

# GEOL30005 Applied Geophysics

<b>Credit Points:</b>	12.50
<b>Level:</b>	3 (Undergraduate)
<b>Dates &amp; Locations:</b>	2010, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus. Lectures and practical classes.
<b>Time Commitment:</b>	Contact Hours: 1 x one hour lecture per week; and three hours of practical work per week Total Time Commitment: Estimated total time commitment of 120 hours
<b>Prerequisites:</b>	One of # <b><u>625-104 Understanding Planet Earth (/view/2010/625-104)</u></b> # 625-104 The Earth, Atmosphere and Oceans (prior to 2010) # 625-102 Understanding Planet Earth (prior to 2008).
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	Subjects selected from # <b><u>625-201 Geology of Southeast Australia (/view/2010/625-201)</u></b> # <b><u>625-202 Structural and Metamorphic Geology (/view/2010/625-202)</u></b> # <b><u>625-203 Dangerous Earth (/view/2010/625-203)</u></b> # <b><u>625-222 Earth Composition, Minerals and Magmas (/view/2010/625-222)</u></b> # <b><u>625-223 Field Mapping and Sedimentary Geology (/view/2010/625-223)</u></b> # 625-223 Earth Surface Processes (prior to 2010) # 625-223 Field Geology (prior to 2009) # 625-222 Minerals and Magmas (prior to 2009) # 625-202 Earth Structure and Dynamics (prior to 2010) # 625-202 Sedimentary Basins to Mountain Belts (prior to 2009)
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	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.
<b>Coordinator:</b>	Prof Janet Hergt
<b>Contact:</b>	<b>Email: <a href="mailto:head@earthsci.unimelb.edu.au">head@earthsci.unimelb.edu.au</a> (mailto:head@earthsci.unimelb.edu.au)</b>
<b>Subject Overview:</b>	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, magnetism, 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.
<b>Objectives:</b>	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.
<b>Assessment:</b>	Practical work/problem sheets handed out in each practical (due two weeks later) totalling not more than 3500 words (25%); a 3-hour written examination in the examination period (75%).
<b>Prescribed Texts:</b>	None
<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> <li># <b>Bachelor of Arts</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-ARTS">https://handbook.unimelb.edu.au/view/2010/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-COM">https://handbook.unimelb.edu.au/view/2010/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-ENVS">https://handbook.unimelb.edu.au/view/2010/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-MUS">https://handbook.unimelb.edu.au/view/2010/B-MUS</a>)</li> </ul> <p>You should visit <b>learn more about breadth subjects</b> (<a href="http://breadth.unimelb.edu.au/breadth/info/index.html">http://breadth.unimelb.edu.au/breadth/info/index.html</a>) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Notes:</b>	<p>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.</p> <p>Previously known as 625-304 Geophysics (prior to 2010)</p> <p>Previously known as 625-304 Applied Geophysics (prior to 2009)</p>
<b>Related Course(s):</b>	Bachelor of Science
<b>Related Majors/Minors/Specialisations:</b>	Geology Geology