



Faculty of Science

NGEU22, Physical Geography: Geographical Information Systems - Basic Course, 15 credits

Naturgeografi: Geografiska informationssystem - grundkurs, 15 högskolepoäng
First Cycle / Grundnivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2019-12-04 to be valid from 2019-12-04, autumn semester 2019.

General Information

The course is offered as a commissioned education.

The course is a compulsory course for first-cycle studies for a Bachelor of Science with a specialisation in physical geography and ecosystem analysis.

Language of instruction: English

Main field of studies

Geomatics

Physical Geography and Ecosystem Science

Depth of study relative to the degree requirements

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

Learning outcomes

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

Knowledge and understanding

The student is expected to be able to:

- describe different conceptual models of spatial phenomena,
- describe different data models for digital spatial data (raster - vector), and have knowledge how these can be stored in computers,

This is a translation of the course syllabus approved in Swedish

- account for basic spatial analysis methods,
- account for basic cartographic methods,
- explain the meaning of different map projections, geodesic reference systems and coordinate systems,
- explain the basic interpolation methods,
- describe the basic structure of relational databases.

Competence and skills

The student is expected to be able to:

- organise and handle digital geographic data with computers
- independent and in groups carry out basic analyses of geographic data in raster and vector format using standard GIS software,
- present procedures and results from collection and analysis of geographic data in oral and written form as well as maps for specialists and laymen,
- carry out and present simple statistical evaluations of interpolated spatial data,
- use simple database managers (basic SQL),
- use simple navigation equipment (GPS) for collection of geographic data.

Judgement and approach

The student is expected to:

- have obtained a consciousness about the importance of, and have self-confidence for, the use geographic information and analysis within natural sciences and other application fields,
- have achieved a critical approach to geographic data and analysis result.

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 the local to the regional. The parts within GIS that are treated include basic cartography and projections, reference systems, geographic data in digital form (maps, images and tables), positioning with GPS, basic analysis of geographic data in raster and vector format and 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 teaching consists of lectures, computer exercises; individual and in groups, field exercises and project work in groups. Computer exercises, field exercises and project work are compulsory.

Assessment

Examination consists of a written exam at the end of the course combined with assignments and project reports during the course. For students not passing the regular exam, an additional exam event is offered in close proximity.

In consultation with Disability Support Services, the exam may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equal 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, Pass with distinction.

To pass the whole course, approved examination/passed written assignments/passed project report and participation in all compulsory components is required.

Entry requirements

General entry requirements and 60 credits scientific studies.

Further information

The course may not be included in qualification with, NGEA05 GIS and remote sensing with miljövårdsinriktning, 15 credits, GISA21 GIS: Geographical Information System - Introduction, 15 credits or NGEA11, Physical geography: Geographic information systems basic course, 15 credits.

Subcourses in NGEU22, Physical Geography: Geographical Information Systems - Basic Course

Applies from H21

- 2101 Exam, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction
- 2102 Project, 3,8 hp
Grading scale: Fail, Pass
- 2103 Assignments, 3,7 hp
Grading scale: Fail, Pass

Applies from H19

- 1901 Exam, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction
- 1902 Project, 3,8 hp
Grading scale: Fail, Pass
- 1903 Assignments, 3,7 hp
Grading scale: Fail, Pass