# ENEN90033 Solar Energy

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| **Credit Points:** | 12.50 |
| **Level:** | 9 (Graduate/Postgraduate) |
| **Dates & Locations:** | 2010, Parkville<br>This subject commences in the following study period/s:<br>Semester 1, Parkville - Taught on campus. |
| **Time Commitment:** | Contact Hours: Lectures 2 hours/week; tutorials 1 hour/week. Total 36 hours Total Time Commitment: 120 hours for the semester |
| **Prerequisites:** | None |
| **Corequisites:** | None |
| **Recommended Background Knowledge:** | None |
| **Non Allowed Subjects:** | 421-711 has been replaced by this subject. |

| Subject | Study Period Commencement: | Credit Points: |
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| 421-711 Solar Energy | Not offered 2010 | |

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| **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: http://www.services.unimelb.edu.au/disability/ |
| **Coordinator:** | Dr Lu Aye |
| **Contact:** | Melbourne School of Engineering<br>Ground Floor<br>Old Engineering Building #173<br>The University of Melbourne VIC 3010 AUSTRALIA<br>General telephone enquiries<br>+ 61 3 8344 6703<br>+ 61 3 8344 6507<br>Facsimiles<br>+ 61 3 9349 2182<br>+ 61 3 8344 7707<br>Email: **eng-info@unimelb.edu.au (mailto:eng-info@unimelb.edu.au)** |
| **Subject Overview:** | In the this subject students will learn across a range of topics related to solar energy including: nature and availability of solar energy; radiation estimations and measuring instruments; selected heat transfer topics; radiative properties and thermal transport properties of opaque materials and glazing; materials for solar energy utilisation; flat-plate and concentrating collectors; energy storage; design methods and performance estimation; solar component and solar system operational characteristics; solar process economics; practical applications of solar energy: solar water heating, building heating, solar cooling, industrial process heat, solar thermal power systems and solar ponds; solar devices for developing countries; desalination, photovoltaics and solar water pumping. |
| **Objectives:** | On successful completion of this subject students should be able to:<br># Identify the potential and limitations of solar energy as an alternative source of energy<br># Analyse the distribution and variability of solar energy availability, and the limitations of solar energy devices<br># Create solar energy system designs for sustainable energy solutions |

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| **Assessment:** | Two-hour end of semester examination (50%)2000 word report due at the end of semester (30%)One group task, 1000 words per person, due mid semester (20%) |
| **Prescribed Texts:** | None |
| **Breadth Options:** | This subject is not available as a breadth subject. |
| **Fees Information:** | Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees |
| **Generic Skills:** | # Ability to utilise a systems approach to complex problems and to design and operational performance<br># Proficiency in engineering design<br># Ability to manage information and documentation<br># Capacity for creativity and innovation<br># Ability to function effectively as an individual and in multidisciplinary and multicultural teams, as a team leader or manager as well as an effective team member |
| **Related Course(s):** | Master of Energy Studies<br>Master of Engineering Structures<br>Master of Engineering Structures<br>Master of Environmental Engineering<br>Master of Environmental Engineering<br>Master of Water Resource Management<br>Master of Water Resource Management |