1. **Study programme for the Master of Science in Geo-information Science and Earth Observation for Environmental Modelling and Management, 120 Higher Education Credits, at Lund University**

The study programme was approved by the Board of the Faculty of Science on 7 February 2007, in accordance with the Higher Education Ordinance 1993:100 (amend. 2006:1053). The syllabus comes into effect on 1 July 2007.

Ladok code: NAGIF

2. **Programme Description**

The programme aims to provide the students with the opportunity to acquire detailed and systematic knowledge and critical understanding of spatial environment-related processes (including data collection), as well as the ability to independently develop innovative solutions to complex problems in the area of the environment. The programme in Geo-information Science and Earth Observation for Environmental Modelling and Management (GEM) involves interdisciplinary studies in scientific, technical and social science subjects and should prepare students for employment in the public and private sectors, both nationally and internationally. Additionally, the programme should be a preparation for third level education 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 Geo-information science and Earth Observation for Environmental Modelling and Management, students must have acquired advanced knowledge and understanding of:

- principles and techniques pertaining to GIS,
- the principles of earth observation technologies, particularly as regards their use in aquatic and terrestrial environments,
- geographical theories and concepts,
- the principles of environmental management and environmental protection, particularly from a geographical perspective,
- the significance of the spatial and temporal scale when studying different processes and relationships,
– 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 a geographic context, integrate skills and knowledge in order to analyse and solve new and unknown problems within the field of the environment,
– apply geographic methodology for the sustainable care and development of aquatic and terrestrial environments,
– assimilate summarised and synthesised information from different sources,
– structure and compile information and empirical material,
– evaluate information from different sources,
– design and plan research, development and investigative activities,
– assess societal measures for managing environmental problems,
– design hypotheses and scenarios based on complex information,
– use and assess relevant spatial and temporal scales when analysing different processes and relationships,
– choose and apply pertinent methods for analysing different processes and relationships,
– 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 and written material, as well as 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 an independent and self-supervised manner,
4. **Course Information**

The programme is part of the EU Commission’s Erasmus Mundus programme and has the formal status of an Erasmus Mundus Master’s programme. The programme is run in cooperation between four European universities: Lund University, the International Institute for Geo-information Science and Earth Observation (ITC) in the Netherlands, Southampton University in Great Britain and the Institute of Geodesy and Cartography in Warsaw, Poland. The ITC is the programme coordinator.

The first term’s studies take place at Southampton University, while the second term’s studies take place at Lund University. An extended period of fieldwork takes place during the summer period. The final year of studies is primarily located at the ITC.

Courses are primarily given in the following fields of study:

- GIS
- Remote analysis
- Modelling
- Environmental science and environmental monitoring
- Utilisation of natural resources
- Landscaping and social planning

The final degree project comprises at least 30 higher education credits and is to include the application and further refinement of knowledge acquired during the period of education.

5. **Degree Requirements**

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

The programme comprises 120 higher education credits including a degree project of 30-60 higher education credits. A student who has completed the programme with approved results and who has been awarded a first level degree of 180 higher education credits fulfils the requirements of the Master’s degree.

The degree title (in Swedish) is Naturvetenskaplig masterexamen. The English translation is Degree of Master of Science. The Major area of Geo-information Science and Earth Observation for Environmental Modelling and Management is stated on the degree certificate in association with the degree title.

6. **Admission Requirements and Selection Rules**

The admission requirements and selection criteria for admission to higher education at the first level are regulated by the Higher Education Ordinance 1993:100 (revision 2006:1053) and in the Local Admission Ordinance for Lund University from 18 Dec 2006.

For admission to the programme it is necessary to hold a first level 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, the following requirements for special eligibility as regards English apply to non-Nordic students who do not have English as their mother-tongue: an internationally recognised English test, such as TOEFL (at least 550 / 213), IELTS (at least 6.0) or the Cambridge Certificate of Proficiency.

When selecting among eligible applicants, grades and other merits such as letters of recommendation and the applicant’s “Statement of Purpose” will be taken into account.

7. Other Information
Transitional provisions:
The Faculty Board may decide on the discontinuation of a programme or major and may also decide, in association with this, on transitional provisions for students who have started these degree programmes.

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