



The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus
General Geology
Lab 0335111



1.	Course title	General Geology Lab
2.	Course number	0335111
3.	Credit hours (theory, practical)	1
	Contact hours (theory, practical)	3 (practical)
4.	Prerequisites/corequisites	0305101
5.	Program title	B.Sc. in Environmental and Applied Geology
6.	Year of study and semester (s)	It is recommended that students study Geology 101 in Fall, and then study Geology 102 and this lab in the Spring semester of their first year. The lab is offered in both Fall and Spring semesters for the convenience of delayed students.
7.	Final Qualification	Toward acquiring a B.Sc. in Environmental and Applied Geology
8.	Other department (s) involved in teaching the course	No other departments are involved
9.	Language of Instruction	English
10.	Date of production/revision	Spring 2018
11.	Required/ Elective	Required

12. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.
Dr. Hind Ghanem, office 202 / the Geology Building. Extension: 22281.
Office hours: 12-1 pm on Sunday, Tuesday, and Thursday.
Email address: h.ghanem@ju.edu.jo

13. Other instructors:

No other instructors (currently)

14. Course Description:

In this course, students study different topics in ten weekly labs. The topics include:

1. Studying crystal systems and their elements of symmetry (2 labs).
2. Studying the physical properties of minerals, and using these properties to identify different minerals, in particular the common rock-forming minerals (2 labs).
3. Studying the three major types of rocks (igneous, sedimentary, and metamorphic) and identify common rocks in each of the three major types (3 labs).
4. Studying topographic maps and acquiring the skill of reading and using maps properly in order to be prepared for studying geologic maps (2 labs).
5. Studying simple geologic maps and earth structures (1 lab).



15. Course aims and outcomes:

A- Aims:

1. Introduce students to earth materials (minerals and rocks) and the fundamental geologic processes involved in their formation.
2. Introduce students to the basic skills needed to read and use topographic maps.
3. Introduce students to the use and interpretation of geologic maps and Earth structures.

B- Intended Learning Outcomes (ILOs): Throughout and upon completion of the course, students will take personal responsibility for their learning and academic success. The following are learning outcomes that every student may achieve by the completion of the course. Upon successful completion of this course students will be able to:

1. Recognize different crystal systems and their elements of symmetry by studying crystal models.
2. Identify the different physical properties of minerals and using the proper tools to find these properties.
3. Identify common minerals in hand specimens after finding their physical properties.
4. Discriminate between the three major rock types (igneous, sedimentary, and metamorphic) in hand specimens.
5. Recognize and identify common rocks in each of the three major rock types (igneous, sedimentary, and metamorphic) in hand specimens.
6. Recognize and understand geologic processes involved in forming different rock types and their role in the variation of rock textures and compositions.
7. Read and use topographic maps (find directions, measure distances, find elevations, identify topographic features on topographic maps, etc.).
8. Read, use, and interpret geologic maps, and construct cross-sections that illustrate geologic structures and features.
9. Develop some of the simplest and most basic skills required for fieldwork (using maps, identifying rock types in-situ, identifying structures, using a compass, etc.).



16. Topic Outline and Schedule:

<i>Topic</i>	<i>Week</i>	<i>ILOs</i>	<i>Program SOs</i>	<i>ABET SOs</i>	<i>TLA (teaching, learning)</i>	<i>Assessment</i>
Physical properties of minerals (color, luster, streak, hardness, magnetism, taste, smell, etc.).	2	2	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz, Lab exercise Exam 1
Minerals identification with emphasis on common rock-forming minerals.	3	2,3	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz, Lab exercise Exam 1
Crystallography I (introduction, symmetry, and crystal systems).	4	1	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz, Lab exercise Exam 1
Crystallography II (crystal forms and more emphasis on crystal systems).	5	1	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz, Lab exercise Exam 1 + Final Exam
Review	6	1, 2, 3	1, 5	A, K	Discussion	-
First Exam (material included: labs 1, 2, 3, and 4)						
Identification and classification of igneous rocks		4, 5, 6, 9	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz Lab exercise Exam II + Final Exam
Identification and classification of sedimentary rocks		4, 5, 6, 9	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz Lab exercise Exam II + Final Exam
Identification and classification of metamorphic rocks.		4, 5, 6, 9	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz Lab exercise Exam II + Final Exam
Review of all rock types		4, 5, 6, 9	1, 5	A, K	Discussion	-
Second Exam (material included: labs 4, 5, 6, and 7).						
Topographic maps 1		7, 9	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz Lab exercise Final Exam
Topographic maps 2		7, 9	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Quiz Lab exercise Final Exam
Geologic maps and structures		8, 9	1, 5	A, K	Lecture + Lab exercise + Online videos and resources	Lab exercise Final Exam



17. Evaluation Methods and Course Requirements (Optional):

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

1. Weekly quizzes. 5%
2. Weekly lab reports. 15%
4. Exams (first 20%, second 20%, final 40%).

18. Course Policies:

A- Attendance policies:

Missing two labs with or without an official excuse will result in getting absence fail grade and the student will need to re-enrol in the lab when it is next available.

B- Absences from exams and handing in assignments on time:

Not turning in lab reports and assignments on time will result in getting a zero grade.

C- Health and safety procedures:

No hazardous materials or chemicals are used in this lab. Students will be instructed when possible hazards in the lab or field may occur.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

As decided by the regulations of the University of Jordan.

E- Grading policy:

To pass this class, students must get at least 50%. The distribution of grades will vary depending on the student group, but the pass/fail grade is fixed. The A grade will not be given if no student gets more than 85%. When the class was taught in Fall 2015 the scale was the as following:

0-39 F	40-49 D-
50-52 D	53-56 D+
57-60 C-	61-64 C
65-68 C+	69-71 B-
72-76 B	77-80 B+
81-84 A-	85-100 A

F- Available university services that support achievement in the course:

E-learning

G- Statement on Students with disabilities

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.



19. Required equipment:

1. For lecturing: a data projector and white screen.
2. For lab work:
 - a. For identification of hand-specimens (minerals and rocks): hand lenses, magnets, diluted HCl, porcelain plates, and glass slides, at least 10 sets of Mohs scale, rock and mineral samples.
 - b. For crystallography: wooden crystal models, and larger glassy models for illustrations.
 - c. For maps: large topographic and geologic maps and block diagrams.

20. References:

A- Required book (s), assigned reading and audio-visuals:

1. Busch, R. M., American Geological Institute & National Association of Geoscience Teachers. (1997). Laboratory manual in physical geology. Upper Saddle River, NJ: Prentice Hall. (Or more recent editions).
2. Handouts with necessary figures and basic information and instruction were handed to students in each lab. These handouts will be put together to prepare a new manual for the lab in future semesters.

B- Recommended books, materials, and media:

1. Lutgens, F. K., & Tarbuck, E. J. (2010). Foundations of earth science. Upper Saddle River, NJ: Pearson. (Or more recent editions).
2. Klein, C. (2008). Minerals and rocks: Exercises in crystal and mineral chemistry, crystallography, X-ray powder diffraction, mineral and rock identification, and ore mineralogy (3rd ed.). Hoboken, NJ: Wiley.



21. Additional information:

Date: -----

Name of Course Coordinator: -----Signature: -----

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File