UNIVERSITY of NICOSIA

Course Code	Course Title	ECTS Credits
GEOL-120	Engineering Geology	5
Department	**Semester**	**Prerequisites**
Engineering	Fall, Spring	None
Type of Course	**Field**	**Language of Instruction**
Required	Geology	English
Level of Course	**Year of Study**	**Lecturer(s)**
1st Cycle	1st	Dr Ernestos N. Sarris
Mode of Delivery	**Work Placement**	**Co-requisites**
Face-to-face	N/A	None

Objectives of the Course:

The main objectives of the course are to:

- Introduce the students to the discipline of engineering geology.
- Provide the general concepts arising from the theory of plate tectonics.
- Obtain knowledge on the internal and external processes that take place on the Earth's interior and exterior.
- Appraise the consequences that arise from the external process of the erosion cycle which include the physical and mechanical properties of soils and rocks.
- Teach methods for controlling landslides and slope stability analysis.
- Prepare the students for both theoretical and applied examples specifically designed for Civil Engineers.
- Provide the principles for field methods for geological exploration of soils and rocks.

Learning Outcomes:

After completion of the course students are expected to:

- Demonstrate knowledge of the Geology's most important theory: Plate Tectonics.
- Explain the internal and external processes of the Earth and the erosion process of the rock cycle.
- Discuss how these processes (internal and external) are useful in the analysis of the physical and mechanical properties of rocks and soils.
- Explain the implications of failures like landslides and slope stability in both weak and hard soils and rocks.
- Demonstrate practical knowledge on the solution of applied problems specifically designed for civil engineers and learn also from case studies.
- Understand and explain physical phenomena that are related with geomechanics.
- Demonstrate basic knowledge and solving skills on numerical problems in geotechnics.

Course Contents:

- Introduction to Engineering Geology.
- Geology and theory of plate tectonics.
- Physical properties of rocks.
- Mechanical properties of rocks.
- Soil and rock slopes
- Landslides of soils and rocks.
- Geological exploration of soils and rocks

Learning Activities and Teaching Methods:

Lectures, in-class examples and exercises, projects, discussion.

Assessment Methods:

Homework assignments, final project, mid-term exams, final exam.

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
David George Price	Engineering Geology: Principles and Practice	Springer	2009	9783540292494

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Tony Waltham	Foundations of Engineering Geology, 3rd Edition	Taylor Francis	2009	9780203894538
Braja M. Das, Khaled Sobban	Principles of Geotechnical Engineering, 8th Edition	Cengage Learning	2013	9781133108665