



# AG2417 Web and Mobile GIS 7.5 credits

## Webb- och mobil-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 AG2417 valid from Autumn 2014

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Built Environment

## Specific prerequisites

For admitted students to the Master of Science in Civil Engineering and Urban Management (CSAMH) or the Master of Science in Transport and Geoinformation Technology (TTGTM):

AG2425 Spatial Databases or an equivalent course

For other students:

- A completed bachelor's degree in civil engineering, urban planning, geomatics, geography, engineering physics, computer science, statistics, economics, and/or mathematics, including at least 6 university credits (hp) in each of the following or their equivalents: Programming, Linear Algebra, Calculus in One Variable, and Probability & Statistics;
- Documented proficiency in English corresponding to English B; and
- AG2425 Spatial Databases or equivalent course

Knowledge of programming language Java recommended

## Language of instruction

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

## Intended learning outcomes

The aim of the course is to teach students the fundamental theories and technologies for disseminating and processing geographic information by means of Internet and World Wide Web. For this, two specific distributed GIS architectures are studied: the Web-based and the mobile GIS architectures. It is demonstrated through case studies, laboratory exercises, and group projects that these architectures and related technologies allow 1) the creation of dynamic web maps and Internet-based geographic analysis, and 2) the provision of GIS functionality in the field through mobile GIS solutions and in a commercial setting in the form of Location-Based Services (LBSes).

At the end of the course, students should know how to design and implement web maps, Internet-based geographic analysis, and mobile GIS and LBS solutions.

## Course contents

- Basics of computer networking, Internet, WWW
- Client/server computing and the distributed component framework
- Open source and commercial (ESRI) Internet mapping software
- Standards for distributed GIS services
- Design and implementation of dynamic maps and geographical analysis via the WWW
- GPS and Mobile GIS concepts
- Professional GPS and mobile devices
- ESRI Mobile GIS software
- Mobile solutions for capturing, storing, updating, analyzing, and displaying geographic information

The course is composed of lectures, laboratory exercises, project and student presentations.

## Disposition

Lectures: 20 h

Labs: 40 h

## Course literature

Internet GIS: Distributed Geographic Information Services for the Internet and Wireless Networks, authored by Dr. Zhong-Ren Peng and Dr. Ming-Hsiang Tsou. Published by Wiley. 2003.

## Examination

- LAB1 - Laboration, 3.0 credits, grading scale: P, F
- PRO1 - Project, 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.

## Other requirements for final grade

LAB1 - Laboratory Work, 3.0 credits, grade scale: P, F  
PRO1 - Project, 4.5 credits, grade scale: A, B, C, D, E, FX, 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.