

## Faculty of Engineering & Technology

### Engineering Geology

**Information :**

**Course Code :** SCM 313      **Level :** Undergraduate      **Course Hours :** 2.00- Hours

**Department :** Department of Structural Engineering & Construction Management

**Instructor Information :**

Title	Name	Office hours
Associate Professor	Ahmed Mohamed Abd Elkhaleq Ebid	2
Assistant Lecturer	MUHAMMAD DIAB SAAD ELDIN ABDLAAL	2
Assistant Lecturer	Ahmed Mohamed Abdel Moniem Mohamed Soliman	22

**Area Of Study :**

- Understand fundamentals of earth formation
- Comprehend the fundamental principles of rock mechanics for the solution of practical Engineering problems and ability to recognize types of rock, joints and discontinuities.
- Identify the fundamental geological features and various problems associated with the rock formations
- Explore the fundamental definitions of soil properties
- Develop skills for analyzing experimental data and working in teams
- Share ideas and work in a team.

**Description :**

Engineering classification and properties of minerals and rocks, Nature and properties of the earth's crust, Faults, folds, joints and joint systems, Earthquakes : centre, waves, the centre of the earth, Geologic map of Egypt, Building materials, Concrete materials (aggregates and cement), Geophysics applied in civil engineering, Ground water : distribution G.W, motion of G.W., G.W. Level ,G.W. Pollution ,Problems related to extraction of G.W., Weathering problems ,Field visits to geologic sites.

**Course outcomes :**

**a. Knowledge and Understanding: :**

1 -	Explain the fundamentals of rock cycle
2 -	Define the geological properties of different rock types (Petrography).
3 -	Classify the various engineering properties of rocks
4 -	Identify the main laboratory testing on intact rocks and interpret of the test results.
5 -	Representing stress state of rock in Mohr circle
6 -	Define the main and basic definitions of soil properties

**b. Intellectual Skills: :**

1 -	Ability to define and solve problems
2 -	Ability to analyze experimental data

**c. Professional and Practical Skills: :**

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|-----|-----------------------------|
| 1 - | Using of laboratory devices |
| 2 - | Writing technical reports   |

**d. General and Transferable Skills: :**

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|-----|---|
| 1 - | Ability to work in a team   |
| 2 - | Ability to share ideas and communicate with others                            |
| 3 - | Ability to deal with others according to the rules of the professional Ethics |

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Formation of Earth	2	2	1
Rock Cycle and types of Rocks	8	8	8
Geological features	2	4	4
Engineering properties of Rocks, laboratory testing of rocks, normal, shear stresses and Mohr circle.	8	8	8
Soil Formation and different soil deposits	4	4	4
Basic properties of soil and basic definitions	4	4	4

**Teaching And Learning Methodologies :**

Lectures

Tutorials

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final exam	40.00		
First Mid Term Exam	25.00		
Performance	10.00		
Second Mid Term Exam	25.00		

**Course Notes :**

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**Recommended books :**

- " Alam Singh "Basic soil mechanics and foundations", 2004"

**Periodicals :**

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**Web Sites :**

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