Department of Computer and Systems Sciences

Stockholm University

Education plan

for

Master´s Programme in Decision Support and Risk Analysis
Masterprogram i beslutsstöd och riskanalys

120.0 Higher Education Credits
120.0 ECTS credits

Programme code:	SBRIO
Valid from:	Autumn 2015
Date of approval:	2014-06-04
Department:	Department of Computer and Systems Sciences

Decision

This programme syllabus was approved by the Social Sciences Faculty Board 2014-06-04.

Prerequisites and special admittance requirements

A Bachelor degree or a degree equal to 180 ECTS

Language requirements: English B or the equivalent

Programme structure

The programme is given as a distance based programme with support from teachers and supervisors. Once per semester a non-mandatory workshop is scheduled in Kista, at the department of Computer and Systems Sciences.

The study pace of the programme is flexible; hence it is feasible to attend the programme part time.

The language of instruction is English.

One of the great assets of a human being is her ability to develop intellectual and mechanical tools for various purposes. However this does not apply in professional decision making. Here pure intuition or the use of surprisingly primitive tools dominate. One reason behind this phenomenon is that sophisticated tools require modern hardware and that decision makers outside academia seldom find the time needed to master tools developed at academical institutions. The main purpose of this programme is to fill this gap by presenting some sophisticated decision support methods and the bases for using them.

Goals

In addition to the general learning goals stated in chapter 1, paragraph 9 of the Swedish Higher Education Act, the following goals according to Higher Education Ordinance are applied:

Knowledge and Understanding
For a Degree of Master 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

Skills and competences
For a Degree of Master the student shall:

- demonstrate the ability to critically and systematically integrate knowledge and analyse, 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 to clearly report and discuss both orally and in writing own conclusions and the knowledge and argumentation which they are based on, in dialogue with different audiences in national and international contexts and

- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement ability and approach
For a Degree of Master 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 needs for further knowledge and to take responsibility for own continuous learning

In addition to the above mentioned goals, the following goals are applied:

For a Degree of Master the student shall:

- know how to structure and handle various complicated decision problems

- know how to solve decision problems by applying various decision support methods

- know how to handle various uncertainties

- know how to assess a wide range of proposed bases for decisions

- know how to assess a wide range of risk analyses

- know how to assess various proposals of risk management

- know how to assess a wide range of arguments

- have some familiarity with the basic results of logic and the theory of argumentation

- have some familiarity with various proposals for handling uncertainties

- have some familiarity with the basic results of probability theory

- have some familiarity with the basic results of utility theory

Courses
First Semester
-Decision Theory, 7,5 credits
-Risk Management, 7,5 credits
-Decision Support Methods, 7,5 credits
-Scientific Communication and Research Methodology, 7,5 credits

Second Semester
-Business Intelligence in Computer and Systems Sciences, 7,5 credits
-Risk and Decision Analysis, special problems, 7,5 credits
-Research Methodology for Computer and Systems Sciences, 7,5 credits
-Analysis of Bases for Decisions, 7,5 credits

Third Semester
-Logic, 7,5 credits
-Methodology of Decision Analysis with Advanced Applications, 15 credits
-One elective course (7,5 credits) from a list provided by the department

Fourth Semester
Master Thesis in Computer and Systems Sciences, 30 credits

Degree

The program leads to master degree in the main field of Computer and Systems Sciences.
The specialization is Decision Support and Risk Analysis.

Misc

When the programme syllabus is rescinded, the student has the right to complete the education according to the present curriculum during a settlement period comprising the programme's nominal duration plus two years. During this period the limitations stated in the syllabi apply primarily regarding the courses included in the programme, and secondarily equivalent courses are offered.

A Degree of Master is awarded after the student has completed the courses required to gain 120 credits, of which at least 90 credits of second cycle courses (including master thesis 30 credits).

To enter the second year of the programme students should have completed a minimum of 45 credits from the first year.

To write the master thesis in Computer and Systems Sciences students should have completed a minimum of 60 credits from the first year and a minimum of 10 credits from the second year.

The student may choose to interrupt his/her studies after two semesters, changing to one year Master's programme in Decision Support and Risk Analysis after a maximum period of one and a half semester, if there are available places in this programme.
In this case the Master Thesis (15 credits) replaces two compulsory courses in the second semester, according to the syllabus of the one year Master's programme.