

SGO1910 - Geographical Information Systems (GIS)

Course description

Course content

Geographical Information Systems (GIS) is a computer system designed to collect, manage, edit, analyze and present spatial information. This course introduces the basic concepts in mapping and GIS that will enable the students to make use of the system to study social phenomena.

The following concepts will be covered: the history of cartography and GIS in Geography, maps and spatial representations, collection and management of spatial data, spatial analysis, map design and visualization, uncertainty and how to deal with it. Students will be introduced to critical and feminist GIS theories which form the basis for many new developments in the field, including participatory and qualitative GIS. Open-source data, software, and the Geoweb will also be explored.

The lectures will focus in particular on how to develop spatial research questions and will encourage students to think both critically and spatially. ~~IS and relevant concepts.~~ In addition, a series of seminars will enable the students to make practical use of GIS with hands-on experience.

The course will make use of ESRI ArcGIS software, in addition to introducing open-source alternatives. A group project will integrate the concepts covered in the lectures with experience from the seminars to explore a current research question.

Learning outcome

The students will:

- Understand what makes spatial data special data.
- Learn about the most common file formats, sources for data in a GIS and how to merge spatial and non-spatial data.
- Learn how to develop research questions to study spatial phenomena.
- Learn spatial analysis, and how to make use of these techniques in studying social processes and phenomena.
- Identify common errors and uncertainties and how to deal with them accordingly.

You will:

- Develop a spatial research question related to scholarly interests.
- Identify, collect and manage spatial data for use in a GIS.
- Plan and carry out your own GIS analysis on selected topic.

General knowledge

You will:

- Explain how GIS and social scientific research effectively can be integrated.
- Demonstrate the use of GIS as a social scientific research method.
- Discuss critically questions related to reliability and validity in spatial data.

Admission

Students at UiO must [apply for courses](#) in StudentWeb.

International applicants, if you are not already enrolled as a student at UiO, please see our information about [admission requirements and procedures for international applicants](#).

The examination in this course is not available for external candidates. Only students admitted to the course may sit for the examination.

Prerequisites

Recommended previous knowledge

Basic computer skills is relevant to make use of this course. The students should know how to use Windows to administer files and folders. Basic use of Excel is an advantage as much data in GIS comes in tabular formats.

Teaching

The course will be taught at Blindern Campus at the University of Oslo.

Teaching will be held in English. In addition, all syllabus will be in English.

The seminar assignments are compulsory coursework. While students do not have to attend each seminar, it is highly recommended. During the semester, two quizzes have to be answered during the course of the semester (on frontier). One mid-way and one at the end of the course. The questions will consists of questions from topics covered in lectures and seminars. Both the quizzes and all seminars must be submitted to be accepted for examination.

Completed and approved compulsory course work is valid until the course is no longer offered. Students who have failed to complete the compulsory course work cannot take the exam.

[Application for change of seminar Group](#)

Access to teaching

A student who has completed compulsory instruction and coursework and has had these approved, is not entitled to repeat that instruction and coursework. A student who has been admitted to a course, but who has not completed compulsory instruction and coursework or had these approved, is entitled to repeat that instruction and coursework, depending on available capacity.

Examination

Group assignment.

3-hour written examination.

Assessment is based on a group assignment counting 60% of final grade, and a 3-hour written examination, which counts 40%.

The group assignment should consists of 10-12 pages using 12 point letter size and line spacing 11/2, in addition to [reference list](#).

Both exams must be passed the same semester in order to receive a valid final grade.

When submitting the term paper students are required to submit a [compulsory statement](#) regarding plagiarism.

Any take home exam or essay etc. handed in at the University of Oslo may be checked for plagiarism by use of the Ephorus text recognition software.

[Previous exams](#)

Examination support material

Students may use dictionaries at this exam. Dictionaries must be handed in before the examination. Please read [regulations for dictionaries permitted at the examination](#).

Language of examination

The students can choose whether they will write the group assignment or school exam in English, Norwegian, Swedish or Danish.

Grading scale

Grades are awarded on a scale from A to F, where A is the best grade and F is a fail. Read more about [the grading system](#).

Explanations and appeals

- [Explanation of grades](#)
- [Appeal about grades](#)
- [Complaint about formal exam errors](#)

Resit an examination

- [Illness at exams / postponed exams](#)
- [Resitting an examination](#)

Withdrawal from an examination

If you wish to withdraw from the exam you must do so in StudentWeb at least two weeks [prior to the deadline](#). Failure to do so will be counted as one of the three opportunities to sit the exam.

Special examination arrangements

If you have a disability or a health problem that entails significant inconvenience in an examination situation, you may be considered for [special examination arrangements](#). Mothers who are breastfeeding may apply for extra time to complete the exam.

Evaluation

Feedback from our students is essential to us in our efforts to ensure and further improve the high quality of our programmes and courses. All courses are subject to continuous evaluation. At regular intervals we also ask students on a particular course to participate in a more comprehensive, periodic evaluation of this course.