Course Specifications

Programme(s) on which the course is given: Post-Graduate (Hydro-Petroleum)
Major or Minor element of programmes: Major
Department offering the programme: Geology
Department offering the course: Geology
Academic year / Level: 00/ Post-Graduate
Date of specification approval:

a- Basic Information

Title: Advanced Hydrogeology **Code:** G674

Credit Hours: 2 Credit Hours **Lecture:** 2 Credit Hours

Tutorial: 2 **Practical:** - **Total:** 2 Credits

b- Professional Information

1 – Overall Aims of Course:

- **a-** Explore and develop the basic principles, concepts and ideas in groundwater mechanics and movements.
- **b-** Apply ideas of groundwater hydrogeology with other tenets from geology.
- **c-** Develop arguments to support conclusions and apply reasoning skills to scientific methods

2 – Intended Learning Outcomes of Course (ILOs)

a-Knowledge and Understanding: By the end of this course, the student should be able to:

a1- Learn to effectively communicate orally and through written Ideas, arguments and solution in either formal and informal setting (Communication) .

a3- Acquire the relation between groundwater resources and demands.

b-Intellectual Skills: By the end of this course, the student should be able to:

b1- Calculate recharge and discharge rates .

b2- Classify recharge and discharge elements.

b3- Apply the appropriate solution technique leading groundwater problems .

d-General and Transferable Skills: By the end of this course, the student should be able to:

d1- Interpret the results of hydrogeological studies.

d2- Work as a part of team.

d3- Solve hydrogeology problems.

3. Contents

Topic	Credit hours	Lecture
Review of Hydrology/ groundwater occurrences/ aquifer parameters	2	2
Fluid mechanics and groundwater movement	2	2
Well hydraulics	2	2
Puming tests	2	2
Pumping test data analyses /Steady state/ unsteady state	2	2
Case study (Nubian sandstone in Western desert)	2	2
Project presentation	2	2
Total	**28**	**28**

4 – Teaching and Learning Methods

4.1- lectures.

5- Student Assessment Methods

5.1- Regular written exam.	to assess a1, a2
5.2- Mid-term exam.	to assess a2, c1
5.3- At the end of term exam.	to assess a1-a2, b1-b2, c1-c2
5.4- Reports and discussions	to assess d1-d2

Assessment Schedule

Assessment 1: short exam (class activities)	every two weeks.
Assessment 2: mid-term (written)	week 7
Assessment 3: final-term (written)	week 14- 15

Weighting of Assessments

Written

Mid-Term Exam:	20%
Written Final-term Exam:	60%
Semester Work (including reports, oral and discussion):	20%
Total:	100%

6- List of References

6.1- Course Notes: Prepared by staff members

6.2- Essential Books (Text Books):

Fetter, C. W. (2001): Applied hydrogeology

Surface hydrogeology

6.3- Recommended Books:

Geology and water

6.4- Periodicals, Web Sites, … etc

Journal of hydrogeology

7- Facilities Required for Teaching and Learning

Data show, lab instruments, field trip

Course Coordinator: Prof. Kamal Dahab

Head of Department: Prof. Ahmed Al-Boghdady

Date: / /2012