



LUND
UNIVERSITY

Faculty of Science

GISN21, GIS: GIS and Statistical Analysis, 5 credits

GIS: GIS och statistisk analys, 5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2012-11-29 to be valid from 2012-11-30, 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

Geographical Information Science

Depth of study relative to the degree requirements

A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

The course intends to give detailed knowledge within basic statistical methods with special specialisation on geographic data. The course treats distributions, populations, statistical analysis and error propagation.

Knowledge and understanding

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

- interpret and discuss geographic data from a statistical perspective thoroughly
- understand correlation and regression analysis
- explain hypothesis test with geographic data,
- describe the error propagation that can arise in a geographic analysis at a general level
- understand spatial autocorrelation
- illustrate occasions for the use of regional variable theories.

Skills and ability

On completion of the course, the student is expected to be able to:

- use and explain statistical measures,
- independently carry out analyses and interpret results from correlation and regression analyses,
- understand and to apply special spatial methods on applicable data
- plan and carry out a hypothesis test
- carry out a geostatistical analysis by applying regional variable theory.

Judgement and approach

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

- independently evaluate and interpret both spatial and common statistical measures and methods,
- evaluate the reliability in analyses implemented with different statistical methods.

Course content

The course consists of 10 subparts

- Descriptive statistics
- Amounts of data and populations
- Correlation analysis
- Simple linear regression
- Multiple regression analysis and trend surfaces
- Spatial regression
- Spatial distributions and clusters
- Hypothesis test
- Regional variable theory

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 approval of written assignments during the course.

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, passed written assignments and passed project reports are required.

Entry requirements

For admission to the course, general entry requirements are required, English B and 90 credits completed courses including 30 credits courses in GIS. Equivalent knowledge acquired in a different way also give admission to the course.

Further information

The course may not be included in a higher education qualification together with GISN02, GIS and geostatics, 7.5 credits, NGEN07 or physical geography theory and methodology, 15 credits.

Subcourses in GISN21, GIS: GIS and Statistical Analysis

Applies from V13

1201 GIS and Statistical Analysis, 5,0 hp
Grading scale: Fail, Pass, Pass with distinction