

Ministry of Higher Education and Scientific research



**Department of Fish Resources and Aquatic Animals**

**College of Agricultural Engineering Sciences**

**University of Salahaddin**

**Subject: General geology**

**Course Book – Year 2 / First semester**

**Lecturer's name: Sirwa Qader Smail (M.Sc)**

**Academic Year: 2022/2023**

## **Course Book**

<b>1. Course name</b>	General geology
<b>2. Lecturer in charge</b>	Sirwa Qader Smail
<b>3. Department/ College</b>	Fish Resources and Aquatic Animals
<b>4. Contact</b>	e-mail: sirwa.gardi@su.edu.krd Tel: 07504753127
<b>5. Time (in hours) per week</b>	Theory: 2 Practical: 3
<b>6. Office hours</b>	5 hours per week
<b>7. Course code</b>	
<b>8. Teacher's academic profile</b>	My name is Sirwa Qader Smail; I worked in University of Salahaddin since 2003 as researcher assistance in Department of Geology. I got M.Sc. Degree in Geophysics from Salahaddin University/Department of geology in 2010. I have been lecturer since 2017. I participated in studying many subjects such as; practical environmental Geology (Environmental science department), practical Crystallography, practical Rock forming minerals, Practical Clay mineralogy, Industrial geology and geophysics. In addition to these I participated in summer field course and supervised many undergraduate research students. I have taught theoretical and practical Clay Mineralogy, Industrial Geology for fourth year class and electrical resistivity method for fourth year class (First course). I have taught Practical Geophysics (Gravity and magnetic) for third year (First course), theoretical and practical seismic and resistivity course (Second course).
<b>9. Keywords</b>	Earth, Element, Mineral, Rock, Weathering, Sedimentation, Igneous rocks, Sedimentary rocks, Metamorphic rocks.
<b>10. Course overview:</b>	General Geology is a survey of the many facets of geology and Earth Science, from the formation of the Universe and Solar System to rocks and minerals to geologic processes and hazards. The course design is based on Earth cycles (rock cycle, hydrologic cycle, hazard cycles) and has three blatantly recurring themes: recruiting majors, improving students' road trips, and ensuring that students never buy/rent a house in a geologically unsafe area.
<b>11. Course objective:</b>	The course will cover selective topics of general geology together with print media or internet papers which deal with updating general geology. There are several objectives for this subject, including: review and expand your Objectives: understanding and knowledge of general geology, both physical and historical. The course will give students a better understanding of our planet for both internal and external features that have a great relation with human live directly and indirectly, in addition to understanding the galaxies and the universe.

## **12. Student's obligation**

Throughout this course, the students contribute in the lectures and laboratory by asking and answering. Also they assign by homework during each laboratory. Most of the students attend to the laboratory. All of the students are committed in their exams and instructions.

## **13. Forms of teaching**

Different forms of teaching will be used to reach the objectives of the lecture: power point presentations for main topics and definitions and summary of conclusions, different branches of geology, and any other illustrations, besides worksheet will be designed to let the chance for practicing on several aspects of the course in the classroom, There will be classroom discussions and the lecture will give enough background to translate, solve, analyse, and evaluate problems sets, and different issues discussed throughout the course. To get the best of the course, it is suggested that you attend classes as much as possible, read the required lectures, teacher's notes regularly as all of them are foundations for the course. Lecture's notes are for supporting and not for submitting the reading material including the handouts. Try as much as possible to participate in classroom discussions, preparing the assignments given in the course.

## **14. Assessment scheme**

### **Grading:**

There is 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% (50% on theory)**.

Therefore the total mark will be **100%**.

## **15. Student learning outcome:**

1. The student should be able to define the main topics of geology.
2. The student should be able to read and interpret the different phenomena in their specialization.
3. The student should understand the structure, topography and various feature of the earth.
4. The student should understand the relationship between the earth and our galaxy and universe
5. The student should be able to understand the parts of the earth and the subsurface features, and the surface construct, in addition to get a good idea about the different environments, such as deserts, glaciers, oceans, and rivers.... etc., their combination and effects on the earth interior parts and surface
6. The student should be familiar with the economic importance of the earth and the ways of materials formation, the benefit of these materials for human uses in industry and agriculture, like oil, gas, and minerals, water resource, and building materials...etc.

<b>16. Course Reading List and References:</b>	
<ul style="list-style-type: none"> <li>• Understanding Earth: Grotzinger, Jordan, Press and Siever, Fifth Edition. W.H. Freeman and Company, New York (2007).</li> <li>• Earth: Portrait of a planet: C. Marshak, W. W. Norton &amp; Company, Inc., New York (2001).</li> <li>• Fundamentals of Geology: C. W. Montgomery, Third Edition. McGraw-Hill Company, Boston (1997).</li> <li>• Earth Sciences: Young, E. and Carruthers, M., Helicon Publishing, Oxford, UK (2001).</li> <li>• And any other physical or general textbook published recently.</li> </ul>	
<b>17. The Topics:</b>	<b>Lecturer's name</b>
<p><b>Week 1:</b> Course outline and main definitions</p> <p><b>Week 2:</b> Introduction</p> <p><b>Week 3:</b> Minerals</p> <p><b>Week 4:</b> Igneous rocks and processes</p> <p><b>Week 5:</b> Sedimentary rocks</p> <p><b>Week 6:</b> Sedimentary structures</p> <p><b>Week 7:</b> Examination</p> <p><b>Week 8:</b> Metamorphic rocks</p> <p><b>Week 9:</b> Types of metamorphic rock</p> <p><b>Week 10:</b> Structure and deformation</p> <p><b>Week 11:</b> Type of faults</p> <p><b>Week 12:</b> Weathering</p> <p><b>Week 13:</b> Soil</p> <p><b>Week 14:</b> Examination</p>	<p>Sirwa Qader Smail</p> <p>2 hrs. per week</p>
<b>18. Practical Topics</b>	<b>Lecturer's name</b>
<p>Week 1: Introduction, course outline and main definitions</p> <p>Week 2: crystal systems</p> <p>Week 3: Minerals</p> <p>Week 4: Minerals</p> <p>Week 5: Igneous Rocks</p> <p>Week 6: Sedimentary Rocks</p> <p>Week 7: Sedimentary Rocks</p> <p>Week 8: Metamorphic Rocks</p> <p>Week 9: <b>Examination</b></p> <p>Week 10: Soil</p> <p>Week 11: Maps/ Topographic map</p> <p>Week 12: Topographic map/ Topographic-cross section</p> <p>Week 13: Geological map/ Horizontal and Inclined beds</p> <p>Week 14: <b>Examination</b></p>	<p>Ms. Sirwa Qadir Smail</p> <p>3 hrs. per week</p>

**19. Examinations:**

**Q1/ Choose the correct answer for the following questions. (15 grades; 1 each)**

1. Marble is a type of ..... metamorphic rocks. a- foliated, b- none, c- regional, d- non-foliated
2. Calcite is belonging to .....mineral group., a- phosphates, b-sulphates, c- Carbonate d- halides
3. .... Scale is used to measure the hardness of minerals. a- map, b- Mineral, c- crystal, d- Moho
4. In ..... stage of river, there is large amount of water. a- youth b- old c- mature d- radial.
5. The solid rocky earth sphere called a- Atmosphere b- Lithosphere c- Biosphere, d- Hydrosphere.

**Q2/ Define the following: (15 grades;)**

(Metamorphic rocks), (Luster), (River), (Groundwater), (Fold).

**20. Extra notes:**

The course book lacks to the problems which affect the educational process. These problems include the large number of students in each stage, diminution of instruments, and absence of appropriate rooms for lecturers to develop themselves. Finally, about the department of this department absence of financial support to carry out scientific trips and field course in a typical situation.

**21. Peer review**

Dr. Shwan Omer