MC-SCIEAR Master of Science (Earth Sciences)

Year and Campus:	2012 - Parkville
CRICOS Code:	062189B
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Graduate/Postgraduate
Duration & Credit Points:	200 credit points taken over 24 months full time. This course is available as full or part time.
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Course Overview:	The Master of Science (Earth Sciences) is a coursework masters degree incorporating a substantial research project. The Master of Science gives students the opportunity to undertake a substantive research project in a field of choice as well as a broad range of coursework subjects including a professional skills component, as a pathway to PhD study or to the workforce. The program includes collaboration between Earth Sciences/Geosciences departments from at least two other institutions (originally Monash and La Trobe universities, under our Victorian Institute of Earth and Planetary Sciences or 'VIEPS' legal agreement and partnership) expanding in the last decade to involve cooperation between several institutions (including Melbourne). Cooperation at this national level provides students from all participating institutions with the opportunity to access the best and broadest array of advanced coursework in the Earth Sciences discipline.
Objectives:	This course aims to: # equip students with discipline-specific knowledge and expertise appropriate for post-graduate research in the Earth Sciences field; # exercise critical judgement; # undertake rigorous and independent thinking;and # adopt a problem-solving approach to new and unfamiliar tasks.
Course Structure & Available Subjects:	Students must complete 200 pts including: # Discipline Core subjects (50 - 62.5 points); # Discipline Elective subjects (12.5 points); # Professional Skills subjects (12.5 - 25 points); # Research Project (125 points). Two streams are offered in the Master of Science (Earth Sciences program): the Atmospheric Science stream and the Geology stream.
Subject Options:	**Discipline Core - Atmospheric Science stream** Students must take:

Subject	Study Period Commencement:	Credit Points:
ATOC90007 Mesoscale Atmospheric Dynamics	Not offered 2012	12.50

ATOC90006 Climate Analysis and Modelling	Semester 1	12.50
ATOC90005 Atmosphere Ocean Interaction and Climate	Not offered 2012	12.50
ATOC90004 Current Topics in Atmospheric Science A	Semester 1, Semester 2	12.50

* Students with no previous background in Atmospheric Science but who satisfy the mathematics prerequisites for the 3rd-year subjects of the Atmospheric Science major are permitted to substitute one 3rd-year Atmospheric Science subject in place of any core discipline subject, after first obtaining the permission of the Masters Coordinator.

Discipline Elective - Atmospheric Science stream

Students must choose a further 12.5 points from Master of Science (Earth Sciences program: Geology stream) subjects, Professional Skills subjects or 300-level Science subjects. One elective from another stream within the Master of Science or the Master of Environment may also be approved on a case-by-case basis.

Discipline Core - Geology stream

Students must take four of the following subjects, two of which are required to correspond to their thesis topic:

Subject	Study Period Commencement:	Credit Points:
GEOL90010 Geoscience in the Field	Semester 1	12.50
EVSC90018 Hydrogeology and the Environment	Semester 1	12.50
GEOL90018 Mineralogy and Mineral Identification	Semester 2	12.50
GEOL90009 Geophysics	Semester 1	12.50
GEOL90014 Deposit Models & Mineral Exploration	Semester 1	12.50
GEOL90015 The Geology of Ore Deposits	Semester 1	12.50
GEOL90008 Digital Geoscience	Semester 1	12.50
GEOL90007 Geochemistry and Geochronology	Semester 1	12.50
GEOL90016 Surface Processes and Geodynamics	Semester 1	12.50
GEOL90006 Energy	Not offered 2012	12.50
GEOL90011 Palaeontology and Biogeochemistry	Not offered 2012	12.50
GEOL90017 Structural Geology and Geodynamics	Semester 1	12.50
GEOL90012 Current Topics in Geology A	Semester 1	12.50
GEOL90013 Current Topics in Geology B	Semester 2	12.50
GEOL90005 Hydrogeology	Semester 1	12.50

Discipline Elective - Geology stream

Students must also take a further 12.5 points of approved coursework subjects, selected either from the above subjects, professional skills subjects, or from 300-level geology subjects. Electives from another stream within the Master of Science or the Master of Environment may also be approved on a case-by-case basis.

Professional Skills

Students must take one to two subjects:

Subject	Study Period Commencement:	Credit Points:

BUSA90403 Business Tools: Money People & Processes	Semester 2	12.50
SCIE90007 E-Science	Not offered 2012	12.50
MAST90045 Systems Modelling and Simulation	Semester 1	12.50
SCIE90005 Ethics and Responsibility in Science	Semester 2	12.50
MAST90044 Thinking and Reasoning with Data	Semester 1	12.50
MAST90007 Statistics for Research Workers	June	12.50
SCIE90012 Science Communication	Semester 2	12.50

Research Project

Students enrolled in this program are required to complete a 125 point Research Project. Students will gain research experience in Earth Sciences by completing an original research project in their main field of interest. The amount of work completed in this project should be comparable to that undertaken for a published journal article, and students will be encouraged to submit their work for publication. Although the assessment weighting for the literature review may be viewed as low given the word limit, particularly when compared with the final thesis, the former is largely a 'reading topic', from which the student is expected to place their research project into a broader context. In contrast, and as noted above, the final thesis is expected to be a far more rigorous scientific document, showing an appropriate level of insight and scientific interpretation of results, and be of publishable quality. The assessment for the Research Project is: a project-related oral presentation (5%); a literature review (5%, with a word limit of 4,000 words); and a thesis (90%, with a word limit of 25,000 words).
The project will be taken over four consecutive semesters and will begin on the Monday of semester of entry (semesters 1 or 2) (indicative for 2012: Monday 27th February or Monday 23rd July) and continue for up to 88 weeks until the end of the fourth semester, minus recreation leave of between 4 and 8 weeks (22 weeks per semester over the four semesters).
For how long and at what time within the enrolment the actual period of leave is to be taken needs to be negotiated with a student's supervisor.
The Research Project will be due for submission by the end of the formal examination period of the fourth semester of enrolment if an earlier date is not specified.

Research Project (125 points)

Students may enrol in a combination of research project subjects and coursework subjects over their two years of full-time study or over their four years of part-time study as long as once the Research Project is commenced (which may not be the first semester in the case of part-time course enrolments), the consecutive enrolment requirement is met and to ensure they have completed a total of 125 points for the research project by the end of their course..
Students may need to enrol in a subject of the same credit point value more than once which is why there are multiple *Research Project* subjects of the same points value.
Some enrolment examples are available on the Melbourne Graduate School website - **http://graduate.science.unimelb.edu.au/programs/msc/earthsci.php (http://graduate.science.unimelb.edu.au/programs/msc/earthsci.php)** . Students are encouraged to review these examples to inform their ISIS enrolment.

Subject	Study Period Commencement:	Credit Points:
ERTH90022 Research Project	Semester 1, Semester 2	12.50
ERTH90023 Research Project	Semester 1, Semester 2	25
ERTH90024 Research Project	Semester 1, Semester 2	37.50
ERTH90025 Research Project	Semester 1, Semester 2	50

Entry Requirements:

An undergraduate degree with a major in Atmospheric and Ocean Sciences or Geology, with at least an H3 (65%) in the major, or equivalent.

Quotas may be applied and preference may be given to applicants with evidence of appropriate preparation or potential to undertake research. Entry is subject to the capacity of the department to provide adequate supervision in, and resources for, a research project appropriate to the interests and preparation of the individual student and may be subject to the agreement of a

	member of academic staff to supervise the project module. Selection is not automatic and, in particular, is subject to competition.
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit.
Further Study:	The Master of Science offers a pathway to a PhD.
Graduate Attributes:	Graduates will: have the ability to demonstrate advanced independent critical enquiry, analysis and reflection; have a strong sense of intellectual integrity and the ethics of scholarship; have in-depth knowledge of their specialist discipline(s); reach a high level of achievement in writing, research or project activities, problem-solving and communication; be critical and creative thinkers, with an aptitude for continued self-directed learning; be able to examine critically, synthesise and evaluate knowledge across a broad range of disciplines; have a set of flexible and transferable skills for different types of employment; be able to initiate and implement constructive change in their communities, including professions and workplaces.
Links to further information:	http://graduate.science.unimelb.edu.au/programs/msc/earthsci