



Master Programme in Geomatics

60 credits



FACULTY OF ENGINEERING AND SUSTAINABLE DEVELOPMENT



QUALIFICATION

Those qualified to be accepted for the programme are those who have an examination at basic level consisting of a minimum of 180 credits or equivalent foreign examination with focus on Geomatics.

MASTER'S DEGREE

Extent

The masters degree is obtained after the student has completed the course requirements of 60 credits with particular focus decided on by the individual college, with a minimum of 30 credits for specialisation within the main field of study. A further demand is a completed bachelor's degree; artistic bachelor's degree, professional degree of a minimum 180 credits or equivalent foreign degree.

Exception from the demand of a previous degree can be given for a student who has been accepted for the programme without having a basic qualification in the form of a degree. This however does not apply if on acceptance an exception has been made according to chap 7 § 28 second paragraph because the degree certificate has not yet been issued.

OBJECTIVES

Knowledge and understanding

For a Degree of Master of Science degree the student shall have demonstrated

- knowledge and understanding in the main field of study, including both an overview of the field and specialized knowledge in certain areas of the field as well as insight into current research and development work, and
- specialized methodological knowledge in the main field of study.

Competence and skills

For a Degree of Master of Science degree the student shall have demonstrated

- the ability to integrate knowledge and analyze, assess and deal with complex phenomena, issues and situations even with limited information
- the ability to identify and formulate issues autonomously as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames
- the ability in speech and writing to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- the skills required for participation in research and development work or employment in some other qualified capacity.

Judgment and approach

For a Degree of Master of Science degree the student shall have demonstrated

- the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work
- insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Independent project (degree project)

A requirement for the award of a Degree of Master of Science is completion by the student of an independent project (degree project) for at least 15 credits in the main field of study.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Master of Science with a defined specialization.

Particular objectives for the programme

The student shall obtain good knowledge, understanding and problem solving ability which means deepening and/or broadening of previous university studies.

After studies the student shall have the ability and skills for work which is largely autonomous and independent and that will be required to be able to be employed as an expert in geomatics related fields and/or for continued PhD studies.

The education shall have a high international standard and the degree received should be attractive internationally.

Ability and understanding

On completion of the education the student shall show

- ability and understanding within the field of geomatics with deepened knowledge in at least one of the fields geographic information technology (GIT) or geodesy,
- insight in relevant research and development within the field of Geomatics, and
- knowledge of advanced methods for managing and analysis of geographical data.

Skills and ability

On completion of the education the student shall be able to

- integrate knowledge from the field of Geomatics and independently analyze, judge and manage complex problems,



- apply advanced methods, within a given time independently identify and formulate theoretical questions as well as plan and carry through advanced projects,
- critically summarize both orally and in writing the knowledge situation within the field of Geomatics and neighboring fields, including the latest results of research, and thereby
- give a correct and well balanced mixture of methods, results, conclusions and possible future application fields, and
- report orally and through writing on completed project work and in dialogue with both practitioners and academics make clear the usefulness of the results

Assessment ability and attitude

On completion of the education the student shall show,

- the ability to judge the effects of different methods from a technical and an environmental perspective,
- awareness of the ethical aspects of research and development work, and
- an attitude towards knowledge and life long learning which is characterised by an ability to be able to identify the need for further knowledge and a continued development of competence.

MAIN FIELD OF STUDY OF GEOMATICS

Geomatics is the collective name for individual academic disciplines, for example: photogrammetry, geodesy, land surveying, cartography, GIT, GPS, and remote sensing. The courses in this discipline are sometimes identical with courses in for example geography and spatial planning. Specialization within the programme mainly deals with advanced uses or preparation for research courses in GIT and GPS.

The programme consists of courses at both basic and advanced level. The breadth in the choice of courses offered allows for specialisation at an advanced level in one or two of the disciplines within geomatics. The courses given at basic level have two purposes. The first is to offer the opportunity for progression, that is students with insufficient knowledge in one of the disciplines in geomatics are given the possibility to catch up at basic level at the beginning of the programme and afterwards continue at advanced level. The other purpose is to offer students the chance to broaden knowledge in one or other of the subject's disciplines.

GENERAL ORGANISATION

The master's degree at Swedish Universities is given as an advanced programme after a bachelor's degree or a professional degree of 180 credits. The master's degree is a

preparation for doctoral studies, but it can also be given with a certain breadth with professional special competence in mind. According to the Higher Education Ordinance a master's degree is achieved after completed course requirements of exactly 60 credits. The education is directed towards those with a previous academic education within geomatic related subject fields who wish to further educate themselves in geomatics.

The master's advanced programme is given as studies at either full time or part time over a period of one respectively two years. At full time studies the part time courses are read two at a time except for the degree thesis work which is read full time. The programme is run preferably as a closely connected theme which embraces all aspects of the subject and discipline and is adapted for the needs of the labour market of a specially educated work force.

The programme is designed as a continuation of the student's education at basic level in the land surveying, IT with a specialisation in GIS or the spatial planning programmes of 180 credits at HiG (University of Gävle) and any work experience, but it is also open for students with an equivalent Swedish or foreign background. Great demand is placed on the degree thesis being at advanced level, which is with an academic attitude to form and content. Furthermore it should clearly focus towards future professional work. The education may be wholly or partly given in English.

COURSES WITHIN THE PROGRAMME

Students have guaranteed places for the courses within the programme. Applications for the courses for the forthcoming term should be made. Changes in the order of the courses can be made after discussion with students active in the programme. The faculty board decides on changes to the study programme's courses. Alternative course choices can be made after consultation with the Programme Director with the condition that the objectives for the programme are fulfilled.

GIT course of studies

PERIOD	COURSE NAME	CREDITS	LEVEL	MAIN FIELD OF STUDY
1:1	GIS raster/vector	7,5	B	Geomatics
1:1	Cartography 2	7,5	B	Geomatics
1:2	Spatial analysis and planning	7,5	A	Geomatics
1:2	Remote sensing and GPS, or	7,5	A	Geomatics
	River hydrology	7,5	A	Geomatics
1:3	GIScience seminar	7,5	A	Geomatics
1:3	GIT-project	7,5	A	Geomatics
1:4	Thesis	15	A	Geomatics

B = Basic level
A = Advanced level



ALUMNI

Finn Hedefalk, PhD student,
*Department of Physical Geography and
Ecosystem Science, Lund University, Sweden*

Maryam Kordi, Postdoctoral researcher,
*Faculty of Geosciences and Environment in
University of Lausanne, Switzerland*

Nancy Joy Lim, PhD student,
University of Gävle, Sweden

Chengke Liu, Engineer,
*Information Technology Center, Ningbo
Electric Power Bureau, China*

Petra Norlund, PhD student,
*Geography department, University of
Colorado at Boulder, USA*

Saman Tavakoli, Postdoctoral researcher,
Christian Michelsen Research, Norway

Alexey Tereshenkov, Engineer,
ESRI-Sweden, Sweden

Junjun Yin, Ph.D student,
*Digital Media Center, Dublin Institute of
Technology, Ireland*

DEGREE REGULATIONS

In order to obtain a degree all the courses given in the syllabus must be completed.

DEGREE

Master of Science (60 credits) with a major in Geomatics

STUDENT INFLUENCE AND EVALUATION

An Education Advisory Committee shall be associated with the Study Programme. The Programme Director shall be included in the committee and be the Chairman and Convener. The purpose of the Education Advisory Committee is to give students and representatives of the business community and the society influence on the Study Programme.

Every year, the students in the programme shall be given an opportunity to provide viewpoints on the Study Programme by means of a programme evaluation. The programme evaluation shall be carried out by using an evaluation tool common to the university. A compilation of the evaluation result shall be submitted to the Board of Education and Research.

MISCELLANEOUS

Credit transfer of courses passed is done in consultation with the Programme Director and the Subject Supervisor concerned.

TRANSITION STIPULATIONS

A student admitted to the programme in a previous year follows the curriculum that was in force at that time.

For a student admitted to a later part of the programme or a student having had an interruption of studies, a special curriculum

is drawn up by the Programme Director in consultation with the student and, when need arises, the Study Counsellor or the Director of Studies.

PREREQUISITES

Bachelor of Science (BSc) or Bachelor of Engineering (BEng) degrees in Geomatics or equivalent (e.g. geography or geology including GIS).

Also required is knowledge equivalent to Swedish upper secondary school course English B or equivalent to one of the following tests;

IELTS: an overall mark of 6.5 and no section below 5.5

TOEFL (paper-based): Score of 4.5 (scale 1-6) in written test and a total score of 575

TOEFL (internet-based): Score of 20 (scale 0-30) in written test and a total score of 90

APPLICATION

You apply to the programme online at www.universityadmissions.se. The application period starts at December 1 and deadline is January 15, 2014. Applications received after this date can only be considered if there are vacancies.

Application code autumn 2014: HIG-17075

MORE INFORMATION

www.hig.se/english or contact the student counsellor, +46 26 64 89 46 or studievagledningen@hig.se

Programme director Prof. Bin Jiang, bin.jiang@hig.se
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