

Subject : Engineering Geology

Class : First year

Hours : 2hrs (Theoretical)

Objectives:

The student will be able to gain the information about the earth materials (soils , rocks) , their minerals, properties, and their engineering applications. Also the student will learn the effect of soils and rocks foundations on the stability of structures.

Week	Syllabus
1	Introduction to the earth science, crust and interior of the earth
2	Minerals and physical properties
3	Factors effecting on the mineral physical properties
4	Mineral classification
5	Clay minerals, Minerals Expansive soil
6	Rocks, Classification of rocks ,igneous rocks
7&8	Sedimentary rocks, classification of sedimentary rocks
9	Metamorphic rocks, Stabilization of rock slopes
10&11	An engineering classification of rock materials
12	Weathering and erosion, weathering agents on structures
13	Soil, Soil profile, Soil forming processes
14	Properties of engineering soil
15	Properties of engineering rocks
16	Geological structure , Dipping layer
17	Folds, Conformities and Disconformities
18	Faults, Joints, Effect of Faults and Joints on structures
19&20	Surface water and underground water
21&22	Site investigation
23&24&25	Mass movement, causes of mass movement, classification of mass movement, creep, creep causes and treatment, landslides, causes of landslides, Earthquake due to landslides
26&27	Geological investigation, Geophysical investigation
28	Geological sites of reservoirs, Ground reservoirs, Underground reservoirs
29&30	Dams and tunnels, Type of Dams, loads on Dams, Classification of tunnels and nomenclature, Construction of tunnels.

References:

Plummer C., Diane H., 2007, “ Physical Geology”, Mc-Graw Hill, Eleventh edition

1. ن . دنكان . ترجمة كنانة محمد ثابت، 1980، "الجيولوجيا الهندسية وميكانيك الصخور" ، المكتبة الوطنية بغداد
2. كنانة محمد ثابت & محمد عمر العشو ، 1993 "أسس الجيولوجيا للمهندسين" ، الموصل ، جامعة الموصل