



Faculty of Economic Sciences, Communication, and IT

## Programme Study Plan

### Master Programme in Information Systems

<b>Programme Code</b>	SAINF
<b>Programme Title:</b>	Master Programme in Information Systems (two years)
ECTS Credits	120
<b>Approval</b>	The programme study plan was approved by the Faculty Board of Economic Sciences, Communication, and IT 7 June 2012 and is valid from the autumn term of 2012. It replaces the former study plan of 7 November 2011.
<b>Language of Instruction:</b>	English
<b>Degree Level:</b>	Master's
<b>Degree Type:</b>	General
<b>Prerequisites</b>	Upper Secondary English course B or equivalent, and a Bachelor's degree of 180 ECTS credits including at least 90 ECTS credits in Information Systems or Computer Science.

#### General Information

The Master Programme in Information Systems is an Master's-level, two-year programme with a major in *Information Systems*, offering students the opportunity to broaden their knowledge base in Information Systems and develop the skills required

to analyse and develop the architecture of organisational and technical systems boundaries.

The programme prepares the students for advanced work positions in organisations in need of solving complex information systems development problems. The programme provides a good basis for research.

The programme welcomes international students. All instruction and communication will be in English.

## **Aims**

### *Knowledge and understanding*

To be awarded a Master's degree of 120 ECTS credits the student should:

- demonstrate extensive knowledge and understanding of theoretical perspectives in the field of Information Systems,
- demonstrate extensive in-depth knowledge and understanding regarding current research trends and development in the field of information systems, and
- demonstrate in-depth knowledge of research methodology in information systems design.

### *Competencies and abilities*

To be awarded a Master's degree of 120 ECTS credits the student should:

- demonstrate the ability to integrate theory from the field of Information Systems critically and systematically in order to solve complex information systems development problems in organisational contexts,
- demonstrate the skills to analyse and design enterprise system architectures across organisational and technical system boundaries,
- demonstrate the ability to identify and formulate research problems independently and creatively,
- demonstrate the skills to plan, carry out and evaluate qualified tasks within a given timeframe by applying adequate information systems modelling methods and design techniques, thus contributing to the development of organisational knowledge,
- demonstrate the ability to translate stakeholder requirements into design solutions in order to facilitate organisational changes,
- demonstrate the skills to clearly communicate design solutions in oral, written and graphical form;
- demonstrate the skills required to participate in research and/or development projects in the field of Information Systems, working independently with relevant design tasks.

### *Judgement and approach*

To be awarded a Master's degree of 120 ECTS credits the student should:

- demonstrate the ability to make relevant judgments, based on scientific, technical design and on social and ethical considerations in information systems development,
- demonstrate awareness of the possibilities and limitations of science, its role in society, and individual responsibility for its results, and
- demonstrate ability to identify organisational and IT-system redesign needs.

### *Independent Degree Project*

To be awarded a Master's degree the student is expected to complete an independent project of at least 30 ECTS credits in the field of Information Systems.

### **Programme Structure**

The programme includes advanced studies in *Information Systems*, and emphasises a combination of theoretical reflection, problem solving and design work.

The overall structure of the program can be described as follows:

- Semester 1 - mandatory coursework of 15 ECTS credits in the field of Information Systems and a mandatory joint faculty course, Advanced Professional Skills of 15 ECTS credits.
- Semester 2 and 3 – optional courses (at least 15 ECTS credits) and elective courses in the field of Information Systems.
- Semester 4 - degree project of 30 ECTS credits in the field of Information Systems.

Detailed learning outcomes are specified in the respective course syllabus. Depending on course, instruction can take the form of lectures, exercises, case studies, seminars, project work, and oral and written presentations.

### **Programme Curriculum**

#### *Semester 1*

Mandatory courses:<sup>1</sup>

#### *Current Research in Information Systems (7,5 ECTS credits)*

The course focuses on current research areas within Information Systems, such as business-driven IT design, system developments and learning organisations, methods and models for multimedia production, standardised and component-based systems as well as organisational models and re-organisations. The aim of the course is to provide an overview of current information systems research in the areas of use and development of information systems as well as with regard to system development tools.

#### *Theory of Science and Methodology (7,5 ECTS credits)*

The aim of the course is to give an overview of the foundations of the theory of science and research methods in order to provide perspectives on the role and position of science in society, as well as to give a basis for further studies of scientific knowledge

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<sup>1</sup> Students who have not studied usability testing, interaction design, or system analysis and design on the Bachelor level may postpone one of the first two mandatory courses till a later semester and instead take a relevant course at Bachelor level in these subjects. Students, who wish to do so, are advised to consult the Director of Studies in the first week of the semester.

formation within information systems. The course includes basic theory of science and various science traditions as well as basic theory of knowledge to legitimise knowledge of different information systems problems.

*Advanced Professional Skills (15 ECTS credits, Progression D)*

This is a joint faculty course. The course will develop the skills to identify and formulate business problems and to analyse and assess them. Cases in marketing, management and other fields of business administration will be studied in the course. Students develop the skills to organise research projects as well as the ability to communicate results, orally and in written form. The course includes three modules to: Research Methods, Scientific Writing and Project Management.

*Semester 2 and 3*

Students choose at least one of the following optional courses:

*Models and Experimental Methods in Multimedia Development (15 ECTS credits)*

The course aims to provide students with enhanced skills in identifying factors that have a bearing on human-machine interaction, especially in terms of putting together a specification of engineering requirements for multimedia projects. The objective is also that students acquire familiarity with different experimental methods for developing and evaluating user interfaces.

*Advances in Information Systems Modelling (15 ECTS credits, Progression D):*

The course focuses on advances in information systems modelling approaches. The focus of the course is to give an overview of existing information system modelling approaches and to introduce a new paradigm for information systems modelling. The main focus of the course is on modelling and integration of various information systems architecture dimensions. The service-oriented paradigm is used for the modelling and integration of various diagram types.

*Electronic Commerce and Enterprise Systems (15 ECTS credits)*

The aim of the course is that students develop their knowledge of the necessity to develop and maintain effective relationships with customers, suppliers and third-party organizations. Electronic Commerce systems and Enterprise Systems, which represent the largest information system investments a firm is likely to make, are important enablers for these relationships. A number of themes will be presented and discussed during the course.

Elective courses:

Students choose one of the two courses at Master's level entitled Research Projects in Information Systems, 15 ECTS credits or 30 ECTS credits, but are also free to choose other courses. Students are required to have completed at least 60 ECTS credits at Master's level in Information Systems in semesters 1-3 to be eligible for the Degree Project course

*Semester 4*

Mandatory course:

*Degree Project (30 ECTS credits)*

Students carry out a research project in a chosen specialisation area. The project must centre on a problem of relevance to programme content, thus reflecting the scope and area of a Master's Degree.

**Degree Title**

Degree of Master of Science (120 ECTS credits)

Major: Information Systems

**Credit Transfer**

According to the Higher Education Ordinance (Ch. 6, § 12-14), students may transfer credits from previously completed university courses subject to approval. Transfer of credits for a full course, or other credits, is subject to the approval of the Student Centre Officers.

**Additional Information**

The local regulations for Bachelor and Master level studies at Karlstad University stipulate the obligations and rights of students and staff.