



Course Specification

Diploma

Course Title: Ore Deposits of Saudi Arabia

Course Code: APMQ3218

Program: Mining and Quarrying

Department: Diploma Department

College: The Applied College

Institution: Umm Al-Qura University

Version: 1

Last Revision Date: 20 February 2025

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A. General information about the course:

1. Course Identification

1. Credit hours: (2)

2. Course type

A. ☐ University ☐ College ☒ Department ☐ Track ☐ Others
B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (3rd. Level)

4. Course General Description:

This course provides students with an overview of the ore deposits found in the Kingdom of Saudi Arabia. It introduces the classification, origin, and geological settings of various metallic and industrial mineral deposits. Emphasis is placed on the processes that lead to ore formation, including magmatic, hydrothermal, sedimentary, and metamorphic origins. The course also covers the distribution of major ore deposits across the Arabian Shield and sedimentary basins, with selected case studies relevant to the local mining sector. Students will develop the ability to identify and describe ore types and understand their economic significance within the context of national mineral resources.

5. Pre-requirements for this course (if any):

APMQ2208

6. Co-requisites for this course (if any):

None

7. Course Main Objective(s):

This course aims to provide students with in-depth knowledge of the types, distribution, and formation processes of ore deposits in Saudi Arabia. It seeks to enable students to identify economically significant mineral resources, understand their geological settings, and analyze their potential for extraction. The course also supports the development of students' competencies in interpreting ore deposit data and linking local geology with mining industry practices.



2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	100%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		30

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

1.0	Knowledge and understanding			
1.1	Identify the main types and classifications of ore deposits in Saudi Arabia	K1	Lectures and Interactive Discussions	Quizzes, Midterm and Final Exams
1.2	Explain the geological processes responsible for ore formation.	K3	Lectures and Interactive Discussions	Midterm and Final Exams
1.3	Describe the economic significance and national relevance of key ore deposits	K2	Lectures and Interactive Discussions	Final Exam, Homework
2.0				



2.1	Analyze geological maps and data related to ore deposit distribution	S1	Group discussions, c	Midterm and Final Exams, Quizzes
2.2	Apply knowledge to identify the most promising mineral zones for exploration	S2	Case-based learning	Presentations, Homework, Final Exam
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate responsibility and teamwork during group activities and field-based tasks	V1	Group presentations and collaborative tasks	Presentations, Peer Evaluation

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Ore Deposits and Economic Geology	2
2.	Classification of Ore Deposits: Metallic and Industrial Minerals	2
3.	Geological Processes of Ore Formation: Magmatic and Hydrothermal	2
4.	Geological Processes of Ore Formation: Sedimentary and Metamorphic	2
5.	Arabian Shield: Geological Setting and Tectonic Evolution	2
6.	Major Ore Provinces in Saudi Arabia	2
7.	Case Study: Gold Deposits (e.g., Mahd Adh Dhahab, Al Amar)	2
8.	Midterm Exam	2
9.	Case Study: Phosphate and Bauxite Deposits (Northern Saudi Arabia)	2
10.	Case Study: Copper and Zinc Deposits (e.g., Jabal Sayid, Al Masane)	2
11.	Industrial Minerals: Feldspar, Gypsum, Kaolin, and Silica	2
12.	Techniques for Ore Deposit Exploration and Sampling	2
13.	Environmental and Economic Considerations in Mining	2
14.	Future Trends and Opportunities in Mineral Resource Development	2
15.	Course Summary and Student Presentations	2
Total		30



D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	5	10
2.	Mid-Term Exam	8	20
3.	Presentations	12	10
4.	Homework	All weeks	10
5.	Final Exam	16	50

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Evans, A.M. (2013). <i>Ore Geology and Industrial Minerals: An Introduction</i> . 4th Edition, Wiley-Blackwell Moon, C.J., Whateley, M.K.G., & Evans, A.M. (2006). <i>Introduction to Mineral Exploration</i> . Wiley-Blackwell
Supportive References	Guilbert, J.M. & Park, C.F. (2007). <i>The Geology of Ore Deposits</i> . Waveland Press
Electronic Materials	Saudi Geological Survey (SGS) official portal
Other Learning Materials	Case studies and reports from local mining companies (e.g., Ma'aden)

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms
Technology equipment (projector, smart board, software)	Data show
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Faculty	Direct (project, HW, Quiz, midterm and final exam)



Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of Students assessment	Students	Indirect (Student Survey)
Quality of learning resources	Program Coordinator	Direct analysis
The extent to which CLOs have been achieved	Program Coordinator	Direct analysis
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Umm Al-Qura University Council
REFERENCE NO.	851110214476/195605
DATE	18/2/1447

