

ABPL90086 Environmental Systems

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2013, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 1 x 2 hours of lectures per week; 1 x 2 hours of tutorials per week Total Time Commitment: 120 hours
Prerequisites:	Admission to the Melbourne School of Design or written permission from the subject coordinator.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	702-465 (ABPL40017) Environmental Systems
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:	<p>Environments and Design Student Centre Ground Floor, Baldwin Spencer (building 113)</p> <p><i>Enquiries</i> Phone: 13 MELB (13 6352) Website: http://www.msd.unimelb.edu.au (http://www.msd.unimelb.edu.au)</p>
Subject Overview:	<p>This subject provides a coverage of the different systems significant in the design of commercial and institutional buildings, with an emphasis on highrise buildings. The building is described in terms of 3 interlocking systems: human, mechanical and natural systems.</p> <p>Human Systems</p> <ul style="list-style-type: none"> • Concepts of environmental comfort: heat, light and sound • Occupational Health, Safety and Environment • Post-Occupancy Evaluation <p>Mechanical Systems</p> <ul style="list-style-type: none"> • energy efficiency, alternative energy sources and energy management • active solar heating and cooling systems; • electrical, telecommunications, transportation and building management systems; • air-conditioning system designs; refrigeration, heating and air handling plants; • façade design, natural ventilation and mixed mode systems; • displacement ventilation, evaporative cooling and radiant cooling systems; • special servicing conditions including hospitals, auditoria, industrial buildings, commercial • acoustical design and noise control <p>Natural Systems</p> <ul style="list-style-type: none"> • passive design techniques for highrise buildings • waste and water treatment techniques, WSUD (water sensitive urban design) • green infrastructure and ecological services • integrated greenery – green roofs and vertical greenery <p>Sustainable building standards like LEED and Green Star and NABERS will also be introduced and used in the discourse of the lectures.</p>

Objectives:	To provide an understanding of the integration of mechanical systems in the context of technical, environmental and human considerations. The student will also have a broad introduction to the key areas of concern in the sustainable design of commercial and institutional buildings.
Assessment:	Continuous assessment, leading to a submission or presentation every 3 weeks. The assignments may involve class presentations, discussions of selected topics, short exercises and essays, and groupwork. 3 such assignments due 3rd, 6th week and 9th week – each valued at 20%, (60% total). Written test due end of semester (40%).
Prescribed Texts:	Szokolay, S. V. Introduction to architectural science: the basis of sustainable design. London : Elsevier/Architectural Press, 2008. Gonçalves, Joana Carla Soares. The Environmental Performance of Tall Buildings. London: Earthscan, 2010. Kibert, Charles J. Sustainable Construction: Green Building Design and Delivery. 2nd ed. Hoboken, N.J.: Wiley, 2008.
Recommended Texts:	Parlour, R. P. <i>Building services: a guide to integrated design & engineering for architects</i> . Pymble, N.S.W: Integral Publishing, 2000.
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:	On completion of the subject students should have developed the following skills and capabilities: <ul style="list-style-type: none"> • Knowledge of technical terms and ability to communicate with specialized consultants in the sustainable design of commercial and institutional buildings • An understanding of sustainability issues relating to the work of specialized consultants • An understanding of integrated environmental systems in the design of commercial and institutional buildings
Related Course(s):	Bachelor of Property and Construction Master of Architecture Master of Architecture Master of Construction Management Master of Design (Urban Design) Master of Property Master of Property Master of Urban Design
Related Majors/Minors/Specialisations:	Building Building Systems and Trade Specialties Energy Efficiency Modelling and Implementation Melbourne School of Design multidisciplinary elective subjects (without prerequisites) Research and Development