

## FRST90022 Forests and Water

<b>Credit Points:</b>	12.50
<b>Level:</b>	9 (Graduate/Postgraduate)
<b>Dates &amp; Locations:</b>	2012, Creswick This subject commences in the following study period/s: August, Creswick - Taught on campus. Intensive subject located at Creswick campus, from 27th August - 7th September 2012
<b>Time Commitment:</b>	Contact Hours: 24 hours lectures and 36 hours practical work delivered in a two-week intensive teaching block. This will include an overnight excursion to the Melbourne water supply catchments. Total Time Commitment: 100 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>	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: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>
<b>Coordinator:</b>	Assoc Prof Patrick Lane, Dr Gary Sheridan, Dr Paul Feikema
<b>Contact:</b>	<b>Melbourne School of Land &amp; Environment Student Centre</b> Ground Floor, Land & Food Resources (building 142) <i>Enquiries</i> Phone: 13 MELB (13 6352) Email: <a href="mailto:13MELB@unimelb.edu.au">13MELB@unimelb.edu.au</a> ( <a href="mailto:13MELB@unimelb.edu.au">mailto:13MELB@unimelb.edu.au</a> )
<b>Subject Overview:</b>	<p>Forest hydrology deals with the interaction between forests and the water cycle, and forests strongly influence both the quantity and the quality of surface and groundwater resources. This subject will provide students with knowledge to understand the complex relationship between forests and water, and skills to apply this knowledge to a range of contemporary catchment management issues.</p> <p>Content includes:</p> <ul style="list-style-type: none"> <li># <i>Hydrological cycle</i> - components and the inherent randomness and variability</li> <li># <i>Forests</i> - the complex role of forests in the catchment water balance</li> <li># <i>Rainfall and runoff</i> - Role of surface and groundwater flow. Characteristics of short-term and long-term variation.</li> <li># <i>Water quality and its measurement</i> - Behaviour of common pollutants in streams</li> <li># <i>Wildfire</i> - How does fire impact on short and long term stream flow and water quality?</li> <li># <i>Climate change</i> - potential effects of changes in climate on vegetation function and catchment hydrology</li> <li># <i>Modelling of water resources</i> - A brief introduction to spreadsheet and other modelling of water resource issues</li> <li># <i>Catchment management</i> - What does it mean? How are catchments "managed"? What are the big issues?</li> <li># <i>Ecohydrology</i> - the integrated study of water and vegetation in landscapes. What is the link between hydrology and ecology? What are the key issues around the world?</li> <li># <i>Salinity</i>- causes and management of salinisation of land and water resources</li> </ul>

	<p># <i>Water values</i> – socioeconomic and political issues, and application of policies to manage water and vegetation resources</p> <p>The subject will draw heavily on Australian examples and involve a field visit to the Melbourne water supply catchments.</p>
<b>Objectives:</b>	<p>On completion of this subject students should:</p> <ul style="list-style-type: none"> <li># Have a detailed understanding of the hydrologic cycle and its relationship in the landscape and society</li> <li># Be familiar with how changes in land management can affect water values and the costs and benefits to society of such changes</li> <li># Have insights into how catchment management, forest disturbance (including wildfire), and climate change can influence the water balance</li> <li># Gain an appreciation for the randomness and uncertainty in measuring and quantifying components of the hydrological cycle</li> </ul>
<b>Assessment:</b>	Includes: In-class exercises (10%) Student presentation (20%) Practical exercises (20%) Major assignment (50%)
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	<ul style="list-style-type: none"> <li># Chang, M. (2006) <i>Forest hydrology: an introduction to water and forests</i>. Boca Raton: CRC/ Taylor &amp; Francis.</li> <li># Eamus, D., Hatton, T., Cook, P. and Colvin, C. (2006) <i>Ecohydrology: Vegetation function, water and resource Management</i>. CSIRO Publishing, Collingwood.</li> </ul>
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<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>Links to further information:</b>	<a href="http://www.forests.unimelb.edu.au/subjects.html">http://www.forests.unimelb.edu.au/subjects.html</a>
<b>Related Course(s):</b>	Bachelor of Forest Science (Honours) Master of Forest Ecosystem Science Postgraduate Diploma in Bushfire Management
<b>Related Majors/Minors/ Specialisations:</b>	Honours Program - Forest Science Sustainable Forests