

Geology

Year and Campus:	2015									
Coordinator:	Associate Professor Malcolm Wallace School of Earth Sciences									
Contact:	Email: mww@unimelb.edu.au (mailto:mww@unimelb.edu.au)									
Overview:	<p>A Geology major will provide the springboard for students entering careers or research any area in which an understanding of how the planet functions is required. This includes fundamental research into geological processes, including palaeoclimate change, geodynamics, ore deposit formation, and the environment. Careers outside research can be wide-ranging and include the minerals exploration industry, petroleum industry, environmental consulting and management. Graduates will be prepared for these pathways by developing skills in acquiring and interpreting geological information, which are crucial to being prepared to make contributions in laboratories, in consulting roles in industry, or in policy/decision making in management.</p> <p>This major will integrate knowledge from a range of disciplines from field-based studies to more theoretical aspects of rocks, minerals and their behaviour during Earth processes. Students will complete a sequence of specialist subjects as well as integrated subjects in which they develop an understanding of how these may be applied to solve outstanding questions about how the Earth works, including the competing problems of resource consumption (air, water, minerals, energy) and the environment. Students will gain experience preparing them for the workplace by participating in hands-on project work that requires careful time management and the clear communication of results.</p>									
Learning Outcomes:	<p><i>Geology Major graduates should demonstrate</i></p> <ul style="list-style-type: none"> # knowledge from a range of core disciplines in geology including structural geology, tectonics, igneous, metamorphic and sedimentary petrology, field geology, sedimentology, stratigraphy, mineralogy and paleontology by enabling students to complete a sequence of specialist and integrated subjects, in which the students develop an understanding of the application of range of methods used in geology. # skills in petrology, geological mapping, geological modeling, and critical evaluation of scientific literature, which are crucial to being prepared to make contributions in research, education or in the minerals, mining, petroleum or environmental industries. # understanding of the role of the cultures of science practiced in the investigation of geology, and specifically the role of observations, analysis, and experimental design, models of various types, theory, and mathematics. Geology graduates will also understand the role of history in this science. # appreciation of the global nature of Geology. Geology is a global and integrated science, with knowledge gained from all of the continents and oceans; # ability to apply their knowledge and skills to understanding of Earth history and climate change, at time scales ranging from decadal to billions of years as well as expertise relevant to finite natural resources like oil, gas, minerals and groundwater; # capacity to work in a team environment and an appreciation of the perspectives that cultural and discipline diversity presents, provided by working with a diverse of student cohort in group learning experiences and challenging field situations; # ability to communicate effectively with other scientists and non-scientists. 									
Structure & Available Subjects:	Completion of 50 points of study at Level 3.									
Subject Options:	<p>Both of</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>GEOL30002 Tectonics & Geodynamics</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>GEOL30003 Sedimentary Geology</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p>Plus two electives selected from</p>	Subject	Study Period Commencement:	Credit Points:	GEOL30002 Tectonics & Geodynamics	Semester 1	12.50	GEOL30003 Sedimentary Geology	Semester 2	12.50
Subject	Study Period Commencement:	Credit Points:								
GEOL30002 Tectonics & Geodynamics	Semester 1	12.50								
GEOL30003 Sedimentary Geology	Semester 2	12.50								

	Subject	Study Period Commencement:	Credit Points:
	ERTH30001 Hydrogeology/Environmental Geochemistry	Semester 1	12.50
	GEOL30004 Geochemistry & Petrogenesis	Semester 1	12.50
	GEOL30005 Applied Geophysics	Semester 2	12.50
	GEOL30006 Economic Geology	Semester 2	12.50
	GEOL30009 Advanced Field Geology	July	12.50
	SCIE30001 Science Research Project	Summer Term, Semester 1, Semester 2	12.50
	GEOL30007 Geobiology and Palaeobiology	Semester 1	12.50
Notes:	<p>The topic of the Science Research Project must be related to geology.</p> <p>This major is available to new generation Bachelor of Science students (B-SCI). It is also available to Bachelor of Science students who commenced prior to 2008. The published structure of this major includes subjects available in the current year. Pre-2008 Bachelor of Science students who completed one or more Level 3 science subjects towards this major prior to 2010 should contact the Science Student Centre for advice on appropriate subjects to complete this major.</p>		
Related Course(s):	<p>Bachelor of Arts and Bachelor of Science Bachelor of Commerce and Bachelor of Science Bachelor of Science Bachelor of Science</p>		