

# GEOL30005 Applied Geophysics

<b>Credit Points:</b>	12.5											
<b>Level:</b>	3 (Undergraduate)											
<b>Dates &amp; Locations:</b>	2016, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.											
<b>Time Commitment:</b>	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											
<b>Prerequisites:</b>	<table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>GEOL20002 Structural and Metamorphic Geology</td> <td>Semester 1</td> <td>12.5</td> </tr> </tbody> </table>			Subject	Study Period Commencement:	Credit Points:	GEOL20002 Structural and Metamorphic Geology	Semester 1	12.5			
Subject	Study Period Commencement:	Credit Points:										
GEOL20002 Structural and Metamorphic Geology	Semester 1	12.5										
<b>Corequisites:</b>	None											
<b>Recommended Background Knowledge:</b>	One of <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>GEOL20003 Earth Composition, Minerals and Magmas</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>GEOL20004 Field Mapping and Sedimentary Geology</td> <td>June</td> <td>12.50</td> </tr> </tbody> </table>			Subject	Study Period Commencement:	Credit Points:	GEOL20003 Earth Composition, Minerals and Magmas	Semester 1	12.50	GEOL20004 Field Mapping and Sedimentary Geology	June	12.50
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GEOL20004 Field Mapping and Sedimentary Geology	June	12.50										
<b>Non Allowed Subjects:</b>	None											
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt; &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>											
<b>Coordinator:</b>	Dr Mark Mclean											
<b>Contact:</b>	<b>Email: <a href="mailto:m.mclean@unimelb.edu.au">m.mclean@unimelb.edu.au</a> (mailto:m.mclean@unimelb.edu.au)</b>											
<b>Subject Overview:</b>	<p>This subject deals with methodologies for extracting geological information out of geophysical datasets. The subject mostly covers potential fields (gravity and magnetic methods) because these datasets are readily available, however it also visits seismic and electrical geophysical methods. GEOL30005 focusses on physics concepts and how they can be used to understand geology. Students work with industry standard software (eg. Geosoft - Oasis Montaj) which performs the maths in the background.</p> <p>Topics covered include maps, projection systems, datums and GPS; theory, acquisition, processing and interpretation steps involved for gravity and magnetic methods; image enhancement and qualitative interpretation techniques; quantitative style 2.5D geophysical modelling; seismic theory, acquisition, processing and how this integrates with geophysical wire-line well logging; radiometric acquisition/interpretation; and electrical geophysical techniques such as resistivity, induced polarisation, self-potential, electromagnetics and magnetotellurics.</p>											

<b>Learning Outcomes:</b>	After completing this subject, students will have acquired a basic understanding of applied geophysics, including the acquisition, processing, modelling and interpretation steps involved for gravity, magnetic, seismic and electrical methods.
<b>Assessment:</b>	12 equally weighted weeks of practical exercises, consisting of graphical interpretations/reports or short practical tests, due throughout the semester totalling 2000 words (50%), 2-hour written examination in the examination period (50%) Practical work will include geophysical interpretation and modelling exercises. Each assessment task will be due two weeks following the relevant practical class which it is linked to.
<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/2016/B-ARTS">https://handbook.unimelb.edu.au/view/2016/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-COM">https://handbook.unimelb.edu.au/view/2016/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-ENVS">https://handbook.unimelb.edu.au/view/2016/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-MUS">https://handbook.unimelb.edu.au/view/2016/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>	Master of Geoscience
<b>Related Majors/Minors/Specialisations:</b>	<p>Geology  Geology  Geology  Geology  Geology  Science-credited subjects - new generation B-SCI and B-ENG.  Selective subjects for B-BMED</p>