

SYLLABUS

Geology 7.5 credits Q0007B

Geologi

Course syllabus admitted: Spring 2014 Sp 4 - Spring 2015 Sp 4

DECISION DATE
2014-01-16

Geology 7.5 credits Q0007B

Geologi

First cycle, Q0007B

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Berg- och mineralteknik	Mining and Mineral Technology

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language

Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

Examiner

Rob Hellingwerf

Course Aim

After successfully concluded course the student will be able to:

- Apply various methods to identify the most important minerals, ore- and rock types
- Participate in projects where systematic recording of linear and planar structures around construction sites are crucial
- Cooperate in construction projects where identification of metamorphosed and deformed geological situations with fold structures and zones of weakness are of the utmost importance
- Evaluate the employers various needs within the fields of mineral enrichment, as well as to initiate methods that lead to operational improvements
- Meet the customers demands on industrial mineral specifications
- Together with geologists and contractors participate in the development of process-oriented methodologies

Contents

The course provides knowledge on the Earth's interior and general geology, as well as on plate tectonics, structural geology, mineralogy and petrology. The physical and chemical properties of rocks and minerals are emphasised. The teaching approach is general in order to supply the student with knowledge that can be applied to most mining- and constructing enterprises. In addition, the students will acquire insight in the spatial distribution of the country rock of Sweden. In connection to mineralogy and petrology the use of a microscope is scheduled, in order to highlight the optical properties. The student is prepared for studying a possibly fourth year of geoscience at another university. The course comprises the following moments:

- The Earth's interior, plate tectonics, continental drift, subduction, volcanism, active and passive continental margins, extension, compression, mid-oceanic ridges
- Fundamental crystallography: crystal system, symmetry element and -operations, identification of crystal class
- Systematic mineralogy: mineral properties, mineral groups, silicates and non-silicates, identification of minerals
- Basic petrology: rock classification system, magmatic -, sedimentary -, volcanic and metamorphic rock types, rock-forming minerals, Streckeisen classification
- Introduction to optical analysis of minerals and rock types using a microscope.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures, laboratory exercises, practicals and excursions. The latter three are mandatory.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. The examination comprises a theoretical and a practical part. The theoretical part consists of a written exam for 4 credits. The practical part consists a practical exam for 3.5 credits, where the student identifies a number of rocks and minerals, both macroscopically and microscopially.

Literature. Valid from Spring 2014 Sp 4

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Items/credits

Number	Type	Credits	Grade
0001	Written test	4	G U 3 4 5
0002	Test	3.5	G U 3 4 5

Last revised

by Eva Gunneriusson 2014-01-16

Syllabus established

by Lars Bernspång 2012-04-03