The Hashemite University
Faculty of Engineering
Civil Engineering Program
Course Syllabus

Course Title:	**Introduction to physical geology 3 (2,3,3)**	**Course Number:**	1804011231
Designation:	Compulsory	**Prerequisite(s):**	
Instructor:	Eng. Hussien aldeeky	**Instructor's email:**	aldeeky@hu.edu.jo
Office Hour	As shown on office door		

Course Description (catalog): Earth material, rock minerals and their characteristics, rock types and classification, rock cycle, engineering properties of rocks, weathering and weathered rocks, geologic structures, site investigation, mass movement and rock slopes, earthquakes, surface and underground water, Topographic and geological maps.

Lab.: minerals Identification, rocks Identification, site investigation, abrasion of rock, rock deformation, strength, slack durability, RQD, topographic maps, Earthquake

Textbook(s) and/or Other Supplementary Materials: Waltham T, Foundations of Engineering Geology, 3rd Edition, Taylor & Francis, 2009

Ref. Principles of Engineering Geology, by: Rebert Be…, John Wiley & Sons

Major Topics Covered:

Topics	# Weeks	Contact hours*	Lab/week	Lab Experiments
1. Introduction of Engineering Geology - Geology Vs. Engineering Geology - Civil Engineering and Engineering Geology	1/2	1		
2. Structure and composition of earth	1/2	1	1	Introduction
3. Minerals (composition, characteristics, groups)	1	2	1	Mineral properties & identification
4. Rocks cycle, and the three rock families (Igneous, Sedimentary and Metamorphic Rocks)	3	6	3	• Igneous rock identification (ID) • Sedimentary rock ID • Metamorphic rock ID
• **First Exam**				
5. Engineering Properties of rocks	2 1/2	5	3	• Slake Durability • Detection of rocks strength by simple means • Strength of rocks (point load test)
6. Mass movements and slope processes	1 1/2	3	1	• Angle of Repose
7. Site investigation	1 1/2	3	1	• RQD
• **Second Exam**				
8. Structural features (folds, Joints, Faults, ….)	1 1/2	3		
9. Earthquake	1.5	3	1	• earthquake
10. Topographic and geological maps	1.5	3		
Total	**15**	**30**	**11**	

*Contact hours include lectures, quizzes and exams

Specific Outcomes of Instruction (Course Learning Outcomes):

:After completing the course, the student will be able to:

CLO1: Acquire the knowledge of the most important rocks and minerals (1)

CLO2: Understand the relationship between rocks and engineering and understand weathering as they influence civil engineering works (1)
CLO3: Understand mass movement as they influence civil engineering works (1)
CLO4: Understand the seismic wave and earthquake. (1)
CLO5: The work in the lab allow the students to conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions (6)

Student Outcomes (SO) Addressed by the Course:

#	Outcome Description	Contribution
	General Engineering Student Outcomes	
(1)	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	H (80%)
(2)	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	
(3)	an ability to communicate effectively with a range of audiences	
(4)	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal context	
(5)	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	
(6)	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	L (20%)
(7)	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	

Grading Plan:

1st Exam	20 Points
2nd Exam	20 Points
Lab.	20 Points
Final exam	40 Points

General Notes: Lab sheets should be **submitted on high quality A4 paper** with **neat sketches**. Neatness will count and messy unorganized problems will reduce credit. ***NO Make up Exams***

Prepared by: Eng. Hussien Aldeeky **Date:** 23rd Feb. 2023