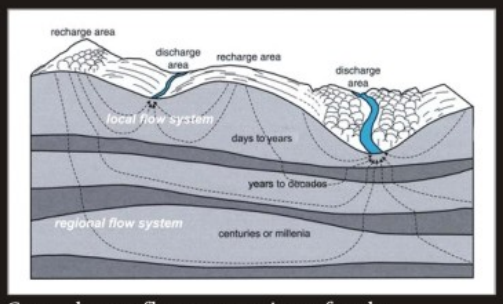
Call for proposals:

Advances in Groundwater Hydrology

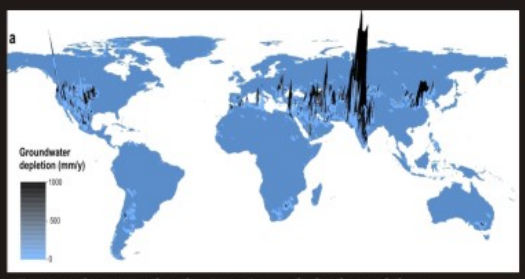
a student-led mini-conference

March 29, 2017 at 1pm
MacLaurin Building D115, University of Victoria
Don't miss the excitement!

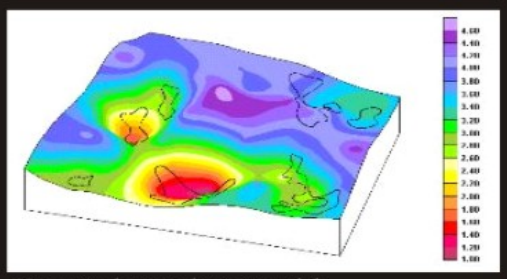
Groundwater flowing from a well in Egypt



Groundwater flows at a variety of scales



Groundwater depletion is a global problem



Numerical groundwater models

Group Research Project:
Students will conduct original research culminating in a class presentation and project paper on a topic relevant to groundwater hydrology. Projects may involve numerical modeling, data compilation or a critical review paper (e.g. a "desk study"). Students should work in groups of 2-3 and share all components of the project including writing. You can explore any question related to groundwater hydrology that truly excites you – why did you take this course? Potential project ideas are also listed below. The research project is intended to be a significant undertaking and as such carries 40% of the marks for the course. If uncertain about the scope or structure of the research paper, be certain to discuss these early on with the instructor.

Please review what you learned about technical writing and information literacy (referencing, writing style, researching, picking and refining topics) in ENGR 110 and 112.

If a "desk study" is chosen, please note that the review paper is to synthesize the literature in a given area while also contributing new knowledge (e.g. a process or mechanism is identified or refined using data from published studies). In other words, it is not merely a summary of the state of knowledge in a given area although the study will take that summary as its point of departure.
If a "numerical modeling" project is chosen, please note that this is not just a modeling exercise – you have to write a well-crafted research paper as well.

The project deadlines are in the course outline for the following deliverables:
Project proposal is a single page outline/summary of the research project topic and methodological approach. You should include: 1) the question you are trying to answer, 2) how you are going to try to answer it, 3) a tentative plan of how you are planning to divide the work between the team members, and 4) a list of 4-5 key, peer-reviewed articles that you will likely reference in your project paper.
Project paper is a maximum of 3000 words (plus references, figures and tables) and be double-spaced. The maximum length will be strictly enforced to practice your concise writing skills (I won't mark anything past the maximum). Please include at least 10-20 references from peer-reviewed literature using the referencing style from your favorite journal. Websites are not peer-reviewed literature. Additional pages can be added for figures. The title page should include a statement describing the contribution of each student to the project (see any Nature paper for examples of contribution statements).
Project presentation is a two slide, 7 minute maximum 'lightening' presentation showing the most important results and message to the class. Any person in the group should be able to answer any question to show that all members of the group fully understand the project.

Numerical modeling ideas:
How does fault permeability or orientation impact fluid flow?
How does changes in recharge impact the water table or available groundwater resources?
What are the time and space scales of groundwater pumping impacts on environmental flows in streams?

Desk Study ideas (or chose your own and bounce the idea off of me):
At what depths does groundwater affect fault mechanisms and seismogenesis?
What are the controlling mechanisms (rock type or climate) of submarine groundwater discharge?
Is the global groundwater budget closed? What is missing? How can it be closed?
Does groundwater affect climate and climate change?
How has and will climate change affect groundwater?
How long would hydrologic systems take to recover if we stopped extracting groundwater today?
Groundwater and the tar sands
Mine filling and/or dewatering
Global sustainable groundwater resources
Groundwater-surface water interactions
Ecohydrology
What is the best scale for groundwater management?
The human fingerprint on hydrogeologic systems
Practical tools for groundwater sustainability