UNIVERSITY OF GOTHENBURG

DEPARTMENT OF EARTH SCIENCES

NGN175 Geographical Information Systems, GIS, 7.5 credits

Geografiska Informationssystem, GIS, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Earth Sciences on 2013-08-21 and was last revised on 2022-08-18 to be valid from 2022-08-29, autumn semester of 2022.

Field of education: Science 100%
Department: Department of Earth Sciences

Position in the educational system

The course is included in the Bachelor's programme in biology, N1BIO, the course can also be taken as a freestanding course.

The course can be part of the following programme: 1) Bachelor's Programme in Biology (N1BIO)

Main field of studies	*Specialization*
Earth Sciences	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Entry requirements

Admission to the course requires 30 credits in the field of natural sciences.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

- demonstrate a theoretical understanding of the use of Geographic Information systems (GIS).
- identify principles of applications with GIS.

Competence and skills

- independently apply basic GIS techniques and tools to process simple problems with a focus on scientific applications.
- identify appropriate analysis tools to be able to process and analyse different types of data.

Judgement and approach

- explain and justify the use of GIS as tools to solve simple spatial problems.

Course content

Spatial data of various kinds are of great importance in scientific subjects. Geographical information systems (GIS) is a powerful tool for processing, analysing and visualising data and produce thematic maps.

This course introduces geographical information systems and its use with a focus on scientific applications.

The course consists of two components:

Component 1 Theory: provides a theoretical and practical introduction through lectures, that provides a background to GIS technology and analytical methods. Topics include, geoferencing, coordinate systems, interpolation methods and the use and properties of various types of geodata.

Component 2 Exercises: the focus is on practical exercises and compulsory written assignments dealing with relevant scientific issues where students learn practical skills.

Finally, a minor project work is carried out where the students has to demonstrate that GIS the concept is understood and can be used in an appropriate way to process a problem independently or in a smaller group.

Form of teaching

Usually written examination (distance) but other examination formats occur.

Language of instruction: Swedish and English
Lectures and exercises are mainly in Swedish. The majority of the reading list and certain exercise material is in English.

Assessment

Component 1 GIS, Theory (GIS, Theory), 4.5 credits: Fail/Pass/Pass with distinction

Component 2 GIS, Exercises (GIS, Practice) 3 credits: Fail/Pass

If a student who has twice received a failing grade for the same examination component

wishes to change examiner ahead of the next examination session, such a request should be made to the department in writing and should be approved by the department unless there are special reasons to the contrary (Chapter 6, Section 22, Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for study support for students with disabilities, the examiner may, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, decide to allow the student to sit and adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but no more than two years after the course has ceased/been changed. The same applies to internships and professional placements (VFU), although this is restricted to just one additional examination session.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

Part 1

Written examination: Pass with distinction (Pass with distinction), Pass (passed) or Fail (failed)

Part 2

Written assignments: Pass (passed) or Fail (failed)
Project: Pass (passed), Fail (failed)

Course evaluation

A written and oral evaluation is made at the end of the course. In the written evaluation, the student is anonymous. A summary of the course evaluation are available on responsible department.

The results of and possible changes to the course will be shared with the students who participated in the evaluation and students who are starting the course.