Course Outlines

Environmental Geology

(Geo *262)*

First Semester of the Academic Year

1443 - 2021

Course Instructor

Dr. Bassam A. A. Abuamarah Al Mohannah

Environmental Geology (Geo 262) outlines

a. *Course general information:*

i. Course Director: *Dr. Bassam A. Abu Amarah Al Mohannah*
ii. Contributor: Nil
iii. Course Title (Field Study) : *Environmental Geology*
iv. Course Code #: *Geo 262*
v. Credit hours: *2 credit hours (2 (2+0+0)).*
vi. Level/ year the course is offered: *Second Semester (1442) of the 5th level/3rd year.*
vii. Course pre-requisites: Geo*221 (Optical mineralogy), & 323 Geo (Petrology)- 5th level, Volcanology.*
viii. Group #: **29874**
ix. Lecture Language: English.
x. Form type of study: Full-time studies
xi. Lecture theater : (80/2 04 0104).

b. Course Descriptions

Geologic factors influencing the environment – air, water and soil pollution – radioactive waste disposal – Geohazards including: earthquakes, volcanoes, floods, soil erosion and landslides – desertification – population expansion and depletion natural resources – pollution associated with the extractive industries. (One day field trip)

c. Overview Course

- The Environmental Geology Course deals in utilizing most of the geological with using geological sciences and information to find out the relationships between humans being and living environmental conditions of the earths' components 1) the biosphere, 2) the lithosphere, 3) the hydrosphere, and 4) the atmosphere.

- The Environmental geology course will involve a range of topics, ranging from Earth materials and their use to Earth processes, including natural hazards and their impact on human lives. The environmental effects due to the exploring Earth resources as an basic component of the course.

d. *Course objectives and Course Learning Outcomes:*

Students of this course will be able to :

a. outline how geology relates to the environment and discuss how environmental problems and the rise in human population are connected.
b. describe the conditions that make some natural Earth processes hazardous to people and discuss the role of science in evaluating natural hazards.

c. outline the mechanisms behind geological processes that include earthquakes, volcanoes, and landslides and identify associated hazards and ways of minimizing their effects.

d. describe the basic wave processes and identify the different forms and causes of coastal erosion, soil erosion and landslides – desertification – population expansion and depletion natural resources – pollution associated with the extractive industries and how they can be minimized.

e. explain and describe the fundamental components of the hydrologic (water) cycle and processes that influence of water surface water and groundwater supply, including water pollution.

f. Discuss and explain the factors that control the location and distribution of mineral resources, including fossil fuels, and the environmental impact of mineral development.

g. describe the role of the radioactive resources that can play as alternative energy resources.

h. Illustrate processes involved in soil development and explain the role soils play in land use planning; outline the primary properties of soils.

i. describe the basics of Earth system science and how it can be utilized to prevent our planet pollutions.

e. Course Evaluation during the semester:

S. No.	*Evaluation Tasks*	*Week due*	*Proportion of the final evaluation % assessment*
1	*Homework+ report & attendance*	*5 -9- 12*	*10%*
2	*First test*	*7*	*15%*
3	*Practical test*	*13*	*20%*
4	*Second test*	*14*	*15%*
5	*Final Exam*	*15*	*40%*

f. Essential References and text books:

I. Required Text(s) :

- Keller, E. A. (2012). Introduction to Environmental Geology (5th ed.). Upper Saddle River, NJ: Prentice Hall.

- Foley, D., McKenzie, G. D., & Utgard, R. O. (2009). ***Investigations in Environmental Geology*** (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

II.Other Materials

- The course materials include a study guide, student manual, and a laboratory assignment.

i. *Geology of the Arabian Shield Lecture's title outlines: Starts on Sun 25 /01/1443 Corresp. 2/09/2021*

No. of Wk.	*day*	*Week date*	*Lecture's Title*	No. Of Weeks	Contact hours
1	***Thursday*** **10 AM to 12PM**	**2/9/2021**	**Basic Concepts of Environmental Geology**	**1**	**2**
2	***Thursday*** **10 AM to 12PM**	**9/9/2021**	**The Internal Structure of Earth**	**1**	**2**
3	***Thursday*** **10 AM to 12PM**	**16/9/2021**	**Minerals and Rocks and Ecology and Geology**	**1**	**2**
4	***Thursday*** **10 AM to 12PM**	**23/9/ 2021**	**(National Day)**	1	2
5	***Thursday*** **10 AM to 12PM**	**30/9/2021**	**Introduction to Natural Hazards**	**1**	**2**
6	***Thursday*** **10 AM to 12PM**	**7/ 10/2021**	**Earthquakes and Related Phenomena**	1	**2**
7	***Thursday*** **10 AM to 12PM**	**14/10/ 2021**	**Volcanic Activity** ***First Assessment Exam.***	**1**	**2**
8	***Thursday*** **10 AM to 12PM**	**21/10 /2021**	**Rivers and Flooding.**	**1**	**2**
9	***Thursday*** **10 AM to 12PM**	**28/10/ 2021**	**Slope Processes, Landslides, and Subsidence**	**1**	**2**

10	**Thursday** 10 AM to 12PM	4/11/2021	Coastal Processes	1	2
11	**Thursday** 10 AM to 12PM	11/11/ 2021	Water Resources, and Pollutions	1	2
12	**Thursday** 10 AM to 12PM	18/11/2021	Mineral Resources	1	2
13	**Thursday** 10 AM to 12PM	25/11/2021	Soils and the Environment. *(mid term break)*	1	2
14	**Thursday** 10 AM to 12PM	2/12/2021	Global Climate Change	1	2
15	**Thursday**	9/12/ 2021	***Second assessment exam***	1	2
16	**Sunday**	*222/51443 26/12/2021*	***1st semesterFinal Exam's Date***		

ملاحظات :

- **نسبة الغياب التي تؤدى إلى حرمان الطالب من دخول االختبار النهائي محددة 25% يتم بموجبها الرفع للكلية .**
- **لا يسمح للطالب أو الطالبة بدخول المقرر الدراسي الغير المسجل به رسميا.**
- **إلتزام الطالب بالحضور للمحاضرات للأهمية.**

Wishing you All the Best and Success.