

## Master's Programme in Genetic counselling

Masterprogrammet i genetisk vägledning  
120 credits

MMGV1

Valid from: 2021 Autumn semester

**Determined by**

Chairman of The Board for First and Second Cycle Programmes

**Date determined**

2020-09-29

**Revised by**

**Revision date**

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LiU-2020-03356; LiU-2021- 00678

**Offered first time**

Autumn semester 2021

**Offered for the last time**

**Replaced by**

## Introduction

The Master's Programme in Genetic Counselling provides basic knowledge within human medical genetics and genomics including genetic analysis, diagnostics and ethics. The programme is vocational, provides training in communication and knowledge of counselling and provides knowledge and skills that are applicable in a clinical setting when working as a genetic counsellor for individuals and families with, or at risk of, hereditary genetic disease. Graduates have the ability to plan and carry out genetic investigations and have a coordinating and educational function with respect to the patient, relatives, other relevant instances within the healthcare system and society.

## Purpose

The programme aims to prepare students for employment as genetic counsellors within clinical genetics, other specialist clinics or the private sector. Training completed with a result of pass aims to provide the opportunity to apply for certification via EBMG and European registration as a professional genetic counsellor. The programme also prepares students to continue their education in the academic research field (third cycle).

## Aim

### General objectives (Allmänna mål)

Chapter one of the Higher Education Act (SFS 1992:1434 including updates) have adopted the following general objectives for the second cycle respectively:

9 § Second-cycle programmes and courses should be primarily based on knowledge students receive from first-cycle studies or equivalent.

Second-cycle programmes and courses will include progression of knowledge, skills and abilities in relation to those acquired from first-cycle studies and will in addition to what applies to first-cycle programmes and courses:

- further develop the students' abilities to independently integrate and use their knowledge,
- develop the students abilities to handle complex phenomena, queries and situations,
- develop the students preparedness for professional activities which place extensive demands on independence or for work within research and quality improvement.

### Degree objectives

In accordance with the Higher Education Ordinance (SFS 1993:100 with updates), Appendix 2 - System of Qualifications:

### *Knowledge and understanding*

For a Degree of Master (120 credits) the student shall

- demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the main field of study.

### *Competence and skills*

For a Degree of Master (120 credits) the student shall

- demonstrate the ability to critically and systematically integrate knowledge and analyze, assess and deal with complex phenomena, issues and situations even with limited information
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work
- demonstrate the ability in speech and writing both nationally and internationally 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
- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

### *Judgement and attitude*

For a Degree of Master (120 credits) the student shall

- demonstrate 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
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Besides the objectives above, the students will after completing the programme, have obtained the higher institution's local objectives as well as the local objectives of the programme.

### **Local objectives for the Faculty of Medicine and Health Sciences**

Having completed the programme, the student will

- have the ability to critically appraise situations within healthcare in order to

- motivate and evaluate choice of actions as a working professional
- demonstrate knowledge about and understanding of factors which affect health from a local and global perspective
- have the ability to evaluate and apply knowledge in evidence-based medicine and quality improvement in healthcare
- be able to work for a sustainable and health promoting development of current and future generations
- have obtained inter-professional skills that enables working in teams with other professions
- demonstrate knowledge and understanding of the importance of equality and equal opportunities in society

### **Local objectives for the Master's Programme in Genetic Counselling**

#### *Knowledge and understanding*

For the Degree of Master of Science (120 credits) in Genetic Counselling at Linköping university the student shall:

- demonstrate knowledge of the disciplinary foundation of genetic counselling,
- understand the underlying biological mechanisms of phenotypic qualities and the origin of genetic disease, how genes are inherited and interact with environmental factors,
- identify and understand relationships in society and families that affect people's heredity and health and
- demonstrate their knowledge of relevant statutes.

#### *Skills and abilities*

For the Degree of Master of Science (120 credits) in Genetic Counselling at Linköping university the student shall:

- plan, manage and coordinate the work of genetic investigation and, in cooperation with other caregivers, the patient and relatives, identify wishes and needs and establish a plan for genetic investigation,
- demonstrate the ability to inform the patient in an adequate way about genetics, heredity and the potential consequences of genetic testing as well as to support the patient in a non-directive way to make informed decisions,
- identify needs for and recommend health promotion and prevention interventions based on the individual's needs and wishes,
- demonstrate the ability to inform and teach a variety of groups, and to undertake supervisory duties,
- demonstrate the ability to support patients in managing the prevailing situation with or without any genetic test result,
- demonstrate the ability to describe and discuss the results of investigations verbally and in writing with those concerned, and to document these in accordance with relevant statutes,
- demonstrate the ability to work as part of a team and with other professions, and

- demonstrate the ability to critically review, assess and use relevant information and contribute to the development of the profession and activities.

*Judgement and attitudes*

For the Degree of Master of Science (120 credits) in Genetic Counselling at Linköping university the student shall:

- demonstrate self-knowledge and the ability to empathise,
- demonstrate the ability to inform patients and relatives in a manner that promotes their ability to make informed decisions, adopting a comprehensive view of the person and on the basis of relevant scientific, social and ethical aspects, paying particular attention to human rights, and
- demonstrate the ability to adopt a professional attitude when dealing with patients and their relatives.

## Content

The main field of study for the Master's Programme in Genetic Counselling is genetic counselling. The programme is worth 120 credits, of which placements and skills training encompass approximately 45 credits and the independent project 30 credits.

### **The following courses are included in the programme:**

Medical Genetic and Genomics, part I, 5 credits (semester 1)

Ethics, Laws and Sociology, 5 credits (semester 1)

Medical Genetics and Genomics, part II, 7.5 credits (semester 1)

Psychosocial aspects in genetic counselling, 5 credits (semester 1)

Theory of Science and Methodology of Research in Medicine, 7.5 credits (semester 1)

Genetic Counselling Skills, 15 credits (semester 2)

Practical Orientation in Rare Conditions in Daily Life, 5 credits (semester 2)

Applied Genetic Counselling, 10 credits (semester 2)

Master's Degree Thesis in Genetic Counselling, 30 credits (semester 3 or 4)

Clinically Applied Genetic Counselling, 30 credits (semester 3 or 4)

### **Progression**

The specialised study in the main field is indicated by the intended learning outcomes in the syllabus for each of the courses in the programme and by the suggested course literature in the reading lists.

## Teaching and working methods

Student centred and problem based learning make up the foundation of the teaching at the Faculty of Medicine and Health Sciences. The student takes responsibility for, studies and researches current content of the courses and study programme. The methods of the course work challenge the students to independently formulate questions for learning, to seek out knowledge and assess and evaluate achieved knowledge in dialogue with others. Students work together in groups based on reality based situations to develop their own learning, contribute to co-students' learning and to practice cooperation. The teacher's role is to support the students in this way of learning.

## Entry requirements

- Bachelor's degree in relevant main area, for example
  - Occupational Therapy
  - Physiotherapy
  - Biology
  - Biomedical Laboratory Science
  - Biotechnology
  - Chemical Biology
  - Cognitive Science
  - Speech and Language Pathology
  - Medical Biology
  - Nursing Science
  - Psychology
  - Social Work
- or  
Bachelor's degree in a major subject area with relevance for Genetic Counselling
- Swedish and English corresponding to the level of Swedish and English in Swedish upper secondary education (Svenska 3 and Engelska 6)

## Threshold requirements

Each course's content builds on that of others and they must be completed in order.

To enter the courses Genetic Counselling Skills, 15 credits, Practical Orientation in Rare Conditions in Daily Life, 5 credits and Applied Genetic Counselling, 10 credits, the student is required to have passed compulsory components in the following courses: Ethics, Laws and Sociology, 5 credits, Medical genetics and genomics, part I, 5 credits, Medical genetics and genomics, part II, 7.5 credits, Psychosocial issues in genetic counselling, 5 credits. In addition, the entry requirements to the preceding courses must be met in accordance with the programme syllabus.

To enter the course Clinically Applied Genetic Counselling, 30 credits the student is required to have passed the courses: Ethics, Laws and Sociology, 5 credits, Medical genetics and genomics, part I, 5 credits, Medical genetics and genomics, part II, 7.5 credits and Psychosocial issues in genetic counselling, 5 credits and the compulsory components from the courses Genetic counselling skills, 15 credits, Practical Orientation in Rare Conditions in Daily Life, 5 credits and Applied Genetic Counselling, 15 credits. In addition, the entry requirements to the preceding courses must be met.

To enter the course Master's Degree Thesis in Genetic Counselling, 30 credits the student is required to have passed the courses: Ethics, Laws and Sociology, 5 credits, Medical genetics and genomics, part I, 5 credits, Medical genetics and genomics, part II, 7.5 credits and Psychosocial issues in genetic counselling, 5 credits and the compulsory components from the courses Genetic counselling skills, 15 credits, Practical Orientation in Rare Conditions in Daily Life, 5 credits and Applied Genetic Counselling, 15 credits. In addition, the entry requirements to the preceding courses must be met.

## Degree thesis

For a Degree of Master of Science in Genetic Counselling, the student shall have completed within the scope of the course requirements a degree project worth at least 30 credits.

## Degree requirements

A Degree of Master of Science in Genetic Counselling is achieved once the student has completed course requirements worth 120 credits.

## Degree in Swedish

Masterexamen i genetisk vägledning



## Degree in English

Master of Science in Genetic Counselling

### Specific information

- The courses in semester 1 are primarily conducted as distance learning courses but with scheduled components. There may be some campus-based components.
- Courses in semester 2 will primarily be delivered through campus-based teaching.
- The programme is full time, with the opportunity to individually tailor the course of study after year 1. Some courses/components may be conducted in English.
- The education in the workplace and field studies may take place outside of the study venue and may entail increased costs for the student.

### Common rules

Directions regarding deferment, leave from studies, returning to study, transferring of credits etc are referred to the Linköping University regulations and to the Faculty of Medicine and Health Sciences Board regulations.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

## Curriculum

### Semester 1 (Autumn 2024)

Course code	Course name	Credits	Level	Weeks	ECV
8GVA10	Ethics, Laws and Sociology	5	A1X	v202435-202439	C
8GVG10	Medical genetics and genomics, part I	5	G2X	v202435-202444	C
8GVA12	Psychosocial issues in genetic counselling	5	A1X	v202440-202444	C
8GVA11	Medical genetics and genomics, part II	7.5	A1X	v202445-202502	C
8GVA13	Theory of Science and Methodology of Research in Medicine	7.5	A1N	v202445-202502	C

### Semester 2 (Spring 2025)

*Preliminary courses*

Course code	Course name	Credits	Level	Weeks	ECV
8GVA20	Genetic counselling skills	15	A1X		C
8GVA21	Practical Orientation in Rare Conditions in Daily Life	5	A1X		C
8GVA22	Applied Genetic Counselling	10	A1X		C

### Semester 3 (Autumn 2025)

*Preliminary courses*

Course code	Course name	Credits	Level	Weeks	ECV
8GVA30	Clinically Applied Genetic Counselling	30	A1X		C/E
8GVE30	Master's Degree Thesis in Genetic Counselling	30	A2E		C/E

## Semester 4 (Spring 2026)

### *Preliminary courses*

Course code	Course name	Credits	Level	Weeks	ECV
8GVA30	Clinically Applied Genetic Counselling	30	A1X		C/E
8GVE30	Master's Degree Thesis in Genetic Counselling	30	A2E		C/E

ECV = Elective / Compulsory / Voluntary

\*Kursen läses över flera terminer