



Groundwater Geochemistry

COURSE OUTLINE – Groundwater Geochemistry

NOTE: This course outline and schedule is tentative and it may be modified depending on the student needs and the time available.

Course Description

This is a course for students in the faculty of Science who want to learn more about the groundwater geochemistry and the quality of groundwater resources. We will explore important themes such as:

- Water Characteristics
- Geochemical Reactions
- Graphical methods for geochemical data
- Factors effects on groundwater quality
- Dissolved Inorganic Carbon (DIC)
- Water Test
- Weathering

Course Format

Lecture series will be based on selected topics from text books.

Policy regarding assignments

All assignments have to be handed in on the due date. Late and/or sloppy assignments will be penalized: 10% will be deducted for each day that an assignment is late. An assignment that is late by more than 5 days will not be marked.

Projects

- Topics will be assigned to individuals in Week 3.
- A literature review of at least 10 relevant papers is required.
- A 15 minutes presentation is required
- A concise structured report is required showing evidence of review of documents.

Coordinator

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Course Schedule (Lectures)

All lectures: FUM International Branch, Room “to be announced”
Saturday 14:00-16:00 2-hr lectures
Office hours to be announced

Course Evaluation

Assignments	10%
Project presentation & report	40%
Final exam	50%

Suggested Textbooks

1. LaMoreaux P.E., (2008). *Environmental Hydrogeology, Second Edition*. CRC Press
2. Nielsen D.M., Nielsen G.L., (2007). *The Essential Handbook of Ground-Water Sampling*. Taylor & Francis
3. Witkowski, A. J., Kowalczyk, A., Vrba, (2007). *Groundwater Vulnerability Assessment and Mapping*. Taylor & Francis
4. Schwarts F.W. Domenico P.A. (2001). *Physical and Chemical Hydrogeology*. John Wiley and Sons, 824p.
5. Appelo C.A.J., Postma D., (1999). *Geochemistry, groundwater and pollution*.
6. Drever J. I. (1997). *The Geochemistry of Natural Waters*. Prentice Hall, 436p.
7. Freeze R.A., Cherry J.A., (1979). *Groundwater*. Prentice Hall, 604p. Chapter