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**Department of Chemistry**

**College of Science**

**University of Salahaddin**

**Subject: Pra. Geochemistry and Mineralogy 2**

**Course Book – Year 2**

**Lecturer's name: Rezhin Kamal Mustafa (MSc)**

**Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Pra. Geochemistry and Mineralogy 2** | |
| **2. Lecturer in charge** | **Rezhin Kamal Mustafa (MSc)** | |
| **3. Department/ College** | **Chemistry Department/ College of Science** | |
| **4. Contact** | **e-mail: rezhin.mustafa@su.edu.krd**  **Tel: 009647504256696** | |
| **5. Time (in hours) per week** | **For example, Theory: 2**  **Practical: 2** | |
| **6. Office hours** | **3-4 hours** | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | I received B.Sc. degree in geology from Salahaddin University- Erbil-Iraq, in 2013 and M.Sc. degree in Geochemistry from the same university in 2019. I am a member of staff in Department of Earth sciences & petroleum, College of Science, University of Salahaddin. I am a member of Kurdistan Geologists syndicate since 2009. | |
| **9. Keywords** | **Geochemistry, science** | |
| **10. Course overview:**  This course focuses on the Geologists study rocks because they contain clues about what the Earth was like in the past. We can assemble a historical record of a planet and trace events that occurred long before humans roamed our planet. For example, one particular area may have experienced changes as extreme as changing from a desert to a swamp to a coral reef under the sea. Different rocks form under only certain conditions and even the dullest gray lump of a rock can tell us something important about the past. Some types of things that rocks can tell us about our planet as well as other planets are:   * Was there a lake or a volcano present where the rock was found? * Was there a mountain range or a sea? * Was it hot or cold? * Was the atmosphere thick or thin?   These things are important for a number of reasons.  First, by studying how the Earth and other planets worked in the past, we can better understand how they are working today. This helps us understand our effects on the environment and its potential effects on us. For example, by understanding where earthquakes have occurred in the past, we have a much better idea of where they are likely to occur in the future and can be prepared for them. Second, by gaining an understanding of how planets work, we can better predict how the Earth will react to changes. For example, if we understand how the Earth and its life responded to temperature changes in the past, we might better understand the effects of the global warming that is happening today.  So, the basic point is to better understand our world. This helps us to better coexist with nature and reap the benefits that it has to offer. | | |
| **11. Course objective:**  The studying of this course, the students will be able to understand the what is the rocks and minerals are important for learning about earth materials, structure, and systems. Studying these natural objects incorporates an understanding of earth science, chemistry, physics, and math. | | |
| **12. Student's obligation**  The student’s obligation during the course is attendance in the class for two hours for studying the theoretical part of the course the he applied it in the laboratory (about three hours). There are many tests before the beginning of the labs. | | |
| **13. Forms of teaching**  Different forms of teaching will be used to reach the objectives of the course: power point presentations for the titles and definitions and summary of conclusions, all figures that related to the lectures. Furthermore, students will be asked to prepare research papers on selective topics, these topics need to be from printed media or internet. There will be classroom discussions at the last ten minutes of the lecture. To get the best of the course, it is suggested that you attend classes as much as possible, read the required lectures before the time of lecture, teacher's notes regularly as all of them are foundations for the course. Try as much as possible to participate in classroom discussions. | | |
| **14. Assessment scheme**  The students are required to do an exam after each five lectures. There is one theoretical exam at the mid, and one practical exam at the end of the semester, in addition to quiz exams during course.  - The final mark of semester is **50%**, and divided to:  **15%** for theoretical part, and  **35%** for practical part; also, the practical mark is divided to two marks: exam and reports.  - The final exam is from **50%** on theory  Therefore, the total mark will be **100%**. | | |
| **15. Student learning outcome:**  In this year the student learned about:   * Knowing the about the property of minerals and how they used * Identify the similarities and differences among minerals. | | |
| **16. Course Reading List and References‌:**  ▪ Required books:   * Arthur, S. E., (2018). Mineral Tables for the Determination of Minerals by Their Physical Properties. Palala Press, 80 p. * Busch, R. M. (2019). Laboratory manual in physical geology. 7th Edition, Pearson Prentice Hall, Upper Saddle River, New Jersey. 302p. * Ford, W. E., and Dana, E. S., (2006); A Textbook of Mineralogy: Fourth Edition. John Whiley & Sons, New York, 851 p. * Hans, R., and Andrey, B., (2016). Minerals their constitution and origin. 2nd edition, New York, Stockton Press, 640 p. | | |
| **17. Practical Topics:** | | **Lecturer's name** |
| *Lab 1:* Periodic Table.  *Lab 2:* Crystallography.  *Lab 3, 4 & 5:* Quiz for lab 1 and 2; Minerals and Mineral Uses.  *Lab 6:* Types of Rocks (Sedimentary Rocks).  *Lab 7:* Types of Rocks (Igneous Rocks).  *Lab 8:* Types of Rocks (Metamorphic Rocks). | | MSc Rezhin K. Mustafa  (2 hrs)  ex: 15/1/2023 |
| **19. Examinations:**  **Q1:**  Fracture:  Transparency:  **Q2:**  ----------------------- System has Three (Perpendicular) Axes that all meet at 90o and a=b # C in length.  **Good Luck**  Assist lect. Rezhin K. Mustafa | | |
| **20. Extra notes:** | | |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**  Assistant Prof. Dr. Awaz Kareem | | |