

SYLLABUS

Advanced Rock Mechanics

7.5 credits T7007B

Avancerad bergmekanik

Course syllabus admitted: Autumn 2012 Sp 1 - Autumn 2013 Sp 1

DECISION DATE
2012-03-14

Advanced Rock Mechanics 7.5 credits T7007B

Avancerad bergmekanik

Second cycle, T7007B

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

Entry requirements

Good knowledge in fundamentals of rock mechanics and in solid mechanics. Good knowledge in geology is desirable.

Selection

The selection is based on 30-285 credits

Examiner

Maria Ask

Course Aim

The course will improve your understanding of rock mechanics. After finishing the course you will be able to

- Carry out advanced stability analyses of rock construction using numerical methods
- Design different rock constructions such as pillars, large caverns and shafts using empirical and - Numerical methods.
- Design rock support including backfill, using the design tools available for professional rock mechanics engineer
- Carry out basic probabilistic design
- Evaluate stress measurements and stress observations

Contents

- Introduction
- Stress measurements and observations
- Probabilistic design
- Numerical methods with application to rock mechanics problems
- Pillars, Large rooms – stopes, shafts, slopes
- Rock support including backfill
- Tunneling/Drifting under difficult conditions

Realization

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

The teaching consists of lectures, home assignments and a field assignment. The field trip and the written tests are compulsory.

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. Written tests, home assignments and a field assignment. Written examination with graded marks.

Literature. Valid from Autumn 2007 Sp 1

Stipulated later

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Items/credits

Number	Type	Credits	Grade
0001	Written exam	3	G U 3 4 5
0002	Required assignment	4.5	U G#

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Eva Gunneriusson 2012-03-14

Syllabus established

The plan is established by the Department of Civil and Environmental Engineering 2007-01-31 and is valid from H07.