



FACULTY OF ARTS AND SOCIAL SCIENCE

Bachelor's Programme in Information Systems Development

Systemvetenskapliga programmet

Programme code: SGSYS

ECTS Credits: 180

Education level: First cycle

Degree type: General qualification

Language of instruction: Swedish and English

Finalized by

Faculty Board of Arts and Social Science, 2025-11-06

Valid from

Autumn semester 2026

Entry requirements

General entry requirements plus either

Mathematics 3b or 3c, Social Studies 1b or 1a1+1a2, English 6

or

Mathematics Further level 1b or 1c, Social Studies 1b or 1a1+1a2,
English level 2.

Introduction

The Bachelor's Programme in Information Systems Development is offered with Information Systems as the main field of study. The programme is designed to give students a thorough understanding of information systems and business development. The aim is also for students to acquire knowledge and understanding of the approaches, theories and methods of information technology in the areas of business development and information systems development.

The programme provides students with theoretical and practical insights into the interactions between humans, organisations and IT systems. Students approach digitalisation from these perspectives and develop their ability to apply their academic expertise in practice. They also engage in group assignments and seminars where they work to develop sustainable systems, as well as discuss gender equality issues related to information systems. The programme wants to encourage student motivation, self-reflection and commitment in the learning processes through student-centred learning.

Programme outcomes

For programme completion, students must meet the national degree requirements.

National outcomes

Knowledge and understanding

For a Degree of Bachelor the student shall

- demonstrate knowledge and understanding in the main field of study, including knowledge of the disciplinary foundation of the field, knowledge of applicable methodologies in the field, specialised study in some aspect of the field as well as awareness of current research issues.

Competence and skills

For a Degree of Bachelor the student shall

- demonstrate the ability to search for, gather, evaluate and critically interpret the relevant information for a formulated problem and also discuss phenomena, issues and situations critically
- demonstrate the ability to identify, formulate and solve problems autonomously and to complete tasks within predetermined time frames
- demonstrate the ability to present and discuss information, problems and solutions in speech and writing and in dialogue with different audiences, and
- demonstrate the skills required to work autonomously in the main field of study.

Judgement and approach

For a Degree of Bachelor the student shall

- demonstrate the ability to make assessments informed by relevant disciplinary, social and ethical aspects
- demonstrate insight into the role of knowledge in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the need for further knowledge and ongoing learning.

Independent project (degree project)

A requirement for the award of a Degree of Bachelor is completion by the student of an independent project (degree project) for at least 15 credits in the main field of study.

Programme structure

In the first semester, students take courses in information systems, including both programming and business administration. The second semester covers courses in programming as well as web programming and business administration. All courses included in the first year are mandatory.

In the third semester, students take mandatory continuation and application courses focused on databases, modelling and programming. The fourth semester consists of optional courses and students have the opportunity to pursue studies abroad.

The fifth semester covers mandatory courses in programming and interaction design, as well as elective courses in testing and project management. In the sixth semester, the programme concludes with two courses in software architecture and systems integration, as well as an independent project worth 15 credits, which can be conducted in collaboration with a company or public agency.

Instruction is in the form of lectures, laboratory sessions, seminars and project work.

Scientific methodology is covered over several semesters of the programme. Through lectures, seminars, practical exercises and examinations, students are introduced to different methods and given the opportunity to apply these in different contexts.

Programme curriculum

The Bachelor's Programme in Information Systems Development comprises 180 credits, including 90 credits in information systems as the main field of study. Graduates have the opportunity to pursue either a Degree of Master (60 credits) by completing another 60 credits or a Degree of Master (120 credits) by completing another 120 credits.

The study route of the programme is outlined below. Note that the titles and order of the programme courses may vary.

Semester 1

Introduction to IT design, 7.5 credits
Enterprise and IT, 7.5 credits
Acquisition of IT systems, 7.5 credits
Introduction to programming, 7.5 credits

Semester 2

Introduction to business administration, 7.5 credits
HTML and CSS for web development, 5 credits
JavaScript for web development, 5 credits
Advanced course in programming, 7.5 credits
Serverside programming in JavaScript, 5 credits

Semester 3

Database design, 7.5 credits
Object-oriented modeling with programming, 7.5 credits
Software development, 7.5 credits
NoSQL databases, 7.5 credits

Semester 4

Optional courses, 30 credits

Examples of optional courses (subject to availability):

Information systems: practical training 7.5 credits
Information systems - smaller thesis work 7.5 credits
Business development from a process and partnership perspective 7.5 credits
C#.NET 7.5 credits
Business by web and web analytics 7.5 credits
Cloud Foundations 7.5 credits
Accessibility of digital services and digital documents 7.5 credits

Semester 5

Development of apps for mobile e-Services, 7.5 credits
Agile project management, 7.5 credits (or User tests, prototyping and evaluation 7.5 credits, if project management is studied in semester 4)
Design patterns, Java, and UML, 7.5 credits
Interaction design, 7.5 credits

Semester 6

Information systems - Bachelor's project, 15 credits
Software architecture, 7.5 credits
Systems integration, 7.5 credits

Title of qualification

Degree of Bachelor of Science
Major: Information Systems

Credit transfer

According to the Higher Education Ordinance, Chap. 6, Sect. 6-8, students have the right to transfer credits and have prior higher education studies recognised upon approval.

Additional information

The local regulations for first and second cycle education at Karlstad University stipulate the obligations and rights of students and staff.