

ENEN90033 Solar Energy

| | |
|--|---|
| Credit Points: | 12.50 |
| Level: | 9 (Graduate/Postgraduate) |
| Dates & Locations: | This subject is not offered in 2013. |
| Time Commitment: | Contact Hours: 36 hours, comprising of two hours of lectures and one 1-hour tutorial per week Total Time Commitment: 120 hours |
| Prerequisites: | None |
| Corequisites: | None |
| Recommended Background Knowledge: | None |
| Non Allowed Subjects: | None |
| Core Participation Requirements: | <p><p>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.</p> <p>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: http://services.unimelb.edu.au/disability</p></p> |
| Contact: | Assoc Prof Lu Aye l.aye@unimelb.edu.au (mailto:l.aye@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: <ul style="list-style-type: none"> # Identify the potential and limitations of solar energy as an alternative source of energy # Analyse the distribution and variability of solar energy availability, and the limitations of solar energy devices # Create solar energy system designs for sustainable energy solutions |
| Assessment: | One 3-hour open-book examination, end of semester (50%) One 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: | <ul style="list-style-type: none"> # Ability to utilise a systems approach to complex problems, design and operational performance # Proficiency in engineering design # Ability to manage information and documentation # Capacity for creativity and innovation # 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): | <p> Bachelor of Engineering (Civil Engineering) Master of Energy Systems Master of Engineering Structures Master of Engineering Structures Master of Environmental Engineering Master of Environmental Engineering Master of Philosophy - Engineering Ph.D.- Engineering </p> |
| Related Majors/Minors/ Specialisations: | <p> Energy Efficiency Modelling and Implementation Energy Studies Master of Engineering (Civil) Master of Engineering (Environmental) Master of Engineering (Geomatics) </p> |