

Course E-Syllabus

1	Course title	Geology of Jordan
2	Course number	0335401
3	Credit hours	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	Petrology, Applied Sedimentary rocks, Structural geology
5	Program title	Geology
6	Program code	
7	Awarding institution	
8	School	Science
9	Department	Geology
10	Level of course	Undergraduate
11	Year of study and semester (s)	4 th year, 1 st semester
12	Final Qualification	B.Sc.
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English and Arabic
15	Teaching methodology	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input checked="" type="checkbox"/> Zoom <input type="checkbox"/> Others.....
17	Date of production/revision	28/6/2020

18 Course Coordinator:

Name: Prof. Belal S. Amireh Office number: 115 Phone number: 22251 Email: bamireh@ju.edu.jo

19 Other instructors:

Name: Office number: Phone number: Email: Name: Office number: Phone number: Email:

20 Course Description:

Contents:

I. Stratigraphy

- 1- Precambrian Eon
- 2- Paleozoic Era
- 3- Mesozoic Era
- 4- Cenozoic Era

II. Cenozoic Volcanism

III. Structures:

- 1- Precambrian and Paleozoic structures
- 2- Syrian arc fold system
- 3- Transverse fault system
- 4- Dead Sea Transform
- 5- Structural evolution of Jordan

IV. Morphologic features:

- 1- Dead Sea transform zone
- 2- Jordan heights and plateaus
- 3- Region seismicity

21 Course aims and outcomes:

A: Aims

- 1- To know the genesis of the Arabian-Nubian Shield.
- 2- To understand the rock types composing the Precambrian Eonothems and their textures, and mineral composition.
- 3- To study the formations composing the Paleozoic, Mesozoic and Cenozoic Erathems and their sedimentary structures, mineralogy, diagenesis and depositional environments.
- 4- To illustrate and interpret the surface and subsurface distribution of the Paleozoic, Mesozoic and Cenozoic strata in Jordan.
- 5- To comprehend the paleogeography of Jordan during the Phanerozoic Eon.
- 6- To know the geologic structures in Jordan including the Syrian Arch Fold System, The Dead Sea Transform Fault System, and the other fault types.
- 7- To study the seismisity of Jordan within the context of the Middle East Region.
- 8- To recognize the various Paleozoic, Mesozoic and Cenozoic formations in the field.
- 9- To gain the skill of writing a technical report related to the data acquired through the fieldwork.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to:

- 1) Understand the origin and evolution of the Arabian Shield with its characteristic rock types.
- 2) Know what type of rocks and formations are present in the subsurface in the different parts of Jordan.
- 3) Describe the different types of geologic structures in Jordan.
- 4) Identify the type and geologic age of rocks cropping out in the various parts of Jordan.
- 5) Understand the development of the depositional environment and paleogeography during the Phanerozoic.
- 6) Know the location of sedimentary ores and industrial rocks to be applied for various industrial purposes.

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1	Precambrian Introduction	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.

	1.2	Aqaba Complex: Metamorphic Suites	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	1.3	Aqaba Complex: Metamorphic Suites	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	1.4	Aqaba Complex: Igneous Suites	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	1.5	Araba Complex: Safi Group	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
2	2.1	Umm Ghaddah Formation	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	2.2	Paleozoic Introduction	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	2.3	Cambrian	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	2.4	Cambrian	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	2.5	Ordovician	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
3	3.1	Ordovician	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	3.2	Subsurface Paleozoic	Microsoft Teams and Zoom.	First exam	Abed, A.M., 2017. Geology of Jordan.
	3.3	First Exam			
	3.4	Mesozoic	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	3.5	Triassic	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	4.1	Jurassic	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	4.2	Lower Cretaceous	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
4	4.3	Lower Cretaceous	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	4.4	Upper	Microsoft Teams	Second exam	Abed, A.M.,

		Cretaceous introduction	and Zoom.		2017. Geology of Jordan.
	4.5	Ajlun Group: Naur - Fuhais - Hummar Formations	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
5	5.1	Ajlun Group: Shu'ib -Wadi Es Sir Formations	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	5.2	Balqa Group: Ghudran - Amman Formations	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	5.3	Balqa Group: Amman formation	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	5.4	Balqa Group: Hasa (Phosphorite) Formation	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	5.5	Balqa Group: Muwaqqar Formation (Oil Shale)	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
6	6.1	Balqa Group: Rijam - Shallalah Formations	Microsoft Teams and Zoom.	Second exam	Abed, A.M., 2017. Geology of Jordan.
	6.2	Second Exam			
	6.3	Cenozoic Introduction	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	6.4	Dead Sea Group	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	6.5	Dead Sea group	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
7	7.1	Jordan Group	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	7.2	Jordan Group	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	7.3	Pleistocene Deposits	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	7.4	Holocene Deposits	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.

	7.5	Cenozoic Volcanism	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
8	8.1	Cenozoic Volcanism	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	8.2	Geologic Structure Introduction	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	8.3	Syrian Arc Fold System	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	8.4	Syrian Arc Fold System	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	8.5	Transverse Faults System	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
9	9.1	Graben Tectonics	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	9.2	Dead Sea Transform Fault System	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	9.3	Dead Sea Transform Fault System	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	9.4	Morphologic Features	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	9.5	Morphologic Features	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
10	10.1	Seismicity in Jordan and Palestine	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	10.2	Seismicity in Jordan and Palestine	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	10.3	Seismicity in the Middle East	Microsoft Teams and Zoom.	Final exam	Abed, A.M., 2017. Geology of Jordan.
	10.4	Revision			
	10.5	Revision			

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

23 Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment

methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
First Exam	20	Precambrian Eon and Paleozoic Era	1-2	Microsoft Forms
Second Exam	30	Mesozoic Era	3-5	Microsoft Forms
Final Exam	50	Cenozoic Era, geologic structures, and seismicity	6-10	At the campus

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

Microsoft Teams, Moodle, and Zoom applications

25 Course Policies:

A- Attendance policies:

B- Absences from exams and submitting assignments on time:

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

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

26 References:

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

عابد، ع. م.، 2017، جيولوجيا الأردن و بيئته و مياهه، الطبعة الثانية، دار وائل للنشر والتوزيع، عمان، 583 صفحة.

B- Recommended books, materials and media:

Bender, F., 1974, Geology of Jordan. Brontraeger, Berlin.

27 Additional information:

Name of Course Coordinator: Prof. Belal S. Amireh Signature: ----- Date 28/6/2020

Head of Curriculum Committee/Department: ----- Signature: -----

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

Head of Curriculum Committee/Faculty: ----- Signature: -----

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