GEOL30005 Applied Geophysics

Credit Points:	12.5
Level:	3 (Undergraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 2 x one hour lectures per week; and three hours of practical work per week Total Time Commitment: Estimated total time commitment of 170 hours
Prerequisites:	

Subject	Study Period Commencement:	Credit Points:
ERTH10002 Understanding Planet Earth	Semester 2	12.50

Corequisites:	None
Recommended Background Knowledge:	Subjects selected from

Subject	Study Period Commencement:	Credit Points:
GEOL20001 Geology of Southeast Australia	February	12.50
GEOL20002 Structural and Metamorphic Geology	Semester 1	12.50
ERTH20001 Dangerous Earth	Semester 2	12.50
GEOL20003 Earth Composition, Minerals and Magmas	Semester 1	12.50
GEOL20004 Field Mapping and Sedimentary Geology	June	12.50

Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Dr Mark Mclean
Contact:	**Email: m.mclean@unimelb.edu.au (mailto:m.mclean@unimelb.edu.au)**
Subject Overview:	The teaching of this subject follows these principles: # The users of geophysical data (geologists, engineers, lawyers, accountants) need to know how geophysics should be done and what can be expected of the results. Geophysicists, in turn, need to know what the users will expect of them. # The basis for a common understanding between geophysicists and the users of geophysical data lies in the formalisation of the exploration process, based on the scientific method, rather than a detailed understanding of the underlying mathematics.

	# Modern computing technologies make it possible to use realistic modelling and simulation of the exploration process to teach by doing. The subject is broken into modules, each dealing with one exploration method (gravity, magnetics, resistivity and seismic) while avoiding all but the most elementary mathematics. Students learn the relevant physics at an intuitive level with the aid of a series of forward-modelling exercises presented in the context of responding to client-specific problems in the form of 'requests for bid'. Students learn by designing, conducting and interpreting geophysical surveys that yield the greatest benefit-to-cost ratio.
Learning Outcomes:	The objective of this subject is to provide students with insights into how geophysicists think, what they do, and how much to trust their conclusions.
Assessment:	Practical exercises totalling 2000 words, comprising: Geophysical interpretation/modelling exercises and accompanying report due two weeks following the relevant practical class (30%), assessment of selected practical exercises due two weeks following the relevant practical class (15%), practical assessment in the form of a short test during the semester (5%), a 2-hour written examination in the examination period (50%)
Prescribed Texts:	None
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2015/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2015/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2015/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2015/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Notes:	This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course. Previously known as 625-304 Geophysics (prior to 2010) Previously known as 625-304 Applied Geophysics (prior to 2009)
Related Majors/Minors/ Specialisations:	Geology Geology Geology Geology Geology Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED