625-608 Hydrogeology

Credit Points:	12.500
Level:	Graduate/Postgraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Summer Term, - Taught on campus. Lectures and practical sessions, plus one weekend Field Excursion.
Time Commitment:	Total Time Commitment: The subject will be taught in intensive mode from 4 - 17 February 2008.
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. This subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit.
Coordinator:	Dr Charles Lawrence
Subject Overview:	This subject is the introductory subject for the hydrogeology stream of the Master of Environment program at the University of Melbourne. It is also the entry subject for groundwater for students enrolled in other water or catchment focussed studies. In this subject we focus on natural groundwater systems, providing students with an introduction to groundwater flow in steady state and transient conditions; groundwater resource development; groundwater recharge processes; groundwater quality and chemistry; and the role of stable and radiogenic isotopes in evaluating groundwater flow systems. The material is consolidated through exercises and case studies showing the importance of integrating both physical and chemical hydrogeology. A field excursion at the end of the course allows students to see the role that groundwater plays in a variety of settings including; mine sites, salt and freshwater lakes, municipal pumping and mineral springs. The first week of the subject is co-taught with Honours students in the VIEPS Introduction to Hydrogeology subject. Subject duration and assessment is different. The second week is co-taught with Honours students in the VIEPS Advanced Hydrogeology subject. Again, subject duration and assessment varies.
Assessment:	Assessed work during practicals = 20% Literature review assignment = 15% Question and Answer during Field Excursion = 5% 1.5 hour final exam = 60% Questions in this exam may cover material presented throughout the entire course and the excursion, and students will need to integrate material from different sections of the course. Calculators will be permitted in the exam.
Prescribed Texts:	None
Recommended Texts:	The following books are available in the Earth Sciences library; however, as postgraduate students in hydrogeology, students may wish to purchase at least one of these books. 1 *Domenico P.A. and Schwartz F.W., 1998 *hysical and chemical hydrogeology*. J Wiley 2 *Fetter C.W., 1988 *Applied Hydrogeology*. Merrill 3 *Freeze R.A. and Cherry J., J.A.1979 *Groundwater* Prentice Hall 4 Hem J.D., 1992 *Study and interpretation of the chemical characteristics of natural waters*. U. S. Geol Survey Water Supply Paper 2254. 5 Drever J.I., 1997 *Geochemistry of natural waters*. Prentice Hall. 6 Price M., 1996 *Introducing groundwater*. Chapman and Hall 7 Clarke I. and Fritz P., *Environmental isotopes in hydrogeology*. CRC Press.

	* Any of these texts is a good overall reference text for this course.
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:	This course will introduce students to one of the most critical issues facing the Australian environment - the management and sustainable use of groundwater. Students should see how fundamental data can be used to develop a complete picture of a groundwater flow system by presenting results of current research projects and by allowing students to manipulate data and consolidate their hydrogeology skills in practical sessions. The field excursion should demonstrate the immediate relevance of understanding the principles of hydrogeology in the environment and the community.
Links to further information:	http://www.earthsci.unimelb.edu.au/php/subjects_master.php