Faculty of Science

GISN06, GIS: Geographical Databases, 7.5 credits

GIS: Geografiska databaser, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 and was last revised on 2013-01-17. The revised syllabus applies from 2013-01-17, spring semester 2013.

General Information

The course is an elective course for second-cycle studies for a Degree of Master of Science (120 credits) in geographic information science. Language of instruction: English.

Main field of studies	*Depth of study relative to the degree requirements*
Physical Geography	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

The course intends to provide advanced knowledge about geographic databases where the student should understand the full process from requirements specification to completed database.

Knowledge and understanding

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

- describe the priocess of structuring a database, how to proceed from specification via a conceptual model to a database scheme,
- account for advantages and disadvantages to store geographic data in databases compared to a file system,
- describe how geographic data can be stored in a database and how an expanded SQL language can be used to search for geographic data
- explain object-oriented concepts as object class, methods, attributes, inheritance, associations, etc.,

- account for methods for spatial indexing and
- give examples of geographic databases that are available for free and evaluate the quality of these.

Skills and ability On completion of the course, the student should be able to:

- independently create a conceptual model (class diagram) in the modelling language UML (unified modeling language) from a specification,
- independently create a database scheme in a GIS program from a conceptual model
- handle the query language SQL to create tables, insert data and search after data in a relational database and also make spatial searches in a spatial database.

Judgement and approach On completion of the course, the student should be able to:

- evaluate the work load and the complexity to create and maintain a geographic database.

Course content

The course consists of six subparts:

- Conceptual modelling in UML
- Databases and SQL
- Spatial databases
- Examples of database environments in a GIS program
- Standards and free available geographic databases
- Independent advanced assignments

Course design

The course is a distance course and is distributed on the Internet. It is flexible designed which facilitate for the student to carry out the course on full-, half-, or part-time.

Assessment

Examination takes place through written take-home examination at the end of the course combined with approval of written assignments and independent advanced study projects during the course. For students who have failed the regular examination, additional occasion 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.
To pass the entire course, approved examination, passed written assignments and reports from independent advanced assignments are required.

Entry requirements

General entry requirements including English B and 90 credits including 30 credits GIS.

Further information

The course may not be included in the higher education qualification together with GIS420 Geographic databases 5 credits, GISN06 or Geographic databases, 7.5 credits.

Subcourses in GISN06, GIS: Geographical Databases

Applies from H07

0701 Geographical Databases, 7,5 hp
Grading scale: Fail, Pass