FRST90022 Forests and Water

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, Creswick This subject commences in the following study period/s: September, Creswick - Taught on campus. Please note that this subject has a pre-teaching period and during this time students will be required to watch and understand 3 pre-recorded lectures that will cover fundamental/basic hydrologic principles. It will also be required that students prepare by reading the 4 references listed in the pre-course information.
Time Commitment:	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: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	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. This course requires all students to enrol in subjects where they must actively and safely contribute to field excursions and laboratory activities. Students who feel their disability will impact on meeting this requirement are encouraged to discuss this matter with the Subject Coordinator and Disability Liaison http://services.unimelb.edu.au/disability/ students email: disability-liaison@unimelb.edu.au
Coordinator:	Assoc Prof Patrick Lane, Dr Gary Sheridan
Contact:	**Graduate School of Science** *Enquiries* Phone: 13 MELB (13 6352) Email: **13MELB@unimelb.edu.au (mailto:13MELB@unimelb.edu.au)** *Coordinators* Assoc Prof Patrick Lane **partickl@unimelb.edu.au (mailto:partickl@unimelb.edu.au)** Dr Gary Sheridan **sheridan@unimelb.edu.au (mailto:sheridan@unimelb.edu.au)**
Subject Overview:	Forest hydrology deals with the interaction between forests and the water cycle. 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. Content includes: # *Hydrological cycle* - components and the inherent randomness and variability # *Forests* - the complex role of forests in the catchment water balance # *Rainfall and runoff* - Role of surface and groundwater flow. Characteristics of short-term and long-term variation. # *Water quality and its measurement* – key issues in forested ecosystems # *Wildfire* - How does fire impact on short and long term stream flow and water quality? # *Climate change* - potential effects of changes in climate on vegetation function and catchment hydrology

	# *Modelling of water resources* - A brief introduction to spreadsheet and other modelling of water resource issues # *Ecohydrology* - the integrated study of water and vegetation in landscapes. What is the link between hydrology and forest ecology? # *Salinity*- causes and management of salinisation of land and water resources The subject will draw heavily on Australian examples and involve a field visit to the Melbourne water supply catchments.
Learning Outcomes:	On completion of this subject students should: # Have a detailed understanding of the forest hydrologic cycle # Have insights into how forest management and growth dynamics, forest disturbance (including wildfire), and climate change can influence the water balance # Develop an understanding of forest hydrologic processes in a range of forested landscapes # Have an exposure to field experimental methods in forest research
Assessment:	Includes: In-class exercises (10%) daily during Lectures Student presentation (20%) due Thursday 17th September 2015 Practical exercises (20%) during the Intensive subject Major assignment (50%) due 23 October 2015
Prescribed Texts:	None
Recommended Texts:	# Chang, M. (2006) *Forest hydrology: an introduction to water and forests*. Boca Raton: CRC/ Taylor & Francis. # Eamus, D., Hatton, T., Cook, P. and Colvin, C. (2006*) Ecohydrology: Vegetation function, water and resource Management*. CSIRO Publishing, Collingwood.
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):	Graduate Diploma in Bushfire Planning and Management Master of Forest Ecosystem Science Postgraduate Diploma in Bushfire Planning and Management
Related Majors/Minors/ Specialisations:	Conservation and Restoration Conservation and Restoration Honours Program - Forest Science Integrated Water Catchment Management Integrated Water Catchment Management Sustainable Forests Sustainable Forests Tailored Specialisation Tailored Specialisation