

## GEOL30002 Tectonics & Geodynamics

<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: March, Parkville - Taught on campus. Lectures, practical classes and fieldwork
<b>Time Commitment:</b>	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 120 hours
<b>Prerequisites:</b>	One of # <b>625-202 Structural and Metamorphic Geology (/view/2010/625-202)</b> # 625-202 Earth Structure and Dynamics (prior to 2010) # 625-202 Sedimentary Basins to Mountain Belts (prior to 2009).
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	Subjects selected from # <b>625-201 Geology of Southeast Australia (/view/2010/625-201)</b> # <b>625-222 Earth Composition, Minerals and Magmas (/view/2010/625-222)</b> # <b>625-203 Dangerous Earth (/view/2010/625-203)</b> # <b>625-223 Field Mapping and Sedimentary Geology (/view/2010/625-223)</b> # 625-223 Earth Surface Processes (prior to 2010) # 625-223 Field Geology (prior to 2009) # 625-222 Minerals and Magmas (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. This subject requires all students to actively and safely participate in laboratory activities and fieldwork. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit.
<b>Coordinator:</b>	Dr Sandra McLaren
<b>Contact:</b>	<b>Email: <a href="mailto:mclarens@unimelb.edu.au">mclarens@unimelb.edu.au</a> (mailto:mclarens@unimelb.edu.au)</b>
<b>Subject Overview:</b>	This subject covers topics in geological processes involved in large-scale tectonics. 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; the origin and processes in mobile belts and their relationship to continental amalgamation and fragmentation; intraplate deformation; and convergent, divergent and transform plate boundaries.
<b>Objectives:</b>	On completion of this subject, students should comprehend the geometrical techniques of structural geology, how the plates that make up the Earth's surface are defined by large-scale thermal and rheological properties of the Earth, and the tectonic processes that may affect metamorphic rocks and ore bodies. 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 in the last week before the mid-semester break and in the last week of semester (20%); a survey of a geodynamics literature topic of up to 3000 words due in week 10 of the semester (20%); a 2-hour written examination in the examination period (40%). Hurdle requirement: students must make an oral presentation of their geodynamics literature survey 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/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 625-301 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 Course(s):</b>	Bachelor of Science
<b>Related Majors/Minors/Specialisations:</b>	Geology Geology