NGEA11, 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 2007-03-01 and was last revised on 2013-01-08. The revised syllabus applies from 2013-01-08, spring semester 2013.

General Information

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

Language of instruction: English

Main field of studies	Depth of study relative to the degree requirements
Physical Geography	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 of digital spatial data (raster- vector), and know how these can be stored in computers account for basic spatial analytical methods account for basic cartographic methods explain the meaning of different map projections, geodesic reference systems and coordinate systems, explain basic interpolation methods, describe basic structure of relational databases. Skills and abilities The student is expected to be able to: organise and handle 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 procedure and

results from collection and analysis of geographic data in oral, written but above all 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: had obtained a consciousness about the importance of, and self-confidence for, to 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 issues, and vary in scale from the local to the regional. The parts within GIS that is treated include basic cartography, including projections, reference system, geographic data in digital form (maps, images and tables) and 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 who have not passed the regular examination, additional examination in close connection to this is offered.

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 entire course, approved examination is required/passed written assignments/passed project report and participation in all compulsory parts.

Entry requirements

General entry requirements and 60 credits scientific studies.

Further information

The course may not be included in a higher education qualification with: NGEA05 Remote Sensing and GIS, 15 credits GISA21 GIS: Geographical Information System \x{2013} Introduction, 15 credits

Subcourses in NGEA11, Physical Geography: Geographical Information
Systems - Basic Course

Applies from H20

2001   Written exam, 7,5 hp
       Grading scale: Fail, Pass, Pass with distinction
2002   Project work, 3,8 hp
       Grading scale: Fail, Pass
2003   Exercises and hand-ins, 3,7 hp
       Grading scale: Fail, Pass

Applies from H07

0701   Geographical Information Systems, Basic Course, 15,0 hp
       Grading scale: Fail, Pass, Pass with distinction