

## GEOL90006 Energy

<b>Credit Points:</b>	12.5
<b>Level:</b>	9 (Graduate/Postgraduate)
<b>Dates &amp; Locations:</b>	This subject is not offered in 2015.
<b>Time Commitment:</b>	Contact Hours: Sixty hours. Specific activities will depend upon selected modules, but will be either class-room based workshop and/or fieldbased short course intensive-style, with each module taught as a one-week intensive course. Total Time Commitment: 170 hours
<b>Prerequisites:</b>	None
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<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. 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>Contact:</b>	Melbourne Graduate School of Science Faculty of Science The University of Melbourne Tel:+61 3 8344 6128 Fax:+61 3 8344 3351 Web: <a href="http://graduate.science.unimelb.edu.au/">http://graduate.science.unimelb.edu.au/</a> ( <a href="http://graduate.science.unimelb.edu.au/">http://graduate.science.unimelb.edu.au/</a> )
<b>Subject Overview:</b>	Geothermal energy is the heat that occurs naturally in the Earth's interior. That heat can be extracted and utilised for applications ranging from domestic heating/cooling to commercial electricity generation. This subject will cover the origins of the Earth's internal heat, different categories of geothermal energy, current global and Australian exploitation of geothermal energy, geothermal versus other renewable versus conventional energy sources, geological conditions conducive to geothermal energy, exploration for geothermal energy, economic and environmental limitations on exploitation, applications in heating, aquaculture, greenhouses, electricity generation, and the industry in Australia.
<b>Learning Outcomes:</b>	This subject will provide students with sufficient background to: <ul style="list-style-type: none"> <li># determine the information required and techniques used to assess the value of particular geological sites for geothermal energy exploitation;</li> <li># describe the origins of geothermal heat;</li> <li># explain the geological conditions conducive to its economic exploitation;</li> <li># outline exploration techniques;</li> <li># describe a number of specific applications, and the place of geothermal in an overall framework of sustainable development.</li> </ul>
<b>Assessment:</b>	This subject comprises two short-course intensive modules, each equally weighted towards the final grade. The specific assessment details will depend upon the modules selected and students are directed to the outlines for each short-course for further details. Assessment tasks will be completed within the duration of the module, or within two weeks of its conclusion. Tasks required are broadly based upon 4,000 words equivalent for the entire subject, with a one-hour examination or 15 minute oral examination or presentation equivalent to approximately 1,000 words. Thus, a short course module may require a two-hour examination, a one-hour examination and a 15 minute presentation or 1,000 word assignment, or field reports, maps and cross sections equivalent of 2,000 words. For example, in the case of one short course that may

	be selected for this subject, the assessment can be described as follows: "The short-course manual provided contains embedded questions to be answered during class and assessed prior to completion of the module (50%). There will also be a short assignment associated with the field trip (of no more than 1,000 words; 50%)".
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	Texts will vary depending upon choice of modules.
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<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>Generic Skills:</b>	<p>All modules available to this subject seek to assist students in developing their ability to:</p> <ul style="list-style-type: none"> <li># exercise critical judgement;</li> <li># undertake rigorous and independent thinking;</li> <li># adopt a problem-solving approach to new and unfamiliar tasks.</li> </ul> <p>Depending upon which modules are selected, students will have the opportunity to:</p> <ul style="list-style-type: none"> <li># develop high-level written report and/or oral presentation skills;</li> <li># interrogate, synthesise and interpret the published literature;</li> <li># work as part of a team.</li> </ul>
<b>Related Course(s):</b>	Master of Science (Earth Sciences)
<b>Related Majors/Minors/Specialisations:</b>	Earth Sciences Earth Sciences Honours Program - Earth Sciences