



Faculty of Earth Sciences



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



The Geological Society
Accredited degree courses

ECONOMIC GEOLOGY

Course Name	Course ID	Prerequisites
Economic Geology	EMR 231	EMR 201, EMR 202
<p>Course Description</p> <ol style="list-style-type: none"> 1. It is introductory course to economic geology in order to teach students the main aspects of mineral resources and their utilities. 2. The course includes identification of materials (metallic & non-metallic minerals, gemstones and dimensional stones). 3. Some simplified notes are also given viz. definitions of common terms used by economic geologists, in addition to the classifications of economic ores. 4. The mode of occurrence of common ores is also considered. Selected types of mineral deposits, either from the Kingdom or around the world will be also studied. 5. Finally, the course sheds more light on industrial applications of minerals and rocks, their formation, common examples and uses. A one-day field trip is paid to a nearby mining area, preferably close to Jeddah. 		
<p>Course Objectives</p> <ol style="list-style-type: none"> 1. Students in this course will learn about the different minerals that have economic importance. 2. During the first part of this course, we will focus on the definition of economic geology and its relationship to the other branches of geology. Also, we will study the materials of mineral deposits such as mineral, ore, primary ore mineral, secondary ore mineral, and gangue mineral. At the end of this part of the course, the student will know the importance of economic geology and the materials of ore deposits and he will be able to differentiate between ore minerals and gangue minerals according to the characteristic feature and economic importance of each one. 3. In the second part of the course, we will discuss the association of ore deposits with the different types of rocks (igneous, metamorphic and sedimentary rocks). 4. After completing this part of the course, the student will be able to identify the 		

different types of mineral deposits which can associate each type of rock and this will prepare the students in determining the environment of each ore deposit and this will facilitate the methods of exploration of ores. Also, the student will know the place of occurrences of the different ore deposits in the Kingdom.

General References for the Course: (Books/Journals...etc.)

- 1) Yamani, M.A. (1406 H): Economic geology and mineral resources in the Kingdom of Saudi Arabia. Third Edition, (in Arabic)
- 2) Evans M. (1997). An Introduction to Economic Geology and Its Environmental Impact
Blackwell Science. 364 p.
- 3- Al Shanti, A. M. (1416 H): Mineral deposits in the Kingdom of Saudi Arabia. First Edition, Scientific publication center, King Abdulaziz University, Jeddah. (in Arabic)

List of URLs for this Course

1. Reports and periodicals: from the Saudi Arabia geological survey, Ministry of mineral resources, Maaden Company and specialized web sites
2. U.S. Geological Survey: <http://www.usgs.gov/>
WWW.wr.usgs.gov/
- 3-Hassan, M.A. (1979). Mineral deposits. Al Anglo library, Cairo, Egypt
- 4-Jensen, M.L., Bateman, A.M. (1981). Economic mineral deposits. John Wiley and Sons, N.Y
- 5-Ore Geology Reviews

Course Outcome

By the end of this course the students should know the following:

- 1- Student can familiar with minerals of economic importance.
- 2- Student can acquainted with the mineral deposits and their composition such as mineral, ore, primary ore mineral, secondary ore mineral, and gangue mineral.
- 3- Student can know the importance of economic geology and the materials of ore deposits.
- 4- Student can be able to differentiate between ore minerals and gangue minerals according to the characteristic feature and economic importance of each one.
- 5- Student can be able to identify the relation between mineral deposits and associated rock type.
- 6- Student can familiarize with the environment of ore deposits.
- 7- Student can know the occurrences of the different ore deposits in the Kingdom.