

022-AA Master of Forest Science

Year and Campus:	2008
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Graduate/Postgraduate
Duration & Credit Points:	
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Course Overview:	This degree provides advanced research training in forest science.
Objectives:	<ul style="list-style-type: none"> # to allow candidates to undertake original research into agroforestry, biotechnology conservation, fire management, forest economics, forest engineering, forest harvesting, forest measurement, forest protection, forest soils, remote sensing, silviculture or wood science; # to make a distinct contribution to knowledge; # to advance appropriate research methodology; # to improve communication of research findings.
Course Structure & Available Subjects:	<p>Areas of specialisation</p> <p>Forest Inventory</p> <p>Measurement of forest resources and forest products, both wood and non-wood, during harvesting operations for monitoring and quality control. The application and implementation of new technologies for the capture, processing, storage and presentation of forest resources data and information. The determination of growth and yield for ecological sustainable forest management.</p> <p>Remote Sensing and Geographic Information</p> <p>The use of aerial photography, satellite imagery and geographic information system for the collection, storage and spatial analysis for geo-referenced forest resources data and information. The integration of spatial data analysis systems with knowledge-based systems and/or simulation systems for the development of information/decision support systems for forest management.</p> <p>Biotechnology</p> <p>Genetic and biotechnological approaches to the modification of tree properties, especially wood fibre and vessel properties.</p> <p>Conservation</p> <p>The dynamics of forest ecosystems at a landscape scale, and preparation of ecologically sustainable management strategies. Understanding the processes in natural ecosystems relevant to management of rare, endangered and threatened species, and conservation of plant and animal communities. Defining biodiversity at a generic and sub-species level.</p> <p>Fire Ecology and Management</p> <p>The study of wildfire behaviour for better fire behaviour prediction and suppression strategies. Development of prescribed burning prescriptions for heathlands and forests, for ecological and fire protection purposes. Ecological effects of fire management plans at a landscape and reserve scale.</p> <p>Forest Economics</p> <p>Macro- and micro- economic modelling of factors affecting forestry and the forest industry - forest policy, social issues, education, fibre supply modelling in relation to fibre properties used in pulp and paper, end-use analysis in relation to solid wood and composite products</p>

	<p>manufacture, substitution, the role of forestry in developing economies, the environmental properties of wood.</p> <p>Farm Forestry/Agroforestry</p> <p>For farm forestry to be successful and find ready acceptance amongst landholders it must be economical and capable of yielding financial returns. Research activities in the area of farm forestry include examination of suitable species for wood grown on farms, adding value to farm grown timbers, markets for farm grown timbers, on-site conversion of wood and small scale harvesting operations suitable for farm forests. Research attempts to bring together operational and economic analysis.</p> <p>Forest Harvesting/Forest Engineering</p> <p>Research activities in the area of removal of wood from forests covers a wide range of issues. Operations analysis of harvesting systems to achieve economic efficiency and environmental goals, techniques for efficient wood handling, integrating harvesting operations with silvicultural operations, impact of harvesting systems on forest values and research into adapting existing machinery to expand the role of harvesting equipment in general forest operations.</p> <p>Forest Protection</p> <p>Study of the ecology of invertebrate and fungal pests in native forests and plantations, and identification of the triggers for damaging episodes. Possible strategies for restoring an ecological balance through chemical or biological control or changed management practices that will also maintain other forest values.</p> <p>Tree Physiology and Development</p> <p>Molecular and cellular approaches to tree growth and development. Cambial physiology and cell differentiation and wall formation during the formation of wood. Molecular biology of xylem cell and tissue development. The physiology of salinity and its effect on tree properties.</p> <p>Forest Soils</p> <p>Detailed studies of nutrient cycling in forest soils, relevant to the maintenance of biomass production in managed native stands, and manipulation of nutrients in planted stands.</p> <p>Silviculture</p> <p>The development of plantation silviculture of Eucalyptus, which is of national importance in Australia. Plantation productivity and the physiology of tree nutrition. The development of plantations for effluent reuse, and for rehabilitation of degraded sites, including saline soils.</p>
<p>Entry Requirements:</p>	<p>As is common throughout the University, entry to postgraduate degrees usually requires successful prior completion of a tertiary-level qualification, typically a Bachelor degree or equivalent. However, LFR also recognises the value of professional work experience and the circumstances of candidates who, for a variety of reasons, have not been able to enter or complete study at undergraduate degree level, but can offer evidence of TAFE qualifications and relevant professional experience.</p> <p>All applications are assessed by LFR academic staff on a case-by-case basis. In the event that an applicant cannot be offered candidature in a preferred higher degree, an alternative academic pathway may be available and offered. For example, an experienced but unqualified candidate applying for the Master of Agribusiness may be offered the opportunity to enrol in the Graduate Certificate leading to the Master of Agribusiness. All such pathways are dependent upon satisfactory completion of each successive stage.</p> <p>Please note that any offer of candidature is based on assessed academic capability and does not imply acceptance, or suitability, for a scholarship.</p> <p>Candidates completing a Graduate/Postgraduate Certificate at a satisfactory level may be eligible to enrol in a Graduate/Postgraduate Diploma or, in some cases, in a coursework Masters. Similarly, candidates completing a Graduate/Postgraduate Diploma at a satisfactory level may be eligible to enrol in a Masters degree. In all cases the candidate must:</p> <p>(a) have passed all enrolled subjects, and</p> <p>(b) achieve a satisfactory grade, expressed as the weighted average of all Graduate/Postgraduate Certificate or Graduate/Postgraduate Diploma subjects:</p> <p>> 65% + automatic eligibility to transfer</p> <p>< 65% not eligible to transfer</p>
<p>Core Participation Requirements:</p>	<p>It is the University policy to take all steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a students participation in the university's programs. This course requires all students to enrol in subjects where they must actively and safely contribute to laboratory activities and field trips. Students who feel their</p>

	disability will impact on meeting this requirement are encouraged to discuss this matter with the Subject Coordinator and Disability Liason Unit.
Graduate Attributes:	Attributes of Melbourne Research Masters Graduates Research Masters degrees at the University of Melbourne seek to develop graduates who have a capacity for defining and managing a research project characterised by originality and independence. Their training equips them for more sustained and original work at the doctoral level or for applied research positions in a wide variety of contexts.
Generic Skills:	<p>The University expects its research Masters graduates to have the following qualities and skills:</p> <ul style="list-style-type: none"> # an ability to initiate research projects and to formulate viable research questions; # a demonstrated capacity to design, conduct and report independent and original research on a closely-defined project; # an ability to manage time to maximise the quality of research; # an understanding of the major contours of international research in the research area; # a capacity for critical evaluation of relevant scholarly literature; # well-developed and flexible problem-solving abilities appropriate to the discipline; # the ability to analyse research data within a changing disciplinary environment; # the capacity to communicate effectively the results of research and scholarship by oral and written communication; # an understanding of and facility with scholarly conventions in the discipline area; # a profound respect for truth and intellectual integrity, and for the ethics of research and scholarship; # a capacity to cooperate with other researchers; # an ability to manage information effectively, including the application of computer systems and software where appropriate to the student's field of study.
Links to further information:	www.forests.unimelb.edu.au
Notes:	<p>Assessment</p> <p>Candidates are normally assessed by examination of a research thesis submitted at the conclusion of their studies. Assessment is in accordance with the procedures documented in the Masters (by Research) Generic Guidelines published by the School of Graduate Studies. www.gradstudies.unimelb.edu.au/pgstudy/MastersGenericGuidelines.pdf</p> <p>In FLFR, the Masters degree is awarded simply as a 'Pass' once all requirements of the examination process have been met. In addition, examiners are asked to select a numeric grade for the thesis for the purposes of assisting subsequent scholarship applications that FLFR Masters graduates may submit to support their study toward the degree of PhD. The numeric grade does not appear on the University testamur or on the student's official record. It is held in the Faculty Graduate Studies Office and students may request that this information is removed from their Faculty file if they so wish.</p>