NAGIV, Master´s programme in Geographical Information Systems, 120.0 higher education credits

Masterprogram i geografisk informationsvetenskap, 120,0 högskolepoäng

/Program med akademiska förkunskapskrav och med slutlig examen på avancerad nivå

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1. Confirmation

The syllabus has been reviewed by Faculty of Science Board 2007-02-07 and the latest revisioned 2013-06-03 by Study programmes board, Faculty of Science.

Board:
Department: Dept of Physical Geography and Ecosystems Science

2. Programme description

The programme aims to provide the students with the opportunity to acquire detailed and systematic knowledge and critical understanding of GIS-related theories, as well as the ability to independently develop innovative solutions to complex problems regarding the management and implementation of GIS. The programme in Geographical Information Science, IGEON (GIS and Earth Observation for Environmental Modeling and Natural Resource Management) treats theoretical and practical aspects of digital geographic data analysis and should enable employment within the public and private sectors, both nationally and internationally. Additionally, the programme should be a preparation for third-cycle studies within this field.

3. Learning outcomes

Based on the learning outcomes stated in the Higher Education Ordinance 1993:100 (amend. 2006:1053) appendix 2, for a degree of Master of Science in Geographical Information Science, students shall have acquired advanced knowledge and understanding of:

- spatial geographic theory
- GIS methods and GIS technology
- the construction and utilisation of geographic databases
- the introduction of GIS to organisations
- legal aspects of GIS
- working in a scientific context
- issues of equality and diversity in science and in the global community.

Additionally, students shall have acquired the ability to

- integrate knowledge for carrying out sound GIS-related analysis in order to solve complex spatial problems
- plan, construct and handle geographic databases
- use GIS in monitoring, planning and decision-making processes
- form hypotheses and scenarios based on existing data
- assess and select relevant spatial and temporal scales
- assess and select the relevant GIS method
- make ethical and legal assessments in association with the management of GIS
- work interdisciplinarily, especially as regards the integration of qualitative and quantitative approaches
- evaluate information from different sources
- assimilate summarised and synthesised information from different sources
- structure information and empirical material
- design and plan research, development and investigative activities
- assess, reflect on and critically review literature within the subject field
- present conclusions, including the underlying knowledge and logical grounds for these conclusions, to subject specialists and laymen,
- disseminate knowledge in an advanced, structured and logical manner
- produce graphic information and written material, as well as carry out high quality oral presentations
- hold a dialogue with subject specialists and laymen
- use their skills and abilities in different forms of teamwork, and to have understanding and respect for different opinions and points of view
- make assessments with regard to the relevant scientific, societal and ethical aspects, as well as demonstrating awareness of the ethical aspects of research and development work
- study and work in a self-supervised and independent manner
- search for information, both nationally and internationally.

4. Course information

Teaching is distributed via the Internet and takes place in English. The exception is the presentation and defence of the degree project, which takes place at a personal meeting. The student is given the opportunity to carry out their studies at whatever speed they wish. The included courses are led and carried out by teams of lecturers from various universities, faculties and disciplines.

The first part (37,5%) of the programme consists of five compulsory modules, comprising 15, 10, 5, 5, and 10 (total 45) higher education credits, which provides a theoretical and practical basis for the management of GIS within various subject areas. The courses treat basic terms and analysis functions, as well as focusing on the construction and management of geographic databases for environmental studies.

The second part of the programme (62.5 %) involves a freer choice of courses, totalling 35 higher education credits. Depending on specialisation and interest, the student can carry out in-depth studies in various areas. Optional courses (5 or 7.5 higher education credits each) are offered in the following areas:

- Climate change
- Analysis of natural resources
- Environmental monitoring

- Geostatistics
- Algorithm theory
- Modelling
- Remote analysis
- Internet GIS

All optional courses include significant elements of spatial analysis/GIS. Additional optional courses may be offered.

This section is rounded off with a compulsory course in research methodology (5 higher education credits) and a compulsory preparatory course before the degree project (5 higher education credits).
During the concluding part of the programme the student undertakes a degree project of at least 30 higher education credits. The project is to be focused on treating a local, regional or global phenomenon and analysing it with the help of GIS. Methodology development may also be included. The degree project is to constitute a synthesis of the GIS competence that has been acquired during the course, combined with the skills and knowledge that was acquired during first-cycle studies, particularly as regards the student's main field of study.

5. Examination tasks

Degrees
Master (120 cre4dits) in Geographical Information Science
(Masterexamen i geografisk informationsvetenskap)

The requirements for the degree of Master are regulated in the Higher Education Ordinance 1993:100 (amend. 2006:1053) appendix 2 and in the local degree rules of 18 December 2006 at Lund University.

The programme covers 120 higher education credits including a degree project of at least 30 - 60 higher education credits. A student who has passed the programme and who has been awarded a degree of Bachelor (180 credits)fulfils the requirements of the degree of Master.
Degree titles are:
The Swedish name is Masterexamen i geografisk informationsvetenskap.
The English translation is Master of Science (120 credits) in Geographical Information Science.

6. Admission requirements and selection criteria

Entry requirements
Admission requirements and selection criteria for admission to first-cycle higher education are regulated by the Higher Education Ordinance 1993:100 (amend. 2006:1053) and in the local admissions procedure for Lund University of 18 Dec 2006.

For admission to the programme it is necessary to hold a first-cycle degree of at least 180 higher education credits or an equivalent foreign degree in a subject that is relevant to the programme, or that the requirements for such a degree are fulfilled.

Additionally, students must fulfil the special eligibility requirement of English B from upper secondary school or the equivalent.

Selection criteria
When selecting among eligible applicants, grades and other merits such as letters of recommendation and the applicants Statement of Purpose will be taken into account.

Ev. general exemptions

7. Transitional provisions

The Faculty Board may decide on the discontinuation of a programme or main field and may also decide, in association with this, on transitional provisions for students who have started these degree programmes.

8. Other information

Grades and examinations:
Rules pertaining to grades and examination are stated in the course syllabi approved by the Faculty Board.

9. Specializations