



Course Weekly Outline

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Course name	Engineering Geology			
Course objective	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. One of the strategies for this course is to give the student an idea of the stratigraphic column in southern Iraq and the oil-producing rock formations, and Identify the economic formation southern Iraq. In addition to Identify the main oilfields in Iraq.			
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	Principles of Stratigraphy. Edited by Michael E. Brookfield, 2004 by Blackwell Publishing Ltd.			
External sources	Sedimentology and Stratigraphy. Second Edition, Edited by Gary Nichols. Welly Black well. A John Wiley & Sons, Ltd., Publication.			
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	Introduction – Stratigraphy & Sedimentology – Why Bother, Development Of Stratigraphy, Phases Of Study.	Lab 1: Introduction to Subsurface stratigraphic column in southern Iraq.	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
2	Sediments and sedimentary rocks.	Lab 2: Subsurface Cretaceous stratigraphic column in southern Iraq.	
3	Stratigraphic Units.	Lab 3: The method of drawing the stratigraphic column.	
4	Sedimentary Environments.	Lab 4: The method of drawing the stratigraphic correlation.	
5	Stratigraphic Relationships	Lab 5: stratigraphic Maps.	
6	Transgression & Regression.	Lab 6: The method of drawing the structural contour map.	
7	Tectonostratigraphic.	Lab 7: The method of drawing the isothickness map.	
8	Mid-term Exam	Lab 8: Stratigraphic software.	
9	Sequence Stratigraphy	How to recognise rocks	

10	Stratigraphic problem times and places.	How to recognise rocks	
11	Tectonics and sedimentary basins.	How to recognise rocks	
12	Basin analysis.	Hardness test for rocks	
13	Petroleum System in Iraq.	Hardness test for rocks	
14	Cretaceous Stratigraphic Column Southern Iraq.	Permeability test for soil	
15	Engineering geology and foundation problems	Permeability test for soil	