



# AG2411 GIS Architecture and Algorithms 7.5 credits

## GIS Architecture and Algorithms

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

### Establishment

Course syllabus for AG2411 valid from Autumn 2021

### Grading scale

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

### Education cycle

Second cycle

### Main field of study

The Built Environment

### Specific prerequisites

A completed bachelor's degree in civil engineering, urban planning, geomatics, geography, engineering physics, computer science, statistics, economics, and/or mathematics, including at least 3 university credits (hp) in each of the following or their equivalents: Programming, Linear Algebra, Calculus in One Variable, and Probability & Statistics." Together with

Eng B/6 according to the Swedish upper secondary school system.

### Language of instruction

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

## Intended learning outcomes

After completing the course the students should:

- be familiar with the architecture of a GIS system,
- have knowledge about the theory behind the most common algorithms in geographic information science,
- have knowledge about methods to handle geometric data in databases,
- have the skill of performing own modelling of geographic data using UML,
- have the confidence and skill to develop their own programming to implement new GIS applications,
- know the basic standards in GIS.

## Course contents

- Basic GIS algorithms
- Modelling of systems (UML)
- Toolkits, libraries, etc

## Examination

- PRO1 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB2 - Laboratory Work, 4.5 credits, grading scale: P, 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

Approved laborations (LAB1; 4,5 cr) (P/F)

Project, (PROJ; 3.0 cr), A/B/C/D/E/FX/F

Participation i final presentation session

## 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.