

ABPL90086 Environmental Systems

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, 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: 170 hours
Prerequisites:	Admission into a course at the Melbourne School of Design.
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>
Coordinator:	Mr Christopher Jensen
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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

	Sustainable building standards like LEED and Green Star and NABERS will also be introduced and used in the discourse of the lectures.
Learning Outcomes:	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:	<ul style="list-style-type: none"> • Professional report equivalent to 3000 words (60%) simulating an ESD report for a new building proposal, providing a technical understanding of the green building design process, including implementation issues, through individual and group work. The report will be submitted in the following stages: - Environmental (15%) due in week 4.- Social and Economic (15%) due in week 7.- Final report outlining overall recommendation for the building (30%) due in week 10 • Class presentation of 10 minutes (10%) held in week 10, outlining the overall recommendations for the building analysed in the ESD report. • Assignment equivalent to 2000 words (30%) due in week 12, focussing on the ability to think creatively and research and evaluate the traditional and alternate methodologies that drives social, environmental and economic outcomes.
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:	<p>On completion of the subject students should have developed the following skills and capabilities:</p> <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 Urban Design
Related Majors/Minors/Specialisations:	200 point Master of Architecture 300 point Master of Architecture 300 point Master of Construction Management Melbourne School of Design multidisciplinary elective subjects Research and Development Tailored Specialisation Tailored Specialisation