

Third Year/ Economic geology G315

Course Description Form

The course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether s/he has made maximum use of the available learning opportunities.

1.Educational Institution	College of Science/ University of Basrah
2. Department	Department of Geology
3. Course name/Code 1. Programs included in it	Economic geology G315
4. Programs included in	Bachelor, Master, Doctorate
5. Attendance Form Available	Weekly
6. Semester/ Year	2022-2023
7. Total of study hours	30 hours + 60 practical hours
8. The course description was	Prepared in 01/09/2022
9. Aims of the Course	
The objective is to provide students with the basic principles and knowledge of economic geology in terms of: development of theories on ore genesis, classification of ore deposits; types, origin, migration and deposition processes of ore bearing fluids; the main physical and chemical factors that control the formation of ore deposits; and the distribution of metallic and non-metallic deposits particularly in Iraq.	

10. Course outcomes and methods of teaching, learning and assessment

a- Knowledge and Understanding goals

1. Understanding how economic geology and was developed
2. Diagnose the physical properties of minerals using naked eyes.
3. Understanding the origin and genesis of ore body formation.
4. Knowledge of the main type and migration of ore bearing fluids.
5. Demonstrate the physical and chemical factors controlling ore bearing fluids.
6. Explore the distribution of mineral deposits in Iraq.

b- Subjective- Specific Skills

1. Gain skills on how to estimate the presence of mineral deposit in geologic environments.
2. Gain skills on how to evaluate mineral deposits.
3. Acquire the skill on how to estimate the feasibility of mineral deposits.

Learning Methods

1. Classroom explanation and discussion.
2. Motivate students to write essays and reports on a metal.
3. Urging the student to make PowerPoint presentations.
4. Practical work to evaluate a mineral deposit.

Evaluating Methods

- 1- Weekly quick exam and laboratory reports
- 2- Monthly exams
- 3- Final exams

c- Emotional and evolutionary goals

1. Ability to recognize ore mineral and host rocks.
2. Get a better understanding on origin and the process of ore bearing fluid formation.
3. Ability to evaluate mineral deposits and feasibility of different ore minerals.

Learning Methods

1. Explanation and Discussion of the Lectures
2. Boosting the student to conduct research and reports.
3. The student PowerPoint presentations.

d- General qualification skills transferred (other skills related to employability and personality development)

1. Developing the mental abilities of the student
2. Developing thinking skills
3. Learning the required steps to correctly evaluate a mineral deposit.

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11. Sequencing of course content

Week	Hours	Unit name	Course Outcomes	Learning method	Evaluation method
1 st week, 2 nd , and 3 rd weeks	2 hrs. Lecture 2 hrs. Lab.	Theoretical: General introduction on economic geology and classification of mineral deposits. Practical: Introduction on how to evaluate mineral deposits.	Knowledge and understanding of lectures	Understand the evolving state of knowledge learn to carry out practical work, in the field and in the laboratory	Weekly tests
4 th , 5 th , and 6 th weeks	2 hrs. Lecture 2 hrs. Lab.	Theoretical: Types and migration of ore bearing fluids in the crustal rocks. Theoretical: Sampling and estimate the geometrical dimension of a mineral deposit body with applications.	Knowledge and understanding of lectures	Understand the evolving state of knowledge learn to carry out practical work, in the field and in the laboratory	Weekly tests
7 th and 8 th weeks	2 hrs. Lecture 2 hrs. Lab.	Theoretical: Deposition of ore bearing fluid at different depth Practical: Estimate thickness of mineral deposits with applications.	Knowledge and understanding of lectures	Understand the evolving state of knowledge learn to carry out practical work, in the field and in the laboratory	Weekly tests
9 th and 10 th weeks	2 hrs. Lecture 2 hrs. Lab.	Theoretical: Physical and chemical factors controlling the formation of ore	Knowledge and understanding of lectures	Understand the evolving state of knowledge learn to carry	Weekly tests

		Practical: Estimate grade and density of mineral deposits with applications.		out practical work, in the field and in the laboratory	
11 th and 12 th weeks	2 hrs. Lecture 2 hrs. Lab.	Theoretical: Tectonic processes controlling formation and distribution of ore bodies. Practical: Ore reserve estimation using general, block and triangular methods.	Knowledge and understanding of lectures	Understand the evolving state of knowledge learn to carry out practical work, in the field and in the laboratory	Weekly tests
13 th week	2 hrs. Lecture 2 hrs. Lab.	second semester exam	Knowledge and understanding of lectures	Understand the evolving state of knowledge learn to carry out practical work, in the field and in the laboratory	Monthly tests
14 th and 15 th weeks	2 hrs. Lecture 2 hrs. Lab.	Theoretical: Distribution of mineral deposits in Iraq Practical: Practical semester exam	Knowledge and understanding of lectures	Understand the evolving state of knowledge learn to carry out practical work, in the field and in the laboratory	Weekly tests

12. Course Development Plan

Course development based on recent versions of books and references..
The adoption of modern interactive teaching methods.
Activating alignment programs with international universities to learn about modern curricula and to exchange the experiences.

13. Infrastructure	
1- Textbooks required for the course	<ul style="list-style-type: none"> - Ali, K.J and Mohammed, H.A., 1992, Economic geology – metallic ores. University of Mosul. - Evans, A.M., 1987. Introduction to ore geology.
2 References	<ul style="list-style-type: none"> - Pohl, W.L., 2011. Economic geology: principles and practice. John Wiley & Sons. - Ramdohr, P., 2013. The ore minerals and their intergrowths. Elsevier.
Recommended readings	<ul style="list-style-type: none"> - Edwards, R., 2012. Ore deposit geology and its influence on mineral exploration. Springer Science & Business Media. - Economic geology
Electronic website	https://www.segweb.org https://pubs.geoscienceworld.org/economicgeology https://www.usgs.gov/programs/mineral-resources-program/science/science-topics/economic-geology