CVEN90019 Sustainable Water Resources Systems

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2011. Subject material is delivered intensively during the first six weeks of semester.
Time Commitment:	Contact Hours: 36 hours including lectures, syndicate exercises and tutorials Total Time Commitment: 120 hours
Prerequisites:	Admission to post graduate studies in engineering or related discipline OR

Subject	Study Period Commencement:	Credit Points:
CVEN30010 Systems Modelling and Design	Not offered 2011	12.50

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:	Assoc Prof Hector Malano **h.malano@unimelb.edu.au (mailto:h.malano@unimelb.edu.au)**
Subject Overview:	This subject aims to analyse the key concepts underpinning the sustainable use of water within catchments and river basins. The subject focuses on the analysis of complex water resource systems that involve multiple sources of water supply and multiple water uses including agriculture, urban, industrial, recreation and the environment. Various systems of allocating water between multiple supplies and demands. Water accounting in time and space. The balance between economic and environmental uses of water. Topics include: # Water resource planning and management # Water supply # Wastewater and drainage # Integrated water resources management -river catchments and basins # Environmental demand # Water resource economics # Principles of water resource modelling: optimisation and simulation
Objectives:	On completion of this subject students should be able to: # Identify and describe the physical elements of a water resource system and its interactions # Identify and describe the principles of allocation between different uses under conditions of scarcity # Identify and describe the key elements involved in modelling water resource systems # Describe and apply the principles and applications of water resource accounting # Describe and apply the concept of integrated water resources management # Identify the economic, environmental and social factors involved in the sustainable development and management of water resources

Assessment:	One group assignment (3000 words) (35%) Four x Group critiques (300 words each) (10%)Four x Case study reports (500 words each) (15%)One Individual assignment (4000 words) (40%)
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:	# Ability to undertake problem identification, formulation, and solution # Understanding of social, cultural, global, and environmental responsibilities and the need to employ principles of sustainable development # Ability to utilise a systems approach to complex problems and to design and operational performance # Ability to communicate effectively, with the engineering team and with the community at large # 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 Environmental Engineering Master of Environmental Engineering Postgraduate Certificate in Engineering
Related Majors/Minors/ Specialisations:	Development Integrated Water Catchment Management Master of Engineering (Civil) Master of Engineering (Environmental) Master of Engineering (Geomatics) Sustainable Cities, Sustainable Regions Sustainable Forests