

GEOL90015 The Geology of Ore Deposits

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus. Some parts of this subject may be taught off-campus.
Time Commitment:	Contact Hours: Sixty hours. Specific activities will depend upon selected modules, but will be either class-room based workshop and/or fieldbased short course intensive-style, with each module taught over a one-week intensive period of study. 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 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.
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Subject Overview:	This subject comprises two one week short-course intensive modules offering the opportunity to investigate the identification of ore minerals, textures and deposit features, sampling methods, methods of estimating tonnage and grades and reporting of resources and reserves. This unit also covers the financial evaluation of mining projects. This unit is designed to enable students to understand and identify key geological features of ore deposits. Practical classes will include the examination of typical ores and host rocks.
Learning Outcomes:	This subject aims to: # 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. Depending upon the specific modules selected, this subject will provide students with the confidence and competence to: # recognise the importance and role of structure in the formation and modification of ore deposits; # hone their field mapping techniques; # recognise alteration in host-rock sequences; # conduct graphic logging of core; # analyse structural geology data; # plan a drilling program for use in exploration, resource development and mining; # 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; # estimate a mineral resource for an ore body via block modelling;

	# evaluate the impact of geological uncertainty on ore body modelling and appreciate the public reporting requirements for mineral resource data; # characterise ore textures; # identify different breccia textures; # distinguish between infill and alteration textures; # determine paragenetic sequences; # recognize key textures in drill core; # explain key concepts of regolith characteristics and evolution; # appreciate the biophysical processes that affect the regolith, e.g., weathering, erosion and transport; # describe regolith materials, including mineralogy and geochemistry; # explain element dispersion and/or concentration in the regolith; # describe exploration methods using geochemistry and geophysics for mineralisation within and below the regolith; and # appreciate the different sampling and analytical methods for regolith, water and biota.
Assessment:	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 completion. 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 a two-hour examination, a one-hour examination and a 15 minute presentation or 1,000 word assignment, or field reports, maps and cross sections equivalent of 2,000 words. For example, 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".
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:	All modules available to this subject seek to assist students in developing their ability to: # exercise critical judgement; # undertake rigorous and independent thinking; # adopt a problem-solving approach to new and unfamiliar tasks. Depending upon which modules are selected, students will have the opportunity to: # 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)
Related Majors/Minors/Specialisations:	Earth Sciences Earth Sciences Honours Program - Earth Sciences