



# HS1018 Water Resources Engineering with GIS 7.5 credits

Vattenresursteknik med GIS

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

## Establishment

The course syllabus is valid from spring term 2020.

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

Students in year 3 of the Bachelor of Science in Engineering programme Constructional Engineering and Design.

HS1007 Fluid Mechanics

HS1009 Urban Planning

HS1029 Geology and Soil Mechanics

or equivalent courses

# Language of instruction

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

## Intended learning outcomes

Upon completion of the course, the student shall be able to:

- Perform an analysis of a community's water needs
- Design water mains for a community
- Define a catchment area for a water intake and perform a water balance calculation.
- Construct a conceptual model of an aquifer
- Identify interest conflicts at water outtakes and propose a water conservation area for the region
- Present maps in GIS
- Use simple analysis methods in GIS
- Submit a completed, written investigation of a water supply
- Give a presentation on the completed investigation

## Course contents

- Water resource issues from a global and local perspective
- System analysis in hydrology: surface water, ground water, water supply and drainoff
- Water resource planning for a catchment area, according to EC general directives
- Water needs in a community
- Design of water mains
- The quality of drinking water
- GIS
- Digital maps
- Analysis methods in GIS

## Examination

- PRO1 - Project, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 1.5 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.

## **Other requirements for final grade**

Project work (PROA, 6.0 credits), grading scale: A-F

Written examination (TENA, 1.5 credits), grading scale A-F

Overall course grade is based on grading scale A-F

## **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.