



# AF2610 Tunnel Engineering 7.5 credits

Bergteknik och tunnlar

This is a translation of the Swedish, legally binding, course syllabus.

## Establishment

Course syllabus for AF2610 valid from Autumn 2017

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

The Built Environment

## Specific prerequisites

For students not registered on a KTH programme:

180 university credits (hp) including fundamental course in soil mechanics and foundation engineering or equivalent to at least 2-times 7,5 ECTS points Documented proficiency in English corresponding to English B.

For students registered on a KTH programme:

AF 2609 Foundation Engineering or equivalent course

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

When the course is done , those students taking part shall be able to:

Design tunnels, rock support and grouting and evaluate the most important issues in the procedure

Evaluate tunnel excavtion method from technical and production aspects

Analyse cost and time for ordinary tunnels based on risks and construction management principles

Carry out a basic design of tunnel ventilation

## Course contents

Engineering geology

Tunnel blasting

Tunnel Boring Machine

Tunnel support

Tunnel ventilation

Grouting

Enviromental issues

Tunnel cost, time and planning

Tunnel contract

Construction mangement

Risk analysis

## Course literature

Hoek and Brown: Underground excavtion of rock

Palmström and Stille: Rock Engineering

## Examination

- ÖVN1 - Exercise, 3.0 credits, grading scale: P, F
- TEN1 - Written exam, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Ten1-examination, 4.5 hp. Grade scale: A-F

Övn1-exercises, 3.0 hp. Grade scale: P,F

## Other requirements for final grade

Approved written exam

Approved exercises

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.