

NGEN05, GIS/Remote Sensing in Distributed Environmental Modeling, 7.5 credits

*GIS/Fjärranalys för distribuerad miljömodellering, 7,5
högskolepoäng*

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-06-14 to be valid from 2007-07-01, autumn semester 2007.

General Information

The course is a compulsory course for second-cycle studies for a Degree of Master of Science (120 credits) in Geographic information science and remote sensing for modelling and environmental monitoring. The course is also given as a freestanding course.

Language of instruction: English

The course is given in English when necessary.

Main field of studies

Physical Geography

Depth of study relative to the degree requirements

A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

The aim of the course is that students should have acquired on completion of the course the following knowledge and skills: Knowledge and understanding

- contextual modelling of environmental factors
- "scale up" of point models to surface models, e.g. interpolation
- theoretical dynamic modelling
- algorithms/programming technique relevant to dynamic spatial modelling, and
- the complexity in respect of combining scientific/technical variables with economic, legal and social sciences variables

Skills and abilities

- independent and in groups suggest procedure and methods to solve geographic modelling problems and to carry out these with GIS
- understand and troubleshoot spatial modelling
- present results of GIS analysis orally, in writing and in the form of maps to specialists and in the subject not versed listeners

Course content

The course treats process modelling in a spatial perspective. General aim is to theoretically and practically provide the student knowledge about possibilities and problems related to use digital GIS and/or remote sensing data to model environmental factors in space and time. Both pure science/technical aspects as well as economic, legal and social sciences may be included. The course contains theoretical and practical (computer exercises) parts relevant to spatial modelling. Individual assignment and group assignment and training in oral and written presentation are included. The course is characterised by an interdisciplinary approach concerning spatial analysis.

Course design

The teaching consists of lectures, laboratory sessions, field exercises, seminars, group work and project work. Participation in laboratory sessions, field exercises, seminars, group work and project work and thereby integrated other teaching is compulsory.

Assessment

Examination takes place via written assignments and project presentations during the course and written exam. 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.

The grades in the course are passed with distinction, passed and failed. To pass the entire course, approved written exam, passed results of written assignments and presentations are required as well as participation in all compulsory parts.

Entry requirements

For admission to the course is required:

General entry requirements and at least 90 credits scientific studies including the courses NGEA11 Geographic information systems, basic course 15 credits and NGEN08 the 15 credits of Satellite remote sensing or the equivalent

Subcourses in NGEN05, GIS/Remote Sensing in Distributed Environmental Modeling

Applies from V08

0701 Remote Sensing in Distributed Environmental Modeling, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction