

SYLLABUS

Tunneling 7.5 credits

T7021B

Tunnelbyggande

Course syllabus admitted: Autumn 2013 Sp 1 - Spring 2017 Sp 4

DECISION DATE
2013-06-17

Tunneling 7.5 credits T7021B

Tunnelbyggande

Second cycle, T7021B

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

Entry requirements

Basic knowledge regarding the Rock Engineering unit operations, rock blasting, geotechnology, basic rock mechanics and basic knowledge regarding mining engineering in Sweden.

Selection

The selection is based on 30-285 credits

Examiner

Catrin Edelbro

Course Aim

The course goal is to give students extended knowledge and good engineering ability regarding tunnelling, with focus on tunnelling in hard rock. You will be able to:

- choose tunnelling method and equipment
- prepare for and calculate blasting parameters, and choose explosives
- choose rock reinforcement method and equipment
- predict penetration rates and tool consumption
- prepare time plans and budgets for a tunnel

Additionally, you will have knowledge regarding

- sealing/grouting
- operation and maintenance of underground constructions
- the purchasing process
- ongoing research and rock engineering projects in Sweden and internationally

Contents

Theory of rock drilling and rock blasting, mechanical rock excavation methods, sealing/grouting, operation and maintenance of underground constructions. Environmental issues of rock engineering, tunnelling under difficult conditions, the purchasing process, ongoing research in rock engineering.

Field trip.

Realization

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

Classroom lectures and exercises, project work, and a field trip. The students will submit a written report and make an oral presentation of the project work. The students will work in groups and with problems related to Swedish rock engineering industry.

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 exam, grade F, 3,4,5.

Project work, written and oral presentation.

Mandatory field trip.

Overlap

The course T7021B is equal to T7023B

Literature. Valid from Spring 2011 Sp 3

Will be published later

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Items/credits

Number	Type	Credits	Grade
0001	Written exam	3.5	G U 3 4 5
0002	Project work, written and oral presentation	3	G U 3 4 5
0003	Obligatory study visit	1	U G#

Last revised

by Eva Gunneriusson 2013-06-17

Syllabus established

by Lars Bernspång 2010-03-01