



LUND
UNIVERSITY

NAGEM, 120.0 higher education credits

Master Programme in Geomatics,

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

1. Confirmation

The syllabus was confirmed by Faculty of Science Board 2007-02-07 and the latest revisioned 2013-06-03 by Study programmes board, Faculty of Science. The revisioned syllabus is effective from 2013-06-03.

Board:

Department: Dept of Physical Geography and Ecosystems Science

2. Programme description

The programme aims to provide students with the opportunity to acquire advanced, in-depth knowledge about the formation of technical-mathematic theories and about their application, primarily in environmental and community planning, and in relation to advanced technical skills in the field. The programme comprises studies of subject areas in Geomatics, which include geographic information systems (GIS), geodesy and remote analysis. The programme should prepare students for employment in the public and private sectors, both in Sweden and abroad. 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 Geomatics, students shall have acquired in-depth knowledge and understanding of:

- methods for collecting geographic data (primarily within geodesy and remote analysis)
- how geographic data can be stored and processed in an information system

- how processing geographic information can be used to analyse problems within environmental science, community planning and other areas of application
- mathematical methods and relationships within basic information processing, visualisation of geographic data
- the conditions and requirements that must be met in order to introduce GIS in an organisation
- 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:

- independently identify and take responsibility for their need for further education and for following the development of knowledge within the field
- based on geomatic theories and methods, develop solutions to different complex problems in the areas of environmental and community planning
- cooperate with specialists within the areas of application in order to apply geographic information technologies
- analyse and logically structure problems in geographic information processing and, when necessary, write or adapt computer programs in order to solve problems
- understand what geographic data is needed in an activity, and which methods should be used to collect this data
- assess the quality of information and analysis results
- design and plan research, development and investigative activities
- introduce geographic information technology in an organisation
- assess the most important legal and ethical aspects when processing geographic information
- assess societal needs for geographic data and standards within the field
- present conclusions, including the underlying knowledge and logical grounds for these conclusions, for subject specialists and laymen
- disseminate knowledge in an in-depth, structured and logical manner
- produce written and graphic material and carry out high quality oral presentations
- hold a dialogue with subject specialists and laymen
- use their skills and knowledge 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

Courses are primarily given in the following fields of study:

- geographic information systems (GIS)
- remote analysis
- geodesy

Additional courses on offer include computer science, research methodology, advanced statistics and scientific communication.

During the concluding part of the programme the student undertakes a degree project of at least 30 higher education credits. The project may specialise in one of the following subjects:

- technical methodology development in geographic information processing
- application of geographic information processing in environmental science, community planning or other areas of application.

5. Examination tasks

Degrees

Master of Science (120 credits)
(Naturvetenskaplig masterexamen)

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

The programme covers 120 higher education credits including a degree project of 3060 higher education credits. A student who has passed the programme and who has been awarded degree of Bachelor (180 higher education credits) fulfils the requirements of the degree of Master (Two Years).

6. Admission requirements and selection criteria

Entry requirements

Selection criteria

7. Transitional provisions

8. Other information