

# GEOL30002 Tectonics & Geodynamics

Credit Points:	12.5																	
Level:	3 (Undergraduate)																	
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.																	
Time Commitment:	Contact Hours: 1 x two hour lecture per week; 1 x two hour of practical class per week for six weeks; and five days of fieldwork Total Time Commitment: Estimated total time commitment of 170 hours																	
Prerequisites:	<table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>GEOL20002 Structural and Metamorphic Geology</td><td>Semester 1</td><td>12.50</td></tr></table>			Subject	Study Period Commencement:	Credit Points:	GEOL20002 Structural and Metamorphic Geology	Semester 1	12.50									
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Corequisites:	None																	
Recommended Background Knowledge:	Subjects selected from: <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><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><tr><td>ERTH20001 Dangerous Earth</td><td>Semester 2</td><td>12.50</td></tr><tr><td>GEOL20001 Geology of Southeast Australia</td><td>February</td><td>12.50</td></tr></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	ERTH20001 Dangerous Earth	Semester 2	12.50	GEOL20001 Geology of Southeast Australia	February	12.50
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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 Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>																	
Coordinator:	Dr Steven Boger																	
Contact:	Email: <a href="mailto:sdboger@unimelb.edu.au">sdboger@unimelb.edu.au</a> (mailto:sdboger@unimelb.edu.au)																	
Subject Overview:	This subject covers geological processes involved in large-scale tectonics and introduces advanced topics in structural and metamorphic geology. Topics include the structure and composition of the Earth; plates defined in terms of the thermal and rheological structure of the outer part of the Earth; isostasy; stress and strain in the crust and lithosphere; structural and metamorphic processes in orogenic belts, their origin and their relationship to continental amalgamation and fragmentation; intraplate deformation; deformation mechanisms; shear zone processes; the analysis of poly-deformed terranes and high grade metamorphic processes including partial melting and melt loss.																	
Learning Outcomes:	On completion of this subject, students should comprehend advanced geometrical techniques in structural geology, and the controls on the first-order features of the Earth. Students will also understand how the plates that make up the Earth's surface are defined by large-scale																	

	thermal and rheological properties of the Earth. They will have developed the skills in laboratory geology that are relevant to the understanding of deformed rocks, and the skills to draw together observations from petrology and structural geology to interpret Earth processes. They will appreciate how the processes that occur within and between plates can be interpreted in terms of the stress and strain in the outer parts of the Earth.
<b>Assessment:</b>	A written field report of up to 1500 words due four weeks after the field exercise(20%); assessment of selected practical exercises totalling not more than 1000 words due two weeks following the practical class (15%); a survey of a geodynamics literature topic of up to 3000 words due in week 10 of the semester (25%); a 2-hour written examination in the examination period (40%). Hurdle requirement: students must make an oral presentation of their geodynamics literature survey topic in the practical period during the last two weeks of the semester.
<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/2015/B-ARTS">https://handbook.unimelb.edu.au/view/2015/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2015/B-COM">https://handbook.unimelb.edu.au/view/2015/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2015/B-ENVS">https://handbook.unimelb.edu.au/view/2015/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2015/B-MUS">https://handbook.unimelb.edu.au/view/2015/B-MUS</a>)</li> </ul> <p>You should visit <b><a href="http://breadth.unimelb.edu.au/breadth/info/index.html">learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)</a></b> 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 625-301 Structural Geology and Geodynamics (prior to 2010)</p> <p>Special Requirements: Geological hammer, hand lens and magnet. Students should consult the Earth Sciences web-site for dates, charges for excursions, accommodation and food and other information including safety requirements.</p> <p>Costs: Costs will be levied for fieldwork components. Details will be available on the school webpage prior to commencement of the semester</p>
<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>
<b>Related Breadth Track(s):</b>	Earth's Structure