



Programme syllabus

Faculty of Technology

Påbyggnadsutbildning inom datavetenskap, kandidatexamen, 60 högskolepoäng

Complementary studies for a Bachelor degree in Computer Science, 60 credits

Level

First Level

Date of Ratification

Approved by the Faculty Board within the Faculty of Technology 2015-11-13

The programme syllabus is valid from autumn semester 2016

Prerequisites

120 credits of which at least 60 credits must be in Computer Science or the equivalent.

Description of Programme

The complementary education shall together with previous studies give the student in-depth knowledge in the Computer Science field. After the education, the student will be well prepared for software development work in systems and engineering projects. It also prepares for studies at advanced level in Computer Science.

Students should also see opportunities to start their own businesses.

The courses in the program are focused on software development with courses in architecture, testing and other basic skills for software developers. The programme provides some room for elective courses, which students can strengthen their previous profile.

Objectives

Knowledge and understanding

For a Degree of Bachelor students must

- demonstrate knowledge and understanding in their main field of study, including knowledge of the scientific basis of the field, knowledge of applicable methods in the field, in-depth knowledge of some part of the field and a general sense of current research issues.

Skills and abilities

For a Degree of Bachelor students must

- demonstrate an ability to seek, gather and critically interpret information that is relevant to a problem and to critically discuss phenomena, issues and situations;
- demonstrate an ability to independently identify, formulate and solve problems and to perform tasks within specified time limits;

- demonstrate an ability to present and discuss information, problems and solutions in dialogue with different groups, orally and in writing; and
- demonstrate the skills required to work independently in the field that the education concerns.

Judgement and approach

For a Degree of Bachelor students must

- demonstrate an ability to make assessments in their main field of study, taking into account relevant scientific, social and ethical aspects;
- demonstrate insight into the role of knowledge in society and into people's responsibility for how knowledge is used; and
- demonstrate an ability to identify their need of further knowledge and to upgrade their capabilities.

Programme specific objectives

After completion the student should be able to:

- create safe, robust and user-friendly applications for different types of devices; design, analyze, and validate complex software systems; implement projects including requirements specification, software design and continuous delivery to the system environment (implementation)
- understand the fundamental principles of entrepreneurship and business development.

Content

Organization

The programme is administered by a program coordinator. The quality of the programme, its development and connection to the working life is ensured by the Programme Board, which manages the other courses in Computer Science.

Programme Overview

The programme comprises 60 credits and includes a final degree project of 15 credits. The education is mainly focused on courses in Computer Science (field of study), but it also provides opportunities to select courses outside the subject.

Programme courses

Computer Science (G2F), 7,5 credits - Foundations of Software Technology gives an introduction to software testing, studies of more complex data structures and algorithms and time complexity.

Computer Science (G2F), 7,5 credits - Object Oriented Analysis and Design includes knowledge of object-oriented analysis and design, gives the basics of the modeling language UML and how the design will be implemented in an object oriented programming language.

Computer Science (G2F), 7,5 credits - The course Continuous Delivery includes studies of automatic test systems for the integration of newly developed software into existing software systems.

Computer Science (G2F), 7,5 credits - Software testing covers introduction to software testing with terminology and standard approaches, different test tools, and the study of the testing process.

Computer Science (G2F), 7,5 credits - The course Software Architecture covers the software's conceptual architecture and its impact on reusability, and modeling principles of architectural design.

Business Administration (G1N), 7,5 credits - The course Entrepreneurship provides knowledge about the concepts of mission, business model and business development, as well as strategies for starting and developing sustainable and growing companies.

Computer Science (G2E), 15 credits - Degree Project at Bachelor level

In cases where the student already possesses knowledge equivalent to the courses referred to the student should choose alternative courses in consultation with the programme coordinator. This is done partly to give the student a personal profile, partly to ensure that local graduation requirements and specified programme objectives are met.

Community Contacts

Within the framework of the programme, students have the opportunity to implement their thesis together with a company or another external organization. In these cases the problem is defined in cooperation with the company and the work is done to a large extent at the company or the external organization.

Studies Abroad

The students take part of the entire range of agreements with foreign universities that are offered to students at Linnaeus University. Study abroad is done in consultation with the programme coordinator and is done during the first semester.

Scope of programme

In education, working with sustainable development by ensuring that students gain skills that will be relevant and applicable for a longer period of time. The acquired knowledge is therefore time-independent and more a general nature. Regarding sustainable development, we refer here to people and their needs and how the technology can ensure that those needs continue to be met.

The internationalization perspective within the programme is met mainly by providing the opportunity for collaboration with universities abroad, but also through the inspiration and learn from how universities internationally conducts their teaching and research in Computer Science.

Quality Development

Course evaluations are carried out for all courses in the programme. Every year there is also an annual programme evaluation. It is predominantly the programme council that monitors quality assurance and ongoing development of programme. Students are represented in all these bodies and participate in course and programme evaluations. Both the programme and course evaluations are filed and are available for inspection at the University.

Degree Certificate

After completing programme studies, corresponding to the requirements expressed in the Higher Education Ordinance Degree Ordinance as well as Linnaeus University Local Degree Ordinance, the student may apply for a degree. Those who have completed the programme may obtain the following degree:

Filosofie kandidatexamen

Huvudområde: Datavetenskap

Bachelor of Science

Main field of study: Computer Science

The degree certificate is bilingual (Swedish/English). The Degree Certificate is accompanied by a Diploma Supplement (in English).

Other Information

Some programme courses allow students to participate in excursions, practical training, internship and studies abroad. These activities are not mandatory but may incur costs that the students must normally bear themselves. In connection to the program start and termination, representative lunches / equivalent may occur.