



Programme syllabus

Faculty of Technology

Informationssystem, masterprogram, 120 högskolepoäng

Information Systems, Master Programme, 120 credits

Level

Second Level

Date of Ratification

Approved 2009-09-15

Revised 2020-06-05 by the Faculty Board within the Faculty of Technology

The programme syllabus is valid from autumn semester 2021

Prerequisites

General entry requirements for second-cycle studies and specific entry requirements:

- English B/6 or the equivalent.

Description of Programme

The objective of this programme is to provide students with deeper knowledge of Information Systems Science, with emphasis on both work and research studies. The programme also provides students with extended knowledge of design, implementation, integration and utilisation of information systems in all types of operations in the private and public section and organisations as well as preparing students for postgraduate studies in Informatics.

Objectives

Knowledge and understanding

For a Degree of Master (Two Years) students must

- demonstrate knowledge and understanding in their main field of study, including both broad knowledge in the field and substantially deeper knowledge of certain parts of the field, together with deeper insight into current research and development work; and
- demonstrate deeper methodological knowledge in their main field of study.

Skills and abilities

For a Degree of Master (Two Years) students must

- demonstrate an ability to critically and systematically integrate knowledge and to analyse, assess and deal with complex phenomena, issues and situations, even when limited information is available;
- demonstrate an ability to critically, independently and creatively identify and formulate issues and to plan and, using appropriate methods, carry out advanced

tasks within specified time limits, so as to contribute to the development of knowledge and to evaluate this work;

- demonstrate an ability to clearly present and discuss their conclusions and the knowledge and arguments behind them, in dialogue with different groups, orally and in writing, in national and international contexts; and
- demonstrate the skill required to participate in research and development work or to work independently in other advanced contexts.

Judgement and approach

For a Degree of Master (Two Years) students must

- demonstrate an ability to make assessments in their main field of study, taking into account relevant scientific, social and ethical aspects, and demonstrate an awareness of ethical aspects of research and development work;
- demonstrate insight into the potential and limitations of science, its role in society and people's responsibility for how it is used; and
- demonstrate an ability to identify their need of further knowledge and to take responsibility for developing their knowledge.

Programme specific objectives

Knowledge and understanding

After completing the course, the student should be able to:

- demonstrate knowledge in describing and analyzing information and knowledge flows in the private and the public sector.
- demonstrate an understanding of the possibilities for information systems and information and communication technology (ICT) for innovative development of private and public companies.

Skills and abilities

After completing the course, the student should be able to:

- demonstrate skill and ability in describing and explaining the private and the public sector's information needs, designing and evaluating services and system solutions as well as to meet changes in work life.

Judgement and approach

After completing the course, the student should be able to

- demonstrate a comprehensive approach to the development and use of ICT in private and public companies,
- show insights about negative and positive impacts of ICT use in different contexts, from the individual, organizational and societal perspective and,
- ability to evaluate knowledge in informatics at the scientific level.

Content

Programme overview

Major field of study is Informatics it is within the subject group Computer Science and Engineering, where Computer Science and Media Technology is included.

The program coordinator has the overall responsibility for the program. There is a program committee and their duties are to follow up the program course content and implementation.

The program consists of 120 credits in Informatics, corresponding to 2 year full time study. In the first semester students are introduced to the main field with focus on organization, design and management, and the main methods, methodologies and theories. In the second semester current challenges and phenomena in informatics to develop knowledge and skills in designing, organizing and directing and coordinating activities are discussed. Third semester links back to the program's focus: organization, design and management to enable in-depth knowledge, abilities and skills. The program concludes with a degree project.

The program consists of a minimum of 90 credits of courses in the main field informatics with gradual progression. Within these includes a degree project of 30 credits, which is based in the final year at half time alternatively at full time during the last semester of studies. The other credits consist of courses that the student chooses in informatics or other main area.

The program is structured in a way that allows for joint classes during the duration of the first year with the one-year masters program in Information Systems.

Programme Courses

The program is structured in courses of 7,5 credits and 15 credits.

Fundamentals of Information Systems, 15 credits, A1N*

The course aims to provide the student with insight into the private and the public sector, in some cases, innovative development through ICT usage and preparing for a critical and constructive approach in the development and implementation of ICT.

Contemporary issues in IS research and development, 7.5 credits

The course focuses on current problem areas in Informatics and how different theories, approaches, methods and techniques can be used based on a scientific approach. It provides as well the student with knowledge and understanding of different trends in the developments of Informatics.

Information Systems Methodology, 7.5 credits, A1N*

The course aims to provide students with basic knowledge of scientific paradigms, methodologies, and techniques in informatics / information systems. The introduction of these basic skills is also intended to give students an understanding of the relationship between research paradigm, problem area, research questions, theories and strategies for data collection and analysis.

Big Data in Organizations, Business, and Society, 15 credits, A1N*

This course focuses on aspects related to the design, organization and coordination of data and information seen from a data analytic lifecycle perspective. The course includes methods, techniques and tools for analysis of big data, which is one of the current challenges in informatics. The course also addresses ethical issues involving insights about the impact on the public and private sectors in society.

Digital Environments: Information society and Internet of things, 15 hp, A1N*

The course focus is the impact and consequences of information technology on the society, organizations and individual level. Organization, participation and interaction as well as the vision of an inclusive information society will be focused through theories and methods for User Oriented IT Design. It also aims to provide cursory understanding of the relationship between societal changes, organizational changes and the design and deployment of digital services.

Digital Capability for Organizational Agility, 7.5 hp, A1F*

Focusing on implications of digital technologies on the logics of value, competition, and organization, this course is focused on the interplay between digital capability and organizational agility. In particular, we explore how and why investments in new digital competencies affect cycles of exploration and exploitation in modern organizations.

Systemic Perspectives on Digital Transformation, 7.5 hp, A1F*

The course focuses on the systemic interplay between organizational and IS strategies from one hand and the context in which such struggles emerge to create, deliver and capture value. The course covers systems thinking concepts and models that are useful for digital transformation of organizations and businesses, including a holistic perspective of digital and organizational strategies. Methods and techniques for analyzing organizational structures and processes are also addressed in this course.

Theories of Information Systems, 7.5 credits, A1F*

The course aims to provide students with advanced knowledge and experiences on the history of science and theories in informatics / information systems. The introduction of these skills also aims to give students an understanding of the relationship between research paradigm, problem areas and different traditions / theories and approaches for research in informatics / information systems area.

Elective courses

Ethics and profession in Information Technology, 7.5 credits

This course includes knowledge relating to how to professionally approach information technology and what it means to have an ethical approach to IT.

Knowledge sharing in global information systems teams, 7.5 credits

Theory and method for understanding and explaining knowledge sharing in global teams. It provides as well understanding of theories and methods explaining cultural perspectives of global teams. Moreover, it gives knowledge about theories and methods to codify and transfer of knowledge, particularly in global teams.

The student will also choose 7,5 credits elective courses or study abroad during this semester.

Degree project 30 credits, A2E*

The program is completed in semester 4 through a degree project in which the student is given the opportunity to deepen their knowledge and skills in the subject area and its methodologies.

* = courses within the main field Informatics

The courses within the program may change places.

Community contacts

Contacts with the surrounding world and future labour market are introduced in several different ways. In some courses practical cases are included and associated with information systems in private and public companies or the alternative that students are given tasks that are appropriate to solve in collaboration with organizations. Contacts with the outside world are also established in the concluding degree project through empirical studies.

Studies abroad

Studies abroad can be pursued on the initiative of the student. The studies are preferably made within the exchange programmes of the University. Confirmation that individual courses abroad can be included within the Master's Programme should be obtained in advance. Timing of studies abroad is made in consultation with programme coordinator. tentatively during 3rd or 4th semester.

Scope of the programme

Master's programme is an international programme with a large percentage of international students. Therefore, different perspectives are reflected through internationalization, sustainable development and these are natural diversity points for discussion in the course assignments. Courses that include methods and approaches are also conducted with critical reflections on how technology use can be studied and evaluated from the perspective of e.g. sustainable development, gender and diversity. Throughout the program's courses the impact of digital technology and its use in society are also discussed.

Quality Development

The program is evaluated on a yearly basis through written and oral evaluations, conducted by teachers and students. Programs valuations are handled by the Faculty of Engineering and the Department of Informatics. Contacts with potential employers and alumni also provides information on the students' employability. For each course a course evaluation is conducted. The course evaluations, as well as program evaluations, managed by the Department of Informatics and the program committee in order to develop the quality of education. Compilations of course and program evaluations are available at the Department.

Degree Certificate

Students who successfully pass the study programme can apply for a degree certificate. If you have attended the Masters Programme in Information System, you are eligible for the following degree:

Filosofie Masterexamen med inriktning informationssystem
Huvudområde: Informatik

Master of Science (120 credits) with specialisation Information Systems.
Main field of study: Informatics

The degree certificate is bilingual (Swedish/English). This certificate is also complemented with a Diploma Supplement (in English).

Other Information

To start the degree project the student must have following: General requirements for studies at advanced level. And minimum 60 credits within the subject area Informatics at advanced level or 30 credits informatics and 30 credits in other subject at advanced level. In both alternatives this credits must include Information Systems Methodology, 7,5 credits, and one of the following courses History and Philosophy of Science 7,5 credits and Systems Thinking 7,5 credits or equivalent. This is regulated by the prerequisites of the syllabus for the degree project.