

The Hong Kong University of Science and Technology

UG Course Syllabus

[Course Title] **Engineering Geology**

[Course Code] **CIVL 4700**

[No. of Credits] 3

[Any pre-/co-requisites] None

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Course Description

The course provides students with fundamental knowledge in important geologic process, rock-forming minerals and three main types of rocks (igneous rocks, sedimentary rocks, metamorphic rocks). Hong Kong geology will be studied in details to provide students with in-depth knowledge in understanding important engineering properties of related rocks and soils. Other topics include structural geology maps and stereonet analysis, selected topics on rock mechanics and rock engineering (strength of intact rock, rock mass and joint, rock mass classification and tunnel support, rock foundation), and selected topics on geohazards (landslides, earthquakes etc). Two lab sessions will be arranged during class time for minerals and rock identification; Two physical field trips will be arranged to Hong Kong GeoParks.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Mid-Term	20%
Homeworks and reports	30%
Final examination	50%

Required Texts and Materials

- [1] Lecture notes provided to students before the class;
- [2] Richard E. Goodman, Engineering Geology: Rock in Engineering Construction, John Wiley & Sons, 1993
- [3] Guide to Rock and Soil Descriptions (GEOGUIDE 3), Geotechnical Engineering Office, CEDD, HKSAR
- [4] Engineering Geological Practice in Hong Kong, GEO Publication No. 1/2017.