

Course Outlines

Petrology

2nd Semester of the Academic Year

The Course started on 11/ 05 /1444 - 05/12 /2022
(1444 – 2022)

Course Director:

Dr Bassam A. Abuamarah Al-Mohanna

Petrology Course (320 Geo) outlines

a. Course general information:

- i. Course Director: *Dr Bassam A. Abu Amarah Al Mohannah*
- ii. Contributor: *Mr Saeed Shaltouni*
- iii. Course Title: *Petrology*
- iv. Course Code #: *Geo 320*
- v. Credit hours: *3 credit hours (3 (2+0+1)).*
- vi. Level/ year the course is offered: *First Semester 1444 - 5th level / 4th year.*
- vii. Course pre-requisites: *GPH (221) - Seismic Exploration Course*
- viii. Building No: **four**
- ix. Group Number: **32274** Lecture Time: from **04:00 PM to 05:05 PM**
- x. Lecture theatre (room): **B 1 04 0140 045/1**

b. Course objectives and Learning Outcomes for this Course:

1- Students of this course :

- a. Will be able to describe the diversity of rock types based on observation form, hand specimen, and thin section.
- b. Will be able to interpret the geological history of different rock types based on minerals assemblage, and textures using both hand samples, and microscopic techniques.
- c. Will be able to identify different types of igneous, sedimentary and metamorphic rocks and their features.
- d. Will be able to classify different rock types.
- e. Will be able to designate the different igneous, sedimentary and metamorphic characteristics based on minerals grain size, shape, origin, and texture
- f. The students will be able to describe their different occurrence processes and their field exposures.
- g. Will be able to nomenclature and distinguish among the different rocks types in megascopic study, and via the study of the thin section.
- h. Will give the ability to understand the earth's structure (magma formation, magma compositions, heat generation, petrogenesis),
- i. Will demonstrate the different rock types in the field and validate their formation processes. ,

As a result

Firstly, our students will have the ability to demonstrate, analyze, interpret the rock's types formation processes, petrogenesis of each rock's types. Moreover, they will be able to deliberate and demonstrate its associated minerals components in both hand specimens and thin sections.

Secondly, they will be able to prepare, observe, locate, and draw out the different types of rocks, observe geological field evidence and identify and recall tectonic history based on its field studies correctly and perfectly.

c. Course Evaluation during the semester:

S. No.	Evaluation Tasks	Week due	The proportion of the final evaluation % assessment
1	Attendance, homework, field trip and Quizzes+ questions at the end of some lecture's sessions.		10%
2	Midterm	11	20%
3	Practical test	11 or 12	30%
5	Final Exam	13	40%
Total		13 wks	100 %

d. Essential References and textbooks:

1. Required Text(s) :

- Halder, S. K. and Josp Telstar. (2014). *Introduction to mineralogy and petrology, Radarweg Amsterdam the Netherland.*
- Mauce, E. T. and Tisljar, J., (2001). *Sedimentary petrology: an introduction to the origin of sedimentary rocks, Blackwell Science.*

2. Recommended Books and Reference Material (Journals, Reports, etc)

- Roland, B. F. (2014). *Essentials of igneous and metamorphic petrology, Cambridge, University Press*
- Gatum S. (2014). *Petrology: principals and practice, Springer Heidelberg New York Dordrecht London.*

3. Other learning material (Videos, software ... etc.).

Petrology Course (Geo 320) Group No. 32274
2nd semester 1444



e. Lecture's title outlines: Course launched on 1/ 26 /1444 - 28/ 9 /2022

Wks #	Day	Week's Date	Lecture's Title	Hours	Contact Hours
1	Sunday & Tuesday	115/1444 Corresponding 05/12/2022	Introduction to Petrology	2	4
2	Sunday & Tuesday		Igneous minerals, and chemistry classification Lab: Microscope and minerals review	1	2
3	Sunday & Tuesday		Volcanism, origin and nature of magma. Lab: igneous Classification & textures	1	2
4	Sunday & Tuesday		Factors influencing magma crystallization Lab: igneous Classification & textures	1	2
5	Sunday & Tuesday		Petrology of the mantle, igneous rocks of oceanic lithosphere. Lab: mafic /ultramafic igneous rocks	1	2
6	Sunday & Tuesday		Igneous rocks of continental lithosphere. Sedimentary rocks/environments.	1	2
7	Sunday & Tuesday		Sedimentary rocks/environments	1	2
8	Sunday & Tuesday		Clastic sedimentary rocks. Lab: clastic sedimentary rocks.	1	2
9	Sunday & Tuesday		Chemical sedimentary rocks Lab: Chemical sedimentary rocks	1	2
10	Sunday & Tuesday		Metamorphic rocks, agents of metamorphism and Types of metamorphism	1	2
11	Sunday & Tuesday		Metamorphic rocks classification and descriptions Metamorphic minerals and textures First Assessment Exam	1	2

12	<i>Sunday & Tuesday</i>		The Distribution of Igneous, metamorphic and sedimentary rocks in the field.		
15		24/7/1444 152/2023	Starting date of final Exams		

ملاحظات :

- نسبة الغياب التي تؤدي إلى حرمان الطالب من دخول الاختبار النهائي محددة ٢٥% يتم بموجبها الرفع للكلية .
- لا يسمح للطالب أو الطالبة بدخول المقرر الدراسي الغير المسجل به رسميا.
- إلتزام الطالب بالحضور الكترونيا ويدويا.

Wishing you All the Best and Success

Dr Bassam A. Abuamarah Al Mohanna
Associate Professor