



## Faculty of Earth Sciences



### Department of Mineral Resources & Rocks 3rd & 4th Years Program



The Geological Society  
Accredited degree courses

### **PHYSICAL GEOLOGY**

Course Name	Course ID	Prerequisites
Physical Geology	<i>EMR 201</i>	None

#### **Course Description:**

This course is designed to introduce the internal and external processes that operate within the Earth. we will discuss the following topics:

1. Relationship between the earth and the globe.
2. Different spheres of the earth and its zones.
3. Introductory notes about common minerals and different types of rocks.
4. Magma generation & types, Volcanoes, Plate Tectonics, Earthquakes
5. External processes of the earth e.g. weathering, mass wasting, surface water and underground water.
6. Glaciers, beaches, desert, wind, geologic column and methods of dating geologic events.

#### **Course objectives:**

Our goal with this subject is to learn about the fundamental processes that affecting the interior and exterior of the Earth, with a focus on examples from Saudi Kingdom. By the end of the semester, the student should be able to convincingly answering questions about the following points:

1. The relationship between the earth and the globe.
2. The internal and external processes of the earth.
3. Earth's spheres, magma generation & types, Plate Tectonics, Volcanoes, Earthquakes.
4. Introductory notes on common minerals and different types of rocks.
5. Weathering, formation of soil with a special emphasis on sedimentary rocks.
6. Mass wasting and the processes of mass wasting, surface water (hydrologic cycle, running water, and the geologic effects of the surface water).
7. Underground water (types of aquifers, springs, wells).

8. Glaciers, beaches, desert and wind.
9. Methods of dating geologic events and geologic time scale.
10. One day field trip around Jeddah city (Wadi Fatma).

**General references for course: (Books/Journals...etc.)**

- 1) Tarbuck, E. J., and Lutgens, F. K., 2002, Earth: An Introduction to Physical Geology, 7th Ed., Prentice Hall, Upper Saddle River, New Jersey, 670 p.
- 2) Nasseef, A.O., Radain, A.A., Hassan, M.A. (1417 H). Earth Science. Dar Jeddah Library, Kingdom of Saudi Arabia. (in Arabic)
- 3) Al Filali, I.Y., Abd El-Naby, H.H., Dawood, Y.H., Osman, A., F. (2007) Mineralogy: Introduction to Mineralog. Volume I, Al Anglo Library, Cairo, Egypt, 358pp. (in Arabic)
- 4) Meshref, M.A. (1418 H). Principles of Geology – Physical Geology. Dar Al Marrikh, Reyidh, Kingdom of Saudi Arabia (in Arabic).

**List of URLs for this Course**

- 1) <http://comp.uark.edu/~sboss/slideset00.htm>
- 2) [http://homepage.smc.edu/robinson\\_richard/generalgeologylinks.htm](http://homepage.smc.edu/robinson_richard/generalgeologylinks.htm)
- 3) <http://www.geologyrocks.co.uk/tutorials.php?keywords=general>

**Expected Course Outcome:**

The student should be able to know all aspects of physical geology, internal and external processes of the formation of the earth. The evolution of its surface and subsurface features: This could be summarized as follows:

1. Student can learn all aspects regarding physical geology.
2. Student can different groups of mineral and types of rocks.
3. Student can know the glaciers, beaches, wind and sand deposits.
4. Student knows the water related subjects (surfaces and underground)
5. Student can know the mass wasting.
6. Student can know the geological time scale.