The Islamic University of Gaza
Faculty of Engineering
Civil Engineering Department
Water Resources Msc.

Course Objective:
This course is designed to present:

- The principles underlying the groundwater hydrology which consists of groundwater flow, pumping tests, groundwater exploration, well design and, hydrology of coastal aquifers
- Groundwater modelling which includes the flow and the transport modelling
- Groundwater monitoring which includes the temporal frequency and spatial distribution monitoring

Course Content:

PART 1: Groundwater Hydrology Principles (5 weeks)

1. Occurrence of groundwater
2. Zones of groundwater
3. Movement of groundwater and its velocity
4. Measurement of yield of groundwater (Aquifers)
5. Groundwater Prospecting and Exploration
6. Well design
7. Hydrology of Coastal Aquifer and problems of Sea Water Intrusion

Midterm Exam

PART 2: Groundwater Modelling (4 weeks)

1. Analytical Methods
2. Numerical Method
3. Application of groundwater modelling

PART 3: Groundwater Monitoring (3 weeks)

1. Hydrogeo-statistical Analyses
2. Temporal frequency
3. Spatial distribution

PART 4: Presentation of Groundwater Modelling Exercise (1 week)

Course text:

Recommended Reading:

Exercise and Homework:
In the modelling part, each student should make an exercise in applying the concept of groundwater modeling on parts of Gaza Strip aquifer. The Modelling exercise report should be submitted by each student (or group of students) and make presentation of the modeling results in the last week of the course.
Exams and Grading Policy:
Exercise, homework and class participation ................................................. 15%
Mid-term Exam ......................................................................................... 30 %
Final Exam .............................................................................................. 55%
Total .........................................................................................................100%

Instructions:
• Attendance Policy: Attendance is important. Students with absence that exceeds 25% will not be permitted to take the final exam.
• Exam Policy: Exams are closed book.
Aspects in Groundwater Hydrology

By:

Dr. Yunes Mogheir

Lecture Notes for Water Resources Msc.

Groundwater Hydrology- ENGC 6301

September 2007
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- Well design
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