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**The University of Jordan**

**Accreditation & Quality Assurance Center**

## **Course Syllabus**

**Course Name:**

**Environmental Geology 0305102**

1	Course title	Environmental Geology
2	Course number	0305102
3	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	0335101
5	Program title	B.Sc. Program in Environmental and Applied Geology
6	Program code	0305
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Science
9	Department	Geology Department
10	Level of course	First year
11	Year of study and semester (s)	2017/2018
12	Final Qualification	B.Sc.
13	Other department (s) involved in teaching the course	-----
14	Language of Instruction	English
15	Date of production/revision	October 2018

**16. Course Coordinator:**

**Office numbers, office hours, phone numbers, and email addresses should be listed.**

Dr. Saber A. Al-Rousan  
 Tel. +962-6-5355000, Ext. 22253  
 Mobile:- 0777358655  
 Office hours:- Sunday, Tuesday 09:00-11:00  
 Email:- [s.rousan@ju.edu.jo](mailto:s.rousan@ju.edu.jo)

**17. Other instructors:**

*Office numbers, office hours, phone numbers, and email addresses should be listed.*

Dr. Saber A. Al-Rousan  
 Tel. +962-6-5355000, Ext. 22253  
 Mobile:- 0777358655  
 Office hours:- Sunday, Tuesday 09:00-11:00  
 Email:- [s.rousan@ju.edu.jo](mailto:s.rousan@ju.edu.jo)

**18. Course Description:**

*As stated in the approved study plan.*

Earth: systems and cycles; hazardous geologic processes: earthquakes, volcanic eruptions, tsunamis, landslides, sinkholes, floods; hazards of ocean and weather; meteorite impacts; fossil fuels; energy alternatives; mineral resources and the impact of their mining on the environment; soil resources; water resources; human impacts on the environment: waste disposal, contaminants in the geologic environment; atmospheric change and global warming.

**19. Course aims and outcomes:****A- Aims:****Acquaint students with basic information about:**

Environmental geology concerned with the interactions between humans and the geological environment. The objectives of this course are to introduce students to the important concepts and topics of environmental geology. The course will also provide students with knowledge about the internal and external earth processes and their hazards to life and property and the most common methods used to mitigate these hazards. The following topic will be covered:-

- Environmental geology and scientific method.
- Earth in space and time.
- Impacts of human population growth.
- Rocks and minerals.
- Plate tectonics.
- Earthquakes related hazards and their reduction.
- Hazards related to volcanoes.
- Streams and flooding and strategies for Reducing Flood Hazards.
- Coastal zone and process, coastal erosion and stabilization.
- Consequences of Mass Movements, Possible Preventive Measures.
- Ice and Glaciers, Wind and Deserts.
- Climate—Past, Present, and Future, prediction and uncertainties.

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

- Understand the origin and development of the universe (earth and planets).
- Describe the scientific method as applied in geology.
- Evaluate the impacts of human population growth on natural resources.
- Identify the occurrence and classification of earth's materials (rocks and minerals).
- Explain the theory of plate tectonics and tectonic hazards.
- Explain how internal earth processes (plate tectonics, earthquakes, and volcanoes) create hazards to life and property.
- Explain how external earth processes (streams, coastal zone, mass movements, ice and glaciers, winds and deserts and climate changes) create hazards to life and property.
- Understand and explain the most common methods used to mitigate hazardous natural process resulted from internal and external earth processes.

**20. Topic Outline and Schedule:**

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Planet and Population: An Overview	1-2	Dr. Saber	Understand the origin and development of the universe	Quizzes and first exam	The Environmental Geology <i>by</i> Carla Montgomery (Author), 10 <sup>th</sup> Edition, McGraw-Hill Education; 2013
Rocks and Minerals—A First Look	3		Identify the occurrence and classification of earth's materials		
Plate Tectonics	4		Explain the theory of plate tectonics and tectonic hazards	Quizzes and second exam	
Earthquakes	5-6		Explain how earthquakes and volcanos create hazards and the methods used to mitigate them		
Volcanoes	7-8				
Streams and Flooding	9-10	Dr. Saber	Explain how external earth processes create hazards to life and property.	Quizzes and Final exam	The Environmental Geology <i>by</i> Carla Montgomery (Author), 10 <sup>th</sup> Edition, McGraw-Hill Education; 2013
Coastal Zones and Processes	11-12				
Mass Movements	13				
Ice and Glaciers, Wind and Deserts	14-15		Understand and explain the most common methods used to mitigate external earth processes hazards		
Climate—Past, Present, and Future	16				

**21. Teaching Methods and Assignments:**

**Development of ILOs is promoted through the following teaching and learning methods:**

Lectures on PowerPoint presentations, questions and discussion during the lecture, illustrative photos and movie in addition to some student presentation on subjects related to taught material.

**22. Evaluation Methods and Course Requirements:**

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

First Mid-term exam  
Second Mid-term exam  
Participation and attendance  
The Final exam

### 23. Course Policies:

#### A- Attendance policies:

Attendance is compulsory and not to exceed (with acceptable excuse only) 15% of the total lectures, student will automatically deprive if he exceeds this limit. A small fraction of the mark will be allocated on attendance.

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

It is not allowed to be absent from the exams, in case of compelling conditions, make up exam will be held. The assignments should be all delivered on time.

#### C- Health and safety procedures:

NA

#### D- Honesty policy regarding cheating, plagiarism, misbehavior:

There will be no leniency or tolerance with regard to cheating and system bypass issues, necessary actions will be taken by department committee.

#### E- Grading policy:

First Mid-term exam 20%  
Second Mid-term exam 20%  
Attendance and Participation 10%  
The Final exam 50%

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

Main library, computer rooms with internet access

### 24. Required equipment:

Laptop computer  
Data show in the classroom  
White board in the classroom

### 25. References:

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

**The Environmental Geology" by Carla Montgomery (Author), 10<sup>th</sup> Edition, McGraw-Hill Education; 2013.**

#### B- Recommended books, materials, and media:

**Introduction to Environmental Geology by Edward A. Keller (Author), 5<sup>th</sup> edition, Prentice Hall, 2011.**

**26. Additional information:**

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

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