ERTH30001 Hydrogeology/Environmental Geochemistry

Credit Points:	12.5
Level:	3 (Undergraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 2 x one hour lectures per week over 12 teaching weeks, 1 x two-hour practical class per week over 10 teaching weeks, one 2-day field excursion (exact dates of excursion to be announced after the start of semester) Total Time Commitment: Estimated total time commitment of 170 hours.
Prerequisites:	One of **Subject** / **Study Period Commencement:** / **Credit Points:** CHEM10003 Chemistry 1 — Semester 1, Semester 2 — 12.50 CHEM10004 Chemistry 2 — Summer Term, Semester 2 — 12.50 CHEM10007 Fundamentals of Chemistry — Semester 1 — 12.50 CHEM10006 Chemistry for Biomedicine — Semester 1 — 12.50 Plus two Geology subjects. (i.e. subjects with subject codes beginning with 'GEOL' or 'ERTH')
Corequisites:	None
Recommended Background Knowledge:	A knowledge of basic algebra concepts will be assumed in this subject. Familiarity with basic calculus concepts (e.g. integration, differentiation) will also be helpful for understanding some lecture content.
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 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. 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
Coordinator:	Dr John Moreau
Contact:	**jmoreau@unimelb.edu.au (mailto:jmoreau@unimelb.edu.au)**
Subject Overview:	This subject will investigate, both qualitatively and quantitatively, the fundamental physical and chemical processes governing groundwater flow and composition, including aquifer properties, regional geology and hydrology, water-rock interactions, and subsurface microbial activity. Field and laboratory methods used to characterize aquifer properties and groundwater chemistry,

	including well pumping tests, chemical tracers, and major ion and isotope analyses will also be covered. A two-day field excursion will draw together many of these concepts and topics.
Learning Outcomes:	The objectives of this subject are to # present the basic principles of groundwater flow and chemistry in an engaging and accessible way, # to illustrate these principles through effective hands-on learning practices (including fieldwork), # to challenge students to conceptualize and describe dynamic groundwater processes in a quantitative way, and # to reinforce scientific and critical thinking skills. Upon completion of this subject, students should have a broad yet rigorous understanding of the physical and chemical processes influencing the distribution and quality of groundwater.
Assessment:	Four equally weighted lab reports of approximately 600 words limit each due in Weeks 3, 5, 7, and 9 (40% total), a two-day field trip (April 2-3, 2016) and field report of approximately 600 words limit (10%; due Apr 8th, 2016); and and a two-hour comprehensive written final examination of approximately 2000 words limit (50%). The field trip and final exam are both prescribed (hurdle) requirements for this subject
Prescribed Texts:	Nonner, J.C. Introduction to Hydrogeology, 2nd Ed., Taylor & Francis Group PLC, London, UK 2010 A course reader.
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2016/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2016/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2016/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2016/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	Students will have the opportunity to gain/practice the following generic skills: critical thinking, teamwork, data analysis and interpretation, problem solving.
Links to further information:	http://www.earthsci.unimelb.edu.au/hydro/
Notes:	This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course. Previously known as 625-307 Hydrogeology and Environmental Management (prior to 2009) Previously known as ERTH30001 Hydrogeology (prior to 2011) Previously known as ERTH30001 Hydrogeology and Environmental Geology (prior to 2012) Costs: Fees will be levied for the course reader ($25) and 2-day field excursion ($100 covers transportation, 1-night's lodging and lunches).
Related Majors/Minors/ Specialisations:	Environmental Science Environmental Science major Environments Discipline subjects Geology Geology Geology Geology Geology Science-credited subjects - new generation B-SCI and B-ENG.

	Selective subjects for B-BMED