



Department of Geology

College of Science

University of Salahaddin

Subject: rock forming minerals

Course Book (2nd class)

Lecturer's name Sawsan Nihad Abdulrhman Academic

Year: 2023/2024

Course Book

1. Course name	Rock forming minerals
2. Lecturer in charge	Sawsan nihad abdulrahman
3. Department/ College	Earth science and petroleum/College of Science
4. Contact	e-mail: sawsan.abdulrahman1@su.edu.krd Tel: (optional): 07504730908
5. Time (in hours) per week	Theory: 0 Practical: 8
6. Office hours	8 hours per week
7. Course code	
8. Teacher's academic Profile	My name is Sawsan Nehad Abdulrhman; I worked in University of Salahaddin since 2000 as researcher assistance in Department of Geology. I got M.Sc. Degree in ore mierals and geochemistry from Salahaddin University/Department of geology in 2004. I participated in studying many subjects such as; practical rock forming mierals, practical ore minerals, practical mineralogy.
9. Keywords	Minerals, chemistry of minerals,

10. COURSE overview

Since minerals are the basic building blocks of earth materials, this course is designed to give the student a fundamental background in chemical composition of minerals , necessary to classes of minerals . The student will learn the how convert chemical analysis of mineralsto chemical formula.

11- course objectiveyg

Define minerals

Drive basic atomic information from the periodic table of elements.

Identify minerals from chemical analysis

Describe the silicon –oxygen tetrahedron and how it form silicate minerals

Describe the common non-silicate classes

12- Forms of teaching

Different forms of teaching are used during the course, like:

White board and power point presentation for the titles, sub-titles and conclusions, in addition to figures and plates.

13- Assessment scheme

The course grade will be determined on the basis of the number of points scored out of a possible 100 points. These points will be apportioned as follows:

Theory.	15	Practical	35	50%
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Final Theory.	50	Practical	00	50%
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35 marks of practical is divide to monthly exam and quizzes

14- Learning Outcomes for this Course

1. The student will gain an understanding of how element combined to form mineral .
2. The student will learn how convetrchemical analysis to chemical formula .
3. The student will acquaintance with unit cell types of minerals.
4. The students will learn how measure chemical analysis of minerals theoretically .

15- Courser reading list reference

1-Klein - Manual of Mineral Science, 23rd edition, by Cornelis Klein and Barbara Dutrow. This text covers crystallography, crystal structure, and crystal chemistry and has useful mineral identification tables.

2. An Introduction to the Rock Forming Minerals, 2nd Edition, by W.A. Deer, R.A. Howie, and J. Zussman.

16- **Practical topics** (laboratory 2 hours/ week):

- Week 1) Calculation of the chemical formula in minerals that have stable chemical composition
- Week 2: Calculation of chemical formula in minerals that have unstable chemical composition
- Week 3 Calculation of chemical formula for minerals contain oxygen in their composition
- Week 4: Calculation of the chemical formula for Olivine group
- **Week 5 Calculation of the chemical formula for Feldspar minerals group**
- Week 6: Calculation chemical formula for pyroxene group
- Week 7: Calculation chemical formula for amphibole group
- Week 8: Calculation chemical formula for mic group
- Week9: unit cell
- Week 10: types of unit cell
- Week 11: exam
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Examination

- 1- calculate oxides weight percentage theoretically of an olivine sample if you know that its forsterite is 21%.
- 2- write Bown reactions series
- 3- find chemical composition and substitution ratio of galena

elements	Wt%	Atomic weight	
Pb	83.7	207.21	
Zn	2.3	65.38	
Fe	3.7	55.85	
S	12.0	32.06	