Faculty of Science

GISA23, GIS: Geographical Information Systems - Introduction 1, 7.5 credits

GIS: Geografiska informationssystem - introduktion 1, 7,5 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2021-06-08 to be valid from 2021-06-08, spring semester 2022.

General Information

The course is a freestanding course that is given as an introduction to the subject. Together with the course GISA24 (7.5 credits) the course provides an entry to further studies in the area geographical information science. The course is given as distance-learning via the internet.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
Geographical Information Science	G1N, First cycle, has only upper-secondary level entry requirements

Learning outcomes

The aim of the course is to give basic theoretical and practical knowledge about concepts and methods for treatment and analysis of geographic data with geographical Information systems, (GIS), and an introduction to cartography and geodesy.

Knowledge and understanding

On completion of the course, the student shall be able to:

- describe different conceptual models of spatial phenomena
- describe different data models for digital spatial data in vector format, describe how these are stored and advantages and disadvantages with this data model

- give an account of basic cartographic methods for vector data
- explain the characteristics of different map projections, geodesic reference systems and coordinate systems.

Competence and skills

On completion of the course, the student shall be able to:

- organise and handle digital geographic data in vector format
- independently carry out basic analyses of geographic data in vector format by using standard software for GIS
- present procedures and results from collection and analysis of geographic data in writing and as maps for specialists and laymen
- search and retrieve generally available geographic data.

Judgement and approach

On completion of the course, the student shall be able to:

- demonstrate an understanding and awareness of the importance to use geographic information and analysis in natural sciences and other relevant application fields.

Course content

The course gives a broad theoretical ground to wider work with digital geographic data. Understanding of representation and analysis of spatial elements are emphasised. The course also highlights general geographic problems within environment and society through practical GIS-applications. These treat both Swedish and international conditions and vary in scale from local to regional. The components in the GIS-technique that are treated include basic cartography including projections, reference systems, geographic data in digital form (maps, images and tables) and basic analysis of geographic data in vector format as well as cartographic and graphical presentation of digital map material. In the course, training in oral and written communication is also included. Special emphasis is placed on cartographic presentation of digital geographic data.

Course design

The course is distributed via the internet without time synchroned components. This imply that the student may study the course material when it fits the student best. The course is flexibly designed, which facilitates for the student to choose between to carry out it with 100 % or 50 % study tempo. The course is divided into thematic modules that cover the intended learning outcomes. The theoretical sections are composed by recorded video lectures and text material that is distributed via a digital virtual learning environment. Each theoretical section contains theoretical and practical written assignments, where the student demonstrates her/his understanding and trains her/his proficiencies. All written assignments are compulsory.

Assessment

Examination takes place in writing in the form of a take-home examination at the end of the course and through written reports and written assignments during the course. For students who have failed the regular examination, an additional occasion in close connection to this is offered.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass.
To pass the entire course, approved examination and passed written assignments and reports are required.

Entry requirements

General requirements and studies equivalent of course English 6 from Swedish Upper Secondary School.

Further information

The course cannot be included in a degree in geographic information science together with NGEA05 GIS and remote sensing with focus on the Environment 15 credits, NGEA11 Geographic information systems, basic course, 15 credits or GISA21 geographic information systems, introduction, 15 credits or any other course with equivalent contents.

Subcourses in GISA23, GIS: Geographical Information Systems - Introduction 1

Applies from V22

2201 Geographical Information Systems - Introduction 1, 7,5 hp
Grading scale: Fail, Pass