



**Department of Earth Sciences and Petroleum
College of Science**

University of Salahaddin

Subject: Practical Historical Geology

Course Book – 1st Year

Lecturer's name: Abdullah Talaat Othman

Academic Year: 2021/2022

Course Book

1. Course name	Practical Historical geology
2. Lecturer in charge	Abdullah Talaat Othman (MSc)
3. Department/ College	Dep. of Earth Sciences and Petroleum/ College of Science
4. Contact	e-mail: abdullah.talat@su.edu.krd Tel: (07504945980)
5. Time (in hours) per week	Practical: 2 hours (Four groups per week)
6. Office hours	4 hours
7. Course code	
8. Teacher's academic profile	I received the BSc. in Geology and the MSc.in structural geology from <i>Salahaddin University-Erbil</i> , in 2011 and 2017, respectively. I'm an assistant lecturer of structural geology , PhD candidate and academic staff at the department of Earth sciences and Petroleum - College of science- Salahaddin University/Erbil. I'm interested in structural geology, geomorphology and geological software.
9. Keywords	Historical Geology, Geological time scale, Principles of Geology and maps
10. Course overview:	The practical historical geology course includes the study of the geological time scale, Uniformitarianism (Principles of Relative Dating) and different types of maps (Topographic map, geological map (horizontal bed, inclined bed, unconformity and vertical bed) and Earths grid system. The course focuses on the different type of map and students will get an idea to identify features on the maps and compare them with the features on the land.
11. Course objective:	Practical Historical Geology is a discipline that uses the principles and techniques of geology to reconstruct and understand the geological history of Earth. Practical Historical Geology a course in which students will learn about the fundamentals of historical geology; covering information about the Geological Time Scale and how to use it, the Uniformitarianism, how to make Topographic map, how to use Earths Grid system and how to create

Geological map (Horizontal bed, Inclined bed, Unconformity and Vertical bed). This course is designed for students which have a few or no have information about the historical geology. Each lesson includes specific learning objectives that the students should use to prepare for the soft copy of this power point slides and lab sheets before starting the lab. The lab manual includes the procedures that illuminate the central principles of historical geology. The procedures can help the students to review, analyze, and apply their knowledge of the materials covered in the lab course.

12. Student's obligation

Student must require attending class on a weekly basis and on time. And be able to cover the Labs topic during the academic year and be prepared for a quiz about the previous lab subject. And every lab the students must prepare the report and submit it at the end of the lab. The attendance of the student to the class makes the positive point to understanding the Lab subject and be able to pass the exam during the academic year.

13. Forms of teaching

The teaching form mainly based on the PowerPoint slide that presenting by a data show in the class. Student can get the hard and soft copy of this power point slides and lab sheets before starting the lab.

14. Assessment scheme

I give one exam during the academic course, and this exam will cover all the received material. This exam is contained one type or mixed map, the students will answer this map during examination. The exam has 35 marks (25on exam, 5 on quiz and 5 on report).

15. Student learning outcome:

Practical Historical Geology a course in which students will learn about the fundamentals of historical geology; covering information about the Geological Time Scale and how to use it, the Uniformitarianism, how to make Topographic map, how to use Earths Grid system and how to create Geological map (Horizontal bed, Inclined bed, Unconformity and Vertical bed). This course is designed for students which have a few or no have information about the historical geology. The course focuses on the different type of map and students will get an idea to identify features on the maps and compare them with the features on the land. And also, students will learn about how to use the map in the field to determine the location, types of rock and ... etc.

16. Course Reading List and References:

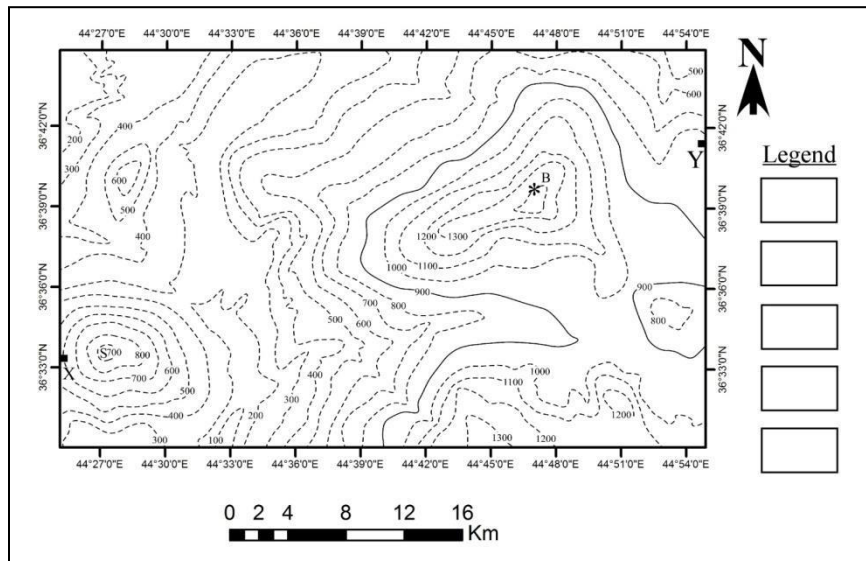
Understanding Earth: Grotzinger, Jordan, Press and Siever, Fifth Edition. W.H. Freeman and Company, New York (2007).

Earth: Portrait of a planet: C. Marshak, W. W. Norton & Company, Inc., New York (2001).

Fundamentals of Geology: C. W. Montgomery, Third Edition. McGraw-Hill Company, Boston (1997).

17. The Topics: Practical Historical geology	Lecturer's name
Week 1: Course book	Abdullah T. Othman
Week 2: Geological Time Scale Definition, geological time scale chart	2 hours
Week 3: Uniformitarian Geologic dating, principles of relative dating	2 hours
Week 4 & 5: Topographic Map Definition, contour line, legend, elevation, map scale, north arrow, relief and topographic profile.	2 hours
Week 5: Earth's Grid System Definition, elevation, longitude and latitude.	2 hours
Week 6 & 7: Geological Map (Horizontal Bed) Definition, geological map, geological column and geological profile.	2 hours
Week 8 & 9: Geological Map (Inclined Bed) Definition, geological map, geological column and geological profile.	2 hours
Week 10: Examination	
Week 11: Geological Map (Unconformity) Definition, geological map, geological column and geological profile.	2 hours
Week 12: Geological Map (Vertical bed) Definition, geological map, geological column and geological profile.	2 hours

18. Examinations:



In this map, the lower boundary of limestone bed is exposed out at elevation 1150m. The solid line represents the contact between lower boundary of siltstone bed (with thickness of 250 m) and upper boundary of marlstone bed (with thickness of 150 m). Point A (36° 37' 17.5" N, 44° 29' 6.5" E) represents the contact between lower boundary of Shale bed, which is covered by the marlstone bed, and upper boundary of sandstone bed, which is covered the remained area on the map. The beds are horizontal.

Q1/ Complete the map by drawing the outcrops of the beds. And fill the legend by suitable lithologic symbols of the beds with writing the name of them. **(40 mark)**

Q2/ On the grid, construct the geologic cross-section along line X-Y, and then construct the geologic column of the beds. **(30 mark)**

Q3/ answer the following:

1. Write the elevation of point B, and what is the topographic feature around point (S). **(5 mark)**
2. Bold the location of the main river and draw the main valley that flow into the main rive **(10 mark)**

19. Extra notes:

It's important that the students ask questions if they do not understand the subject and do not hesitate to ask a question. Each lab has contained different map so the student must control all the maps and write a short note to identify each map.

20. Peer review

Dr. Dana Noori