HÖGSKOLAN
I GÄVLE

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PROGRAMME SYLLABUS

SECOND CYCLE

Decision, Risk and Policy Analysis
Programme Code: NABRP
Established by the Board of Science and Technology
2009-09-17

Programme Syllabus

Master Programme in Decision, Risk and Policy Analysis, 60 HE credits, Distance

(Magisterprogram i Besluts-, risk- och policyanalys, 60 hp, distans)

This programme syllabus applies to students admitted to the autumn semester of 2010 or later.

MASTER PROGRAMME IN DECISION, RISK AND POLICY ANALYSIS
at Högskolan i Gävle

1 General Arrangement

In all sectors of the society, it is necessary to handle complicated decision problems, to discover and assess the size of different kinds of risks and to design adequate policies for different activities. Today, there are scientific results and methods, especially in software engineering, which are useful in these contexts, and within computer sciences there is a rapid development of software with the purpose of facilitating the management of complicated social problems. Examples are programs for knowledge representation in planning, simulation as the basis of prognosis and different forms of decision support and expert systems.

In the study programme in Decision, Risk and Policy Analysis, an education in central theories and basic methodology brought from, for instance, data and software engineering is given, for decision making, risk assessment and policy making.

It is common to divide the decision theory into three areas, namely normative, descriptive and prescriptive decision theory.
All three fields are covered in the study programme. Measurement, value-theoretical and cognitive aspects on decision making are presented. Ethical and legal aspects are discussed, and rational design of decision support, e.g. through visualisation, are treated.

The programme is given on distance as half-time studies.

2 Expected Learning Outcomes

2.1 Expected Learning Outcomes for Second-cycle Programmes According to the Higher Education Act, chapter 1, section 9, and Qualification Descriptor According to The Higher Education Ordinance, Appendix 2

2.1.1 Expected Learning Outcomes for Second-cycle Programmes According to the Higher Education Act, chapter 1, Section 9

Second-cycle studies should essentially expand upon the knowledge that students acquire in first-cycle studies or equivalent knowledge.

Second-cycle studies should imply a development of knowledge, skills and abilities in relation to first-cycle studies and should, in addition to the requirements of first-cycle studies, further develop the students' ability to independently integrate and utilise knowledge,

- develop the students' ability to handle complex phenomena, issues and situations, and
- improve students' conditions for professions with high demands on independence or for research and development.

2.1.2 Qualification Descriptor According to the Higher Education Ordinance, Appendix 2

Master's Degree

Extent
A master's degree is achieved when the student has successfully completed required courses of 60 HE credits with a certain specialisation decided by each higher education institution, of which at least 30 HE credits of advanced studies in the main field of study of the education.

A bachelor's degree, Bachelor of Arts, professional qualification of at least 180 HE credits or equivalent foreign higher education qualification is also required. Exceptions from the requirement of a previous higher education qualification may be made for a student who has been admitted to the education without fulfilling the general entry requirements in the form of a higher education qualification.

However, this does not apply if an exception according to chapter 7, section 28, the second paragraph, has been made in the admission because the degree certificate has not had the time to be awarded.

Knowledge and Understanding
For a master's degree, the student should

- Demonstrate knowledge and understanding of the programme's main field of study, including both an overview of the field and advanced knowledge within certain parts of the field, and understanding of current research and development, and
- Demonstrate advanced method knowledge in the programme's main field of study.

Skills and Abilities
For a master's degree, the student should

- Demonstrate the ability to integrate knowledge and to analyse, assess and handle complex phenomena, issues and situations also with limited information,
- Demonstrate the ability to independently identify and formulate issues, and to plan and with adequate methods, carry out qualified assignments within given time frames,
- Demonstrate the ability to give a clear account of and discuss the own conclusions and the knowledge and arguments constituting the basis for these in dialogue with different groups, orally and in writing, and
- Demonstrate the skills required to participate in research and development work or to work with other qualified activities.

Judgement and Approach
For a master's degree, the student should

- Demonstrate the ability to make assessments within the programme's main field of study, considering relevant scientific, social and ethical aspects, and show awareness of ethical aspects of research and development
- Demonstrate an understanding of the possibilities and limitations of the discipline, its role in society and people's responsibility for how it is used, and
- Demonstrate the ability to identify the own need of additional knowledge and to take responsibility for the own knowledge development.

Thesis (degree project)
For a master's degree, the student must have successfully completed an individual assignment (degree project) of at least 15 HE credits, within the framework of the required courses and in the programme's main field of study.

Other
For a master's degree with a certain specialisation, the specific requirements decided by each higher education institution within the requirements in this qualification descriptor, also apply.

2.2 Specific Expected Learning Outcomes of the Programme

The purpose of the education is to provide a theoretical and practical basis for working with preparations, analysis and complex decision making in industries, administration and care. To analyse, assess and take care of risks, and to analyse and design various types of policies may be included in the future work tasks.

The theoretical parts of the education will be applied in concrete problems occurring in activities such as planning in local and regional public authorities, balances in, for example, procurement or budgeting, and diagnosis and prioritising within health care.

For a higher education qualification, the student should be able to

(1) demonstrate basic knowledge of decision theory and risk analysis
(2) explain the basics of critical information management
(3) demonstrate an understanding of the theoretical basis of the software engineering methodology that may be used in decision and risk analysis
(4) practically apply different types of methodology in decision making and risk assessment, e.g. decision support systems and simulation methods
(5) critically evaluate different types of decision support and other software produced to facilitate decision making and risk assessments
(6) demonstrate the skills to design and present decision support, e.g. visually
(7) argue and process data prior to decision
(8) demonstrate knowledge of the importance of policies and other regulatory systems for decision making
(9) have a critical approach towards the application of computer support in various types of decision making, and discuss ethical aspects of decision making.

The education has a theoretical basis with elements of philosophic reflection (especially concerning ethical issues) but with focus on practical application.

3 Description of the Programme

3.1 Main Fields of Study

3.1.1 Main Field of Study Decision, Risk and Policy Analysis

Decision, Risk and Policy Analysis (DRP) has its theoretical and methodological basis within several subjects and traditions. Decision theory has developed over two centuries, and contributions to the research have come from different subject areas, such as philosophy, mathematics, economics, operations research, statistics and psychology. DRP has intradisciplinary applications in several disciplines, i.e. theories, methods and other results which have developed within the DRP area and may be applied in different disciplinary domains. But DRP also has many potential social and business applications.

The knowledge of the different aspects of decision making is a growing field that will become more important in the future. People are needed who know how to prepare and make good decisions, and which types of tools exist and in what way these may facilitate decision making. It is also urgent for the decision-makers to be familiar with the cognitive aspects that affect decision making, and to have knowledge of the role of values and understand what measurement means and how measurement results may be used in a meaningful way.

3.1.2 Degree Project

The education ends with a degree project which may constitute everything from a pure theoretical development to a case study of the application of methods. The degree project may be directed so that it is connected with the course participant's work or interest field.

3.2 Teaching and Examination

3.2.1 Teaching

The study programme is arranged as a distance education and is carried out as self-studies, exercises and different study assignments including written assignments. The learning management systems of the higher education institution have a central role in the teaching. Optional meetings may occur.

3.2.2 Examination

In the programme, the written assignments and presentation of case studies have a central role as examination formats. The examination may also be carried out as individual written or oral tests and through examination assignments solved individually or in groups.

3.3 Student Influence
There are student representatives in the board of governors, the faculty boards and in the department boards. Gefle Student Union appoints student representatives.

3.4 Sustainable Development
Advanced knowledge in decision, risk and policy analysis is important for work in sustainable development.

4 Courses in the Programme
The students have guaranteed admission to the courses within the programme. Course applications for the following semester must be submitted.
Changes in the order of courses may be made in consultation with students in the programme. Changes in the programme courses are determined by the Faculty Board. Change of period when the course given is determined on department level.

Courses in the Programme

DRP is an abbreviation for decision, risk and policy analysis.

S = Second cycle

Year 1

Period	Course Name	HE credits	Level	Main Field of Study
1:1-2	Decision and Risk in Theory and Practice 1	7.5	S	DRP
1:1-3	Measurement and Value Theory	7.5	S	DRP
1:3-4	Decision and Risk in Theory and Practice 2	7.5	S	DRP
1:2-4	Specialisation in Decision, Risk and Policy Analysis	7.5	S	DRP

Year 2

Period	Course Name	HE credits	Level	Main Field of Study
2:1	Theories and Tools for Complex Decision Making 1	7.5	S	DRP
2:2	Theories and Tools for Complex Decision Making 2	7.5	S	DRP
2:3-4	Degree Project	15	S	DRP

5 Entry Requirements
Qualified for the master's programme are those who have a first-cycle qualification of at least 180 HE credits or equivalent foreign higher education qualification.

6 Grades

Grades are given for courses included in the programme, see relevant course syllabi.

7 Examination Regulations

7.1 Title of Qualification

Degree of Master of Science (with a Major in Decision, Risk and Policy Analysis)
Filosofie magisterexamen med huvudområde besluts-, risk- och policyanalys.

7.2 Qualification Criteria

To receive a master's degree, the student must have successfully completed courses of 60 HE credits according to this programme syllabus, in addition to a first-cycle qualification of at least 180 HE credits. Within the main field of study, a degree project for second-cycle studies must constitute at least 15 HE credits.

7.3 Degree Certificates

Each degree certificate must be followed by a diploma supplement that describes the education and its place in the education system (the Higher Education Ordinance, chapter 6, section 15). The appendix is called Diploma Supplement. The Diploma Supplement should facilitate recognition and credit transfer of a Swedish higher education qualification in employment and continued studies abroad, but also in Sweden.

8 Further Instructions

If there are special reasons, one or several of the programme courses may be substituted by studies in other subjects. It applies to those who, for instance, have previously taken courses whose contents overlap one or several of the programme courses.