



School of Economics and Management

EAGIF, Master's Programme (One year) in Information Systems, 60 credits

Magisterprogram i informationssystem, 60 högskolepoäng

Second cycle degree programme requiring previous university study / *Program med akademiska förkunskapskrav och med slutlig examen på avancerad nivå*

Decision

The programme syllabus is established by Deputy Dean of Education at the School of Economics and Management 24-08-2020 (U2020/709) and most recently amended 16-10-2020. The amended syllabus is valid from 16-10-2020, autumn semester 2020.

Programme description

The objective of this master programme is that students, after completion, have acquired a deeper understanding and knowledge of important facets of Information Systems (IS), Information Systems Design (ISD) and Information and Communication Technology (ICT).

This programme focuses on how information and communication technologies and artificial intelligence can be used to achieve strategic goals, and how to design and develop modern information systems, which are flexible to the goals and needs of the organisation. You will gain a deeper understanding of the wider business context of information systems and how digitalisation affects organisations.

Since information systems are prevalent in almost every aspect of modern business and are required to achieve today's business strategies, it is important to understand the wider business context of information systems as well as how they should be designed to reach sound technical performance and interaction qualities. Modern information systems do not have to be limited to the standard desktop computer or terminal and can be designed for user needs of mobile workers or business men, which places new demands on design work and interaction models.

Likewise, many of the bread-and-butter systems are either already built (and exist as

legacy systems) or are nowadays ICT commodities bought in the form of COTS (Commercial off-the-shelf) like Enterprise Resource Planning (ERP) systems, Supply Chain Management (SCM) systems, Business Process Management Systems (BPMS), Enterprise Decision Management (EDM) systems, and so on. These are then deployed in the organisation. Thus, the role of IS and ISD changes to accommodate new use patterns and business processes and strategies in a world of agile and global e-Businesses.

The overall goal of the programme is to provide students with an advanced understanding of these aspects of IS and ISD. Following this comprehensive goal, theoretical concepts, models and tools will be compared with real and complex problems in IS and ISD in order to train students in advanced problem solving. The programme also aims at introducing, explaining and applying the methodological aspects of studying ISD.

The programme is capabilities-driven which means that after completing the programme the students have specific valuable IS design capabilities and skills. The programme serves to provide the students with deepened and thorough knowledge of IS theories, concepts, techniques and their applications.

Career opportunities

Graduates from this programme are in high demand as organisations rely on information systems experts to understand, design and develop systems that help them remain competitive in today's global marketplace. The programme provides outstanding career opportunities both nationally and internationally, and is aimed at students seeking to pursue careers that links technology, people and business.

Connection to further studies

Successful completion of the programme will enable students to apply to postgraduate studies at the doctoral level in informatics/information systems.

Goals

The programme builds on previous studies at the undergraduate level in information systems related subject matters. In accordance with the Higher Education Ordinance, a Master of Science (60 credits) is awarded to students who at the completion of the programme accomplish the following:

Mission driven learning outcomes

Graduates of the programme will be trained as reflective practitioners in taking an active part in developing a sustainable society building on innovative thinking.

Knowledge and understanding

For a Master's degree (60 credits) students must:

- demonstrate knowledge and understanding within the field of information systems, including both a broad command of the field and deeper knowledge of certain parts of the field, together with insight into current research and

- development work
- demonstrate deeper methodological knowledge in the field of information systems
- demonstrate thorough knowledge and understanding of information systems, with a particular emphasis on the methods and practices of information systems design
- demonstrate an understanding of how information systems theories and models can be used to analyse a broad range of problems in today's business and society

Competence and skills

For a Master's degree (60 credits) students must:

- demonstrate an ability to integrate knowledge and to analyse, assess and deal with complex phenomena, issues and situations, even when limited information is available
- demonstrate an ability to independently identify and formulate issues and to plan and, using appropriate methods, carry out advanced tasks within specified time limits
- 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
- demonstrate the skill required to participate in research and development work or to work in other advanced contexts
- demonstrate an ability to solve information systems design problems
- demonstrate an ability to integrate methods from different areas of organisation, management, information systems, and information and communication technology
- demonstrate an ability to work individually as well as in groups with students from different cultures in order to solve practical problems as well as to manage a more extensive project

Judgement and approach

For a Master's degree (60 credits) students must:

- demonstrate an ability to make assessments within information systems, 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
- demonstrate an ability to identify their need of further knowledge and to take responsibility for developing their knowledge

Independent project (degree project)

For a Master of Science (60 credits) students must have completed an independent project (degree project) worth at least 15 credits in information systems within the framework of the course requirements.

Course information

The academic year is structured in two semesters, which are further divided into two study periods each. The courses run parallel during the first, second and third study period.

Period 1

In the first study period the students follow two mandatory courses:

INFN25 IT, Innovation, and Sustainability, 7.5 credits (mandatory)

The course examines how ICT can be used as a tool that enables evaluation and innovation in how firms communicate and optimize environmental performance. The course further discusses sustainability from a Green IT perspective, where focus is on manufacturing, using and disposing of IT related products such as computers, servers, printers, monitors and network solutions. The end result of the course should be an increased understanding of how Green IT is a sustainability issue that companies and individuals need to relate to. After completion of course objectives, the student will have the ability to validate total cost of ownership of the IT infrastructure, understand how companies can increase IT effectiveness and efficiency and thereby lower their carbon footprint, as well as have an ability to discuss IT's role in any formal sustainability programme.

INFN40 Strategic Management and Information Systems, 7.5 credits (mandatory)

The course gives increased knowledge in Strategic Planning of ICT support for business development, and provides a clear understanding of control principles for coordination of business development and ICT. The course examines strategic structures in the enterprise. Further the course covers control models for business oriented IT-Governance. Control of ICT investments and ICT costs related to enterprise efficiency and business development is studied. The course addresses planning, control, and use of enterprise systems in organisations.

Period 2

In the second study period the students follow one mandatory course and one elective course:

INFN01 Information Systems Research Methods, 7.5 credits (mandatory)

The course deals with some of the most common qualitative and quantitative research methods and techniques used within information systems research and advanced professional investigation. The course also deals with design science research in information systems and technology. Different assumptions concerning the nature of the world and our knowledge about it, as well as the purpose of research, are discussed in relation to various research methods and techniques. The course also brings to the fore the issue of writing up research, i.e. the written presentation of research results.

INFN35 Human-Computer-Interaction Design, 7.5 credits (elective)

The HCI Design course concentrates on user-centred design and design theory of digital artefacts. The course consists of three parts: theory, design workshops, and a design project. Course lectures progress through four segmented sections: interaction design and system development, interaction design versus traditional design work, UbiComp (Ubiquitous Computing) and interaction design beyond the desktop, methods and models for interaction design. Students work in groups of three to five on projects that they specify, and seek and explore non-traditional uses of computing and ICT artefacts.

INFN45 Business Intelligence, 7.5 credits (elective)

The course concentrates on design of Business Intelligence (BI) solutions. BI is a broad category of applications, technologies, and processes for gathering, storing, accessing, and analysing data to help business users make better decisions and take actions. The students should acquire knowledge on how to design BI solutions for different BI targets. Three specific BI targets can be identified: 1) point solutions, single or a few related applications, 2) enterprise-wide BI, providing organisational BI infrastructure, and 3) BI to support organisational transformation, enabling new business models. The BI targets differ in terms of their focus; scope; level of sponsorship, commitment, and resources required; technical architecture; impact on personnel and business processes; and benefits. Issues related to BI data management (from separate BI databases to real-time data warehousing), meta-data, data quality, BI governance, and BI benefits are addressed. Contemporary BI trends will be covered. The trends include, scalability (more data, more users, and more complex queries), pervasive BI, operational BI, and the BI-based organisation (how organisations can compete on analytics).

Period 3

In the third study period the students choose two elective courses out of the following three available courses:

INFN50 Business Decision Management, 7.5 credits (elective)

Through this course the students will be able to understand the design and implementation of highly servitized and agile businesses where processes and decisions are managed as two distinct but interrelated aspects and assets. In more detail you will: further your understanding of the need for Separation of Concerns in Information Systems Design (ISD); learn how to design, model and manage operational business decisions according to Decision Model and Notation (an OMG standard); learn how to digitalise, automate and manage decision logic using a Business Rules Management System (BRMS) for hot deployment; learn business process modelling on a basic level to automate operational work flows that connect decision tasks to decisions services.

INFN60 Designing Digitalisation, 7.5 credits (elective)

The course focuses on the opportunities and challenges, and the forces driving digitalisation of society, modern organisations, businesses and industries. This includes design, societal, ethical and environmental aspects, as well as managerial concerns

from a local and global perspective. After completing the course, a student will be well prepared by theories, methods and techniques to participate in the digital transformation.

INFN65 Business and Artificial Intelligence, 7.5 credits (elective)

All organisations are affected by and dependent on processes, decisions and their digitalisation. Most of today's managerial work requires knowledge and toolsets to manage business to be supported by and automated through Artificial Intelligence (AI). Moreover, to get real business value from AI, businesses must focus their efforts in AI on improving processes and decisions. This course aims to provide an insight into designing business and Artificial Intelligence supporting business.

On completion of the course, students shall have a thorough understanding of how processes, decisions and AI shape today's businesses and their design. Students shall be able to identify problems that can be solved by, or decisions that can be made or supported by AI in a business and be able to implement solutions to aid the aforementioned.

The course focuses on the challenges that business digitalisation and Artificial Intelligence poses in the modern organisation. To properly manage business, both managerial and technological aspects must be considered in conjunction. By studying business and Artificial Intelligence and through hands on workshops, the course focuses on how AI and business digitalisation alters internal and external parts of business within and across organisations.

Period 4

The fourth study period is devoted to the degree project where the students conduct their own research and demonstrate their ability to independently apply the knowledge gained from the course work. In the project work, the students further enhance their knowledge and understanding of information systems. The degree project is conducted in pairs and a supervisor is assigned to each degree project.

INFM10 Master thesis/Degree project, 15 credits (mandatory)

The Master Thesis involves independent work in teams of two students addressing a research problem. This is an independent piece of work, which means that the student-teams must themselves find a problem-area, they will not be provided with pre-defined problems. The problem-area must be relevant to information systems/informatics as a social science. Next the student-team must formulate a research-question and present a relevant theoretical framework, which provides the basis for planning and conducting an empirical investigation. The student-team must also draw conclusions from the empirical investigation and the theoretical framework. Finally the investigation and the findings must be presented in a written thesis, which is examined at a seminar.

In the thesis the students will use quantitative or qualitative approaches, or some combination of these. The course on Information Systems Research Methods provide them with the appropriate knowledge and tools.

Additional information in appendix EAGIF Programme structure.

Degree

Degree titles

Degree of Master of Science (60 credits)

Major: Information Systems

Filosofie magisterexamen

Huvudområde: Informationssystem

Degree requirements

The degree requirements for a Degree of Master of Science, major in Information Systems consists of 60 credits at advanced level. The following must be included in the degree: the courses that comprises the current programme structure (see appendix) which includes the course INFM10 Master Thesis, 15 cr.

Requirements and Selection method

Requirements

An undergraduate degree (BA/BSc) with at least 60 credits of IS related courses. These must include: 1) Foundations and Role of IS, 2) Systems Analysis and Design, 3) Data and Information, 4) Human-Computer Interaction, and 5) Organisation and IS. English 6.

Selection method

Based on previous university/college studies and Statement of Purpose.

Other information

Programme management

The programme director, who is appointed by the Board of LUSEM, is responsible for the quality development and quality assurance of the programme. The Board of the School also assigns each programme to a host department at LUSEM. The host department is responsible for providing professional services to the students and faculty of the programme.

Each programme also organizes a programme management group, in which student representatives and faculty representatives of the programme, together with the programme director, coordinator and other professional services meet regularly.

All programmes at LUSEM are evaluated yearly and the outcome of a programme scorecard is presented to the Board of the School as part of LUSEM's Quality Development and Assurance system.

Grading scale

At the School of Economics and Management grades are awarded in accordance with a criterion-based grading scale A-U(F):

A (Excellent) 85-100 points/percent. A distinguished result that is excellent with

regard to theoretical depth, practical relevance, analytical ability and independent thought.

B (Very good) 75-84 points/percent. A very good result with regard to theoretical depth, practical relevance, analytical ability and independent thought.

C (Good) 65-74 points/percent. The result is of a good standard with regard to theoretical depth, practical relevance, analytical ability and independent thought and lives up to expectations.

D (Satisfactory) 55-64 points/percent. The result is of a satisfactory standard with regard to theoretical depth, practical relevance, analytical ability and independent thought.

E (Sufficient) 50-54 points/percent. The result satisfies the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought, but not more.

U/F (Fail) 0-49 points/percent. The result does not meet the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought.

To pass the course, the students must have been awarded the grade of E or higher.

It is up to the teaching professor to decide whether the credits of a course should be converted into a total of 100 points for each course, or if the scale above should be used as percentage points of any chosen scale instead.

Academic integrity

The University views plagiarism very seriously, and will take disciplinary actions against students for any kind of attempted malpractice in examinations and assessments. The penalty that may be imposed for this, and other unfair practice in examinations or assessments, includes suspension from the University.

Programme structure for Master's Programme in Information Systems

The programme of 60 credits has the following structure:

Semester 1, Autumn (30 cr)		Semester 2, Spring (30 cr)	
Period1 Sept-Oct	Period 2 Nov-Dec	Period 3 Jan-March	Period 4 Apr-June
<p><i>Two mandatory courses:</i></p> <p>INFN25 IT, Innovation, and Sustainability (7.5 cr)</p> <p><i>and</i></p> <p>INFN40 Strategic Management and IS (7.5 cr)</p>	<p><i>One mandatory course:</i></p> <p>INFN01 Information Systems Research Methods (7.5 cr)</p> <p><i>and one of the following courses:</i></p> <p>INFN35 Human-Computer-Interaction Design (7.5 cr)</p> <p><i>or</i></p> <p>INFN45 Business Intelligence (7.5 cr)</p>	<p><i>Two of the following courses:</i></p> <p>INFN50 Business Decision Management (7.5 cr)</p> <p><i>or</i></p> <p>INFN60 Designing Digitalisation (7.5 cr)</p> <p><i>or</i></p> <p>INFN65 Business and Artificial Intelligence (7.5 cr)</p>	<p><i>One mandatory course:</i></p> <p>INFM10 Degree Project (15 cr)</p>

The School's programme portfolio is continuously developed and sometimes changes to courses may occur after you have accepted your study seat. These changes are usually a result of student feedback, or research development. Changes can take the form of altered course content, teaching formats or assessment styles. Any such changes are intended to enhance the student learning experience. If the programme includes elective courses, students will in most cases be placed in the elective(s) of their choice, but there are no guaranteed places.

1 credit (cr) = 1 ECTS credit