

# ENEN90005 Environmental Management ISO 14000

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| <b>Credit Points:</b>                    | 12.50  |
| <b>Level:</b>                            | 9 (Graduate/Postgraduate)  |
| <b>Dates &amp; Locations:</b>            | This subject is not offered in 2014. Includes two compulsory site visits and some weekend activities   |
| <b>Time Commitment:</b>                  | Contact Hours: 24 hours of lectures and 12 hours of workshops; one site visit Total Time Commitment: 200 hours   |
| <b>Prerequisites:</b>                    | None   |
| <b>Corequisites:</b>                     | None   |
| <b>Recommended Background Knowledge:</b> | Admission to post graduate studies in engineering or equivalent  |
| <b>Non Allowed Subjects:</b>             | None   |
| <b>Core Participation Requirements:</b>  | <p>&lt;p&gt;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.&lt;/p&gt;         &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>  |
| <b>Contact:</b>                          | Associate Professor Graham Moore<br><a href="mailto:grahamam@unimelb.edu.au">grahamam@unimelb.edu.au</a> (mailto:grahamam@unimelb.edu.au)  |
| <b>Subject Overview:</b>                 | <p><b>AIMS</b><br/>         Environmental Management ISO 14000 aims to provide students with the skills and knowledge to apply and help develop environmental management systems. The subject builds on the student's knowledge of risk management, such as that gained in CVEN30008 Risk Analysis, and develops their ability to identify, assess and manage environmental risk that arises from the construction and operation of manufacturing or infrastructure facilities. It also builds on knowledge about sustainability such as is learnt in the subject CVEN90043 Sustainable Infrastructure Engineering, and other management systems such as those learnt in CVEN90045 Engineering Project Implementation.</p> <p>At the conclusion of the subject, it is expected that students should be able to work under supervision in a capacity where they are responsible for the maintenance of an existing environmental management system, or assist in developing a new system. They should also be in a position to conduct simple internal audits and assist in more complex internal audits. The subject does not provide students with sufficient practice and skills to immediately become an accredited auditor in Australia.</p> <p><b>INDICATIVE CONTENT</b><br/>         Environmental Management ISO 14000 will cover the following related areas of study: the history of EMS from Demming Wheel to ISO 14000 series; the elements of an EMS; systems audit and review and gap analysis; legal requirements, due diligence document control, liability and ISO 9000 review; regulation and accreditation; community consultation; emerging issues in environmental management.</p> |
| <b>Learning Outcomes:</b>                | <p><b>INTENDED LEARNING OUTCOMES (ILO)</b><br/>         Having completed this subject the student is expected to:</p> <ol style="list-style-type: none"> <li>1 Describe the role of the ISO 14000 series of standards in industry</li> <li>2 Describe, in detail, the elements of the ISO 14001 and ISO 14004 standards</li> </ol>   |

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|  | <p>3 Identify production processes and likely risks to the environment embodied in such processes</p> <p>4 Use risk management standards to review and prioritise the environmental risks of a facility</p> <p>5 Conduct an environmental performance audit of an industry</p> <p>6 Conduct an EMS systems audit of a commercial operation</p> <p>7 Write an EMS manual for particular business</p> <p>8 Prepare an environmental emergency response manual</p>   |
| <b>Assessment:</b>                             | A computer-based exam (500 words equivalent) on the elements of ISO 14001 in the first 3 weeks of semester (5%). This assessment addresses Intended Learning Outcomes (ILOs) 1 and 2 Conduct of a performance audit (1500 words) on an industrial process, due mid semester (30%). Addresses ILOs 3, 4 and 5 Conduct of an EMS audit (500 words equivalent) on a commercial operation, due around week 8 (20%). Addresses ILO 6 Production of an EMS ISO 14001 manual (3000 words) for a commercial operation, due at the end of semester (45%). Addresses ILOs 7 and 8.  |
| <b>Prescribed Texts:</b>                       | None  |
| <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>                         | <ul style="list-style-type: none"> <li># Ability to select and apply international engineering standards to a process</li> <li># Ability to design and implement a systems-based approach to managing risks</li> <li># Ability to apply knowledge of basic risk engineering fundamentals</li> <li># In-depth technical competence in both environmental and risk engineering disciplines</li> <li># Ability to undertake problem identification, formulation and solution in respect to risk control</li> <li># Capacity for independent critical thought, rational inquiry and self-directed learning</li> <li># Effective risk communication with senior management, risk engineers team and the community</li> </ul>   |
| <b>Notes:</b>                                  | <p><b>Safety boots, high visibility vests and safety spectacles are required for site visits.</b></p> <p><b>LEARNING AND TEACHING METHODS</b></p> <p>The key learning method used in the subject is build knowledge and understanding around the site chosen for the visits and assessment. Intensive workshops and lectures are used to highlight the main issues. These are concentrated in first 8 weeks of the semester to allow this information to be applied the main assignment.</p> <p><b>INDICATIVE KEY LEARNING RESOURCES</b></p> <p>Standards Australia (2004) AS/NZS ISO 14001:2004 Environmental management systems - Requirements with guidance for use. Sydney.</p> <p>Standards Australia (2004) AS/NZS ISO 14004:2004 Environmental management systems - General guidelines on principles, systems and support techniques. Sydney.</p> <p>Standards Australia (2009) AS/NZS ISO 31000:2009 Risk management - Principles and guidelines. Sydney.</p> <p><b>CAREERS / INDUSTRY LINKS</b></p> <p>This subject uses a real industry site as the basis for the learning and assessment. Students visit the site and undertake preparatory activities for writing components of an environmental management system for the site. The subject also invites experienced EMS auditors and consultants to assist in teaching activities and assessment.</p> |
| <b>Related Course(s):</b>                      | <p>Master of Engineering Project Management</p> <p>Master of Engineering Project Management</p> <p>Master of Environmental Engineering</p> <p>Master of Environmental Engineering</p> <p>Master of Philosophy - Engineering</p> <p>Ph.D.- Engineering</p>   |
| <b>Related Majors/Minors/ Specialisations:</b> | <p>B-ENG Civil Engineering stream</p> <p>Climate Change</p> <p>Climate Change</p> <p>Energy Studies</p> <p>Energy Studies</p> <p>Environmental Science</p>  |

Environmental Science  
Governance, Policy and Communication  
Governance, Policy and Communication  
Master of Engineering (Civil)  
Master of Engineering (Environmental)  
Master of Engineering (Geomatics)  
Tailored Specialisation  
Tailored Specialisation  
Waste Management  
Waste Management