

GEOL90010 Geoscience in the Field

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: Sixty hours. Specific activities will depend upon selected modules, but all will include a field-based mapping component. Total Time Commitment: Not available
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 steps will be made to enhance a student's participation in the University's programs. This subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit.
Coordinator:	Assoc Prof Kevin Walsh
Contact:	Email: kevin.walsh@unimelb.edu.au (mailto:kevin.walsh@unimelb.edu.au)
Subject Overview:	This subject comprises two short course intensive modules that enable students to develop geological skills through fieldwork. Topics include geological mapping and core logging; field analysis of acid drainage chemistry, piezometer measurement and analysis in porous aquifers, and a range of geophysical techniques, including resistivity and electromagnetics.
Objectives:	<p>This subject aims to:</p> <ul style="list-style-type: none"> • develop the geological mapping skills of students; • equip students with discipline-specific knowledge and expertise appropriate for post-graduate research in the field; • equip students with discipline-specific knowledge and expertise enabling them to take their place as professional geologists in industry or government organisations. <p>Depending upon the specific modules selected, this subject will provide students with the confidence and competence to:</p> <ul style="list-style-type: none"> • recognise the importance and role of structure in the formation and modification of ore deposits; • hone their field mapping techniques; • recognise hydrothermal alteration assemblages in host-rock sequences; • conduct graphic logging of core; • analyse structural geology data; • process regional geophysical datasets; • develop strategies to interpret geology from regional aeromagnetic and gravity data; • integrate geological data into the geophysical interpretation; • conduct a geophysical interpretation; • synthesise geological, geophysical and geochemical data to remotely map buried basement rocks;

	<ul style="list-style-type: none"> • establish a regolith and landscape evolution framework; • assess and implement appropriate exploration tools (geochemical, biochemical, geophysical) within the context of the basement and cover geology and the nature of the target; • collect geological data from drill samples and manipulate these data using standard mining software; • construct a geological model of an ore body using wireframing techniques; • characterise ore textures; • identify different breccia textures; • distinguish between infill and alteration textures; • determine paragenetic sequences; • recognise key textures in drill core. • explain key concepts of regolith characteristics and evolution; • describe regolith materials, including mineralogy and geochemistry; • explain element dispersion and/or concentration in the regolith; • recognise and assess potential environmental hazards based on field measurements and observations.
Assessment:	<p>This subject comprises two short-course intensive modules, each equally weighted towards the final grade. The specific assessment details will depend upon the modules selected and students are directed to the outlines for each short-course for further details. Assessment tasks will be completed within the duration of the module, or within two weeks of its conclusion. Tasks required are broadly based upon 4,000 words equivalent for the entire subject, with a one-hour examination or 15 minute oral examination or presentation equivalent to approximately 1,000 words. Thus, a short course module may require, for example, a 15 minute presentation and 1,000 word report, or field reports, maps and cross sections equivalent of 2,000 words. In the case of one short course that may be selected for this subject, the assessment can be described as “Assessment is based on field maps, core logs and cross-sections and a short written report (four page maximum; 90%) to be handed in at the completion of the camp. 10% is based on performance and aptitude in the field including demonstration of field skills (e.g. structural measurements, rock and mineral identification, representation of data on maps), level of independence and approach to problem solving”.</p>
Prescribed Texts:	None.
Recommended Texts:	Texts will vary depending upon choice of modules.
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
Generic Skills:	<p>All modules available to this subject seek to assist students in developing their ability to:</p> <ul style="list-style-type: none"> • exercise critical judgement; • undertake rigorous and independent thinking; • adopt a problem-solving approach to new and unfamiliar tasks. <p>Depending upon which modules are selected, students will have the opportunity to:</p> <ul style="list-style-type: none"> • develop high-level written report and/or oral presentation skills; • interrogate, synthesise and interpret the published literature; • work as part of a team.
Related Course(s):	Master of Science (Earth Sciences)