Republic of Iraq

Ministry of Higher Education and Scientific Research
Supervision and Scientific Evaluation Apparatus

College: Shatt Al-Arab University College
Department: Civil Engineering
Stage: 1st stage
Lecturer name: Dr. Ihsan Q. Mohammed
Academic title: Assistant Professor

Course Weekly Outline

Name	Ihsan Qasim Mohammed Al-abboodi			
E-mail address	IhsanQasim@sa-uc.edu.iq			
Course name	Engineering Geology			
Course objective	The course aims to provide basic information about the components of the earth's crust, types of rocks, forms of geological structures, factors and forces that affect the earth's crust, earthquakes, volcanoes, the natural properties of soil and subsurface water geology as an introduction to studying the geology of tunnels, dams and reservoirs sites, and the use of geological maps and geological survey.			
Course description	1 - Introducing the concept of engineering geology and its importance in knowing the origin, history and formation of the sphere Earth and the forces acting on its rocks. 2 - Determining the environmental problems resulting from geological phenomena, their causes, and ways to reduce their effects. 3 - Describe engineering methods for analyzing and designing systems that help solve foundation geological problems. 4 - Clarify the sources of groundwater and their relationship to surface water and how to avoid its risks during implementation Engineering Works. Explain the methods of drawing topographic sections and knowing the thickness of the layers of the earth's surface. A6- Determining the required investigation methods for the locations of important buildings and facilities and the type of geological phenomena influential.			
References	1. Principle of Engineering Geology & Practices, Al-Tai Majid Aboud Jassim			
External sources	Engineering Geology and Geological Maps book by Ibrahim Ali Abido			
Course assessment	**Lab.**	**Quizzes and assessment**	**Mid-term exam**	**Final exam**
	10	**15**	**20**	**55**
General notes				

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Week No.	Theoretical	Experimental	Aims
1	Definition of geology Earth Structure	Types of rocks	1 - Introducing the concept of engineering geology and its importance in knowing the origin, history and formation of the sphere Earth and the forces acting on its rocks. 2 - Determining the environmental problems resulting from geological phenomena, their causes, and ways to reduce their effects. 3 - Describe engineering methods for analyzing and designing systems that help solve foundation geological problems. 4 - Clarify the sources of groundwater and their relationship to surface water and how to avoid its risks during implementation Engineering Works. Explain the methods of drawing topographic sections and knowing the thickness of the layers of the earth's surface. A6- Determining the required investigation methods for the locations of important buildings and facilities and the type of geological phenomena influential.
2	Mineral groups	Types of rocks	
3	Physical properties of minerals	Types of rocks	
4	Physical and engineering properties of rocks	Types of rocks	
5	Rock cycle geological structures	Types of rocks	
6	Earthquakes Volcanoes	How to recognise rocks	
7	Geological origin and properties of soil and rivers	How to recognise rocks	
8	Transport and sedimentation in rivers	How to recognise rocks	
9	The origin and sources of subsurface water	How to recognise rocks	
10	subsurface water movement Artesian wells	How to recognise rocks	
11	topographic maps	How to recognise rocks	
12	contour lines	Hardness test for rocks	
13	Topographic Profile & vertical section	Hardness test for rocks	
14	Geological and geotechnical investigations of engineering building sites	Permeability test for soil	
15	Engineering geology and foundation problems	Permeability test for soil	