
Prescribed Texts:	None
Recommended Texts:	Lambers, H. (1998) Plant Physiological Ecology. Springer, New York.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Links to further information:	http://graduate.science.unimelb.edu.au/master-of-forest-ecosystem-science
Related Course(s):	Master of Forest Ecosystem Science
Related Majors/Minors/Specialisations:	Climate Change Climate Change Conservation and Restoration Conservation and Restoration Environmental Science Environmental Science Sustainable Forests Sustainable Forests Tailored Specialisation Tailored Specialisation