

ENEN90033 Solar Energy

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2011.
Time Commitment:	Contact Hours: 36 hours (Lectures: 3 hours per week. Tutorials: 1 hour per week) per semester Total Time Commitment: 120 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
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: http://www.services.unimelb.edu.au/disability/
Contact:	Dr 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):	Master of Engineering Structures Master of Engineering Structures Master of Environmental Engineering Master of Environmental Engineering
Related Majors/Minors/ Specialisations:	Energy Efficiency Modelling and Implementation Energy Studies Master of Engineering (Civil) Master of Engineering (Environmental) Master of Engineering (Geomatics)