



# HS1018 Water Resources Engineering with GIS 7.5 credits

## Vattenresursteknik med GIS

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

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

## Establishment

Course syllabus for HS1018 valid from Spring 2015

## 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

## Course literature

Nordström, A: Dricksvatten för en hållbar utveckling, Studentlitteratur 2005  
Utdrag ur: Allmänna vattenledningsnät, VAV, P83, 2001

## 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.

## 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.