Programme Syllabus

Integritet, informationssäkerhet och cybersäkerhet - masterprogram
Privacy, Information and Cyber Security - Master's Programme
120 credits

Programme Code: IICMA
Academic Level: Advanced level
Version: 2
The Programme Syllabus is valid from: Autumn term 2020
Date of Approval: 17 April 2019

1 Name and Scope of the Study Programme
The programme is provided by the University of Skövde and is named Privacy, Information and Cyber Security - Master’s Programme. It comprises 120 credits.

2 General Objectives
Courses and study programmes on the advanced level shall involve the acquisition of specialist knowledge, competence and skills in relation to courses and study programmes on the basic level, and in addition to the requirements for courses and study programmes on the basic level shall:

- further develop the ability of students to integrate and make autonomous use of their knowledge,
- develop the students’ ability to deal with complex phenomena, issues and situations, and
- develop the students’ potential for professional activities that demand considerably autonomy, or for research and development work.

(Objectives for courses and study programmes on the advanced level, The Higher Education Act)

3 Programme Objectives
The main area of education is informatics with a specialisation in privacy, information security and cyber security.

Objectives for Master’s Degree according to the Higher Education Ordinance

Knowledge and understanding
For a Degree of Master (120 credits) 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.

Competence and skills
For a Degree of Master (120 credits) 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 in speech and writing both nationally and internationally to clearly report and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.
Judgement and approach
For a Degree of Master (120 credits) 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 need for further knowledge and take responsibility for his or her ongoing learning.

Local Objectives for the Study Programme according to the University of Skövde
After completion of the study programme, the student should be able to demonstrate

- in-depth knowledge and understanding of the program’s themes of privacy, information security and cyber security respectively, but also deepened knowledge and understanding of the relationships between these fields linked to the digitization of sustainable development.

4 Programme Content
The program provides a broad and in-depth knowledge and understanding as well as substantial insight into the sociotechnical area of the subject area of informatics. The focus for deepening is privacy, information security and cyber security. Privacy is the science of how personal information should be protected both technically and administratively in order to safeguard personal integrity and not disclose sensitive information when processing personal data. Information security and cyber security focus on the preservation of information’s availability, integrity and confidentiality through a risk-based approach. The program takes a holistic perspective on these themes, which involves studying different theories, methods and techniques in the themes respectively, but also at an overall level, link aspects of privacy with information security and cyber security and vice versa. The emphasis of the program is on data protection, information security management, network security and critical infrastructure.

The program has three main themes based on basic and broad understanding of the subject area of informatics and important basic knowledge for the themes such as network and system administration, method and system development as well as programming. With this basic understanding, knowledge and skills in these areas are deepened through theory and practice as well as in an independent project where the students themselves can formulate a problem and solution to a personal integrity, information security and/or cyber security issue. Application of analytical methods and the need for systematic information security and cyber security work with maintained personal integrity goes as a red thread through the program. The program ends with an individual degree project where the student is trained to identify and address an issue of privacy, information security and cyber security with a scientific approach. The student has the opportunity to start from a problem from the previous courses or alternatively formulate a new question based on the lessons learned.

The following courses are included in the program

- Principles of Privacy, Information Security and Cyber Security A1N, 7.5 credits
- Practical cryptology A1N, 7.5 credits
- Privacy A1N, 7.5 credits
- Information Security Management A1N, 7.5 credits
- Network security operations A1N, 7.5 hp
- Cyber Security for Internet of Things and Critical Infrastructures A1N, 7.5 credits
- Project in Privacy, Information Security and Cyber Security A1F, 15 credits
- Optional course, 7.5 credits
- Optional course, 7.5 credits
- Information Security Management - Research A1F, 7.5 credits
- Digital forensics for incident response A1F, 7.5 credits
- Master Degree Project in Informatics with a specialization in Privacy, Information Security and Cyber Security A2E, 30 credits
5 Admission Requirements
A Bachelor degree of at least 180 higher education credits (equivalent to a Swedish kandidatexamen) within the fields of informatics or computer science or similar.

A further requirement is proof of skills in English equivalent of studies at upper secondary level in Sweden, known as English course 6 / English course B. This is normally demonstrated using an internationally recognized test, e.g. IELTS, TOEFL or the equivalent.

The above admission requirements apply for admission to the programme. For further studies within the programme, the admission requirements for each course must be complied with. These admission requirements are specified in each separate course syllabus.

6 Degree
Those who complete the programme’s courses with a pass grade also comply with the requirements for Degree of Master of Science (120 credits) with a major in Informatics.

Degrees are awarded after application. Information about how to submit an application can be found on the University’s website.

7 Approval of Study Programme and Programme Syllabus
The study programme was approved by the Vice-Chancellor at the University of Skövde on 4 June 2018. This programme syllabus was approved by the Faculty Board at the University of Skövde on 17 April 2019. It is valid from the autumn semester of 2020 and replaces the programme syllabus approved on 28 June 2018.

8 Changes to the Programme Syllabus
The programme studies are carried out in accordance with the current programme syllabus in effect at the time when the studies were initiated, provided that the structure of the programme is followed and that no leave of studies has been granted.

In the event of continued studies after a period of approved leave of studies, the students is to follow the programme syllabus in effect the term that the student resumes his/her studies. If substantial changes to the programme syllabus have been made, the student may contact a student and career counsellor in order to set up an individual study plan.

Reservations are made for the fact that the programme syllabus and its courses are subject to change, within the framework of the objectives of the programme.

9 Additional Information
The teaching is conducted in English.

Further information about the study programme will be available on the University’s web pages prior to a programme start.

National and local regulations for higher education are available on the University’s website.

During the programme, as well as after its completion, there are follow-ups. The main purpose of these follow-ups is to contribute to improvements of the programme. The students’ experiences and views constitute one of the criteria for the follow-up and are gathered by means of programme evaluations. The students will be informed of the results of the follow-up and any decisions regarding actions that are to be taken.