

EVSC90025 Water Sensitive Urban Design

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Burnley This subject commences in the following study period/s: February, Burnley - Taught on campus.
Time Commitment:	Contact Hours: Teaching takes place over 6 days for a total of 48 hours (20 hours lectures, 20 hours workshops, 8 hours excursion) Total Time Commitment: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	An understanding of at least one of hydrology, urban horticulture, landscape architecture, planning, architecture, catchment management, urban landscape management or civil engineering. Students should be comfortable with basic computations (in Excel or equivalent).
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>
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Subject Overview:	<p>There is increasing recognition around the world of the threats facing urban environments and their water resources. In many cities water demand is approaching or exceeding limits of sustainability, leading to increasing interest in alternative water sources, such as stormwater harvesting, wastewater recycling and desalination. At the same time, receiving environments such as urban streams and bays are threatened by pollution and erosion from stormwater runoff, or eutrophication due to discharge of poorly-treated wastewater. There is also increasing recognition of the importance of water in the urban landscape, and of its role in the welfare and health of humans.</p> <p>The concept of "water sensitive urban design" (WSUD), also known as Integrated Urban Water Management (IUWM) has developed in response to these changes. It aims to better integrate water into the urban landscape, improving the sustainability and liveability of cities (for example through the sustaining of health urban vegetation), while securing adequate resources for growing cities.</p> <p>This subject reflects the integration inherent in WSUD. The course will teach you about the individual urban water cycle components (water supply, wastewater, stormwater, groundwater), but will primary focus on their interactions and integration, and particularly their interaction with the built and natural environment.</p> <p>The subject includes a mix of lectures and project-based learning, including a major project (broken up into stages throughout the semester), a full-day excursion and workshops involving leading WSUD experts from public and private industry. The subject will cover:</p> <ol style="list-style-type: none"> 1 An introduction to WSUD (its principles, objectives, context within other urban planning and sustainability policy & practice) in developed and developing countries

	<ol style="list-style-type: none"> 2 Water in the urban landscape, the urban water cycle and its component characteristics 3 Social, environmental and economic impacts of urban water management 4 Structural tools and techniques (conceptual design, operation, maintenance) 5 Non-structural tools and techniques 6 Choice of scales 7 Analysis methods (water balance calculations, water end-use analysis) 8 Lifecycle cost analysis and multi-criteria evaluation frameworks 9 Design tools and software (e.g. MUSIC, Urban Developer, House Water Expert) 10 Institutional and implementation issues 11 Integration between water and other urban design elements
Learning Outcomes:	<p>To give students expertise in the concepts and techniques of <i>water sensitive urban design (WSUD)</i> and to allow them to apply these techniques to integrate the management of water into the urban landscape. The subject thus aims to benefit students across a broad range of disciplines, including environmental science, landscape architecture, architecture, urban planning, geography, urban horticulture, forest science and ecology.</p> <p>On successful completion of this subject, students should be able to:</p> <ol style="list-style-type: none"> 1 Understand and analyse water in the urban landscape and the various components of the urban water cycle, including their interactions. 2 Apply understanding of scale to select optimal WSUD systems at different scales. 3 Assess and choose a range of structural and non-structural techniques for WSUD, including analysis of performance using industry-standard modelling tools. 4 Design a range of WSUD scenarios for a given urban layout. 5 Discuss and critique implementation and institutional issues relating to WSUD, including maintenance and policy. 6 Work collaboratively in teams with people from other disciplines, in order to ensure multi-disciplinary outcomes.
Assessment:	<p>An individual literature review on Water Sensitive Urban Design of 1000 words due in week 1 of semester 1 (20%). Group work: An Initial concept report of 3000 words for group of 3; equivalent to 1000 words/student, due in Week 9 of semester 1 (20%). Group work: A Final design group report of 7500 words for a group of 3; equivalent to 2500 words/person, due in Week 9 of semester 1 (50%). Group work: A presentation of the final concept design, 15 minutes for group of 3; equivalent to 500 words/student, due in Week 9 of semester 1 (10%).</p>
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
Related Course(s):	<p>Graduate Diploma in Urban Horticulture Master of Environmental Engineering Master of Urban Horticulture</p>
Related Majors/Minors/Specialisations:	<p>Integrated Water Catchment Management Master of Engineering (Civil) Master of Engineering (Environmental) Sustainable Cities, Sustainable Regions Tailored Specialisation Waste Management</p>