

Syllabus

for course at advanced level

Geographic Analysis and Visualization in GIS
Geografisk analys och visualisering i GIS

**15.0 Higher Education
Credits**
15.0 ECTS credits

Course code:	GE7089
Valid from:	Autumn 2021
Date of approval:	2021-01-11
Department	Department of Physical Geography
Main field:	Physical Geography and Quaternary Geology
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This course syllabus was approved by the Board of Science at Stockholm University on 11/01/2021.

Prerequisites and special admittance requirements

Admission to the course requires knowledge equivalent to 120 ECTS credits of completed courses, of which 90 credits has to be in one of the following subjects: biology-earth sciences, geography, Earth sciences, environmental sciences, physical geography, or urban and regional planning. Or 120 ECTS credits completed courses, of which 90 credits in biology including at least 15 credits in ecology. Alternatively 30 ECTS credits from one of the Master Programmes at the Department of Physical Geography.

In addition, it is required to have knowledge corresponding to the course Applied Remote Sensing and GIS for landscape analysis 15 credits (GE7088) or at least a 7.5 credits in Geographic Information Systems (GIS). English 6 or equivalent.

Course structure

Examination code	Name	Higher Education Credits
DEL1	Theory and Case Studies	7
DEL2	Project	8

Course content

a. The course covers spatial analysis, modelling and visualization in GIS. By analysis of geographic data within the framework of a project oriented work provide knowledge of data models, data structures and database management. In the project works also database design and computer cartography are treated for presentations using GIS. The project tasks are picked from needs in research, municipalities, counties and consultancy companies.

b. The course consists of the following modules:

1. Theory 7 credits
2. Project 8 credits

Learning outcomes

After completing the course, the student is expected to be able to:

- carry out and assess data collection from maps and other sources for use in GIS (module 1, module 2)
- setting up databases for GIS (module 1, module 2)

- argue how single measurements, measurement series, e.g. with satellite and other remote sensing techniques, can be acquired, assessed, analyzed, transformed and processed for final use in GIS (module 1, module 2)
- explain how modeling in GIS can be used in national and private work as well as for research issues and argue which modeling approaches are suitable (module 1, module 2)
- visualize result and analysis made with GIS by computer aided cartography (module 1, module 2)

Education

Instruction consists of lectures, group tuition, seminars, exercises and project work.

The course is offered in English.

Forms of examination

a. The course is examined in the following manner:

- Assessment of module 1 written and oral presentations of independent exercises and project work.
- Assessment of module 2 written and oral exams of independent exercises and project work and opposition on project work.

The examiner can decide on adapted or alternative examination formats for students with disabilities.

Late submission of the individual project work and exercises has consequences for the final grade of the course. These consequences are described in detail in the grading criteria of the course.

The examination will be conducted in English.

b. A passing final grade requires participation in seminars and exercises. If special reasons exist, following consultation with the teacher involved, the examiner may grant the student exemption from the obligation to participate in certain compulsory instruction.

c. Grading: The course's final grade is set according to a seven-point criterion-referenced scale:

A = Excellent

B = Very good

C = Good

D = Satisfactory

E = Adequate

Fx = Failed, some additional work is required

F = Failed, much additional work is required

Grades of module 1 and module 2 will be set according to a seven-point criterion-referenced scale.

A passing final grade requires passing grades on all included parts.

The final grade of the course is determined by weighing the grades from all course modules, where each grade is weighed in relation to the scope of the course modules.

d. The course's grading criteria are handed out at the start of the course.

e. Students who receive a failing grade on a regular examination are allowed to retake the examination as long as the course is still provided. The number of examination opportunities is not limited. Other mandatory course elements are equated with examinations. A student who has received a passing grade on an examination may not retake the examination to attain a higher grade. A student who has failed the same examination twice is entitled to have another examiner appointed, unless there are special reasons to the contrary. Such requests should be made to the department board. The course includes at least three examination opportunities per academic year the course is offered. For the academic years that the course is not offered, at least one examination opportunity is offered

f. Students awarded the grade Fx are given the opportunity to improve their grade to E. The examiner decides on the supplementary assignments to be performed and the pass mark criteria. The supplementary assignments will take place before the next examination opportunity.

Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two-year period after the course was discontinued. Requests must be made to the departmental board. The provision also applies in the case of revisions of the course syllabus and revisions of the required reading.

Limitations

This course may not be included in a degree together with the courses Geographic Analysis and Visualization in GIS (NG3620/GE8013/GE7080) or with equivalent courses.

Misc

The course is part of Master's Programme in Geomatics with Remote Sensing and GIS, but can also be read as a separate course.

This course includes study visits, which entails costs to the student.

Required reading

The course literature is decided by the department board and published on the Department of Physical Geography's website at least two months before the start of the course.