The Faculty of Arts and Social Sciences

Programme Syllabus

Reg.no. HS 2024/279

IT-Design

Programme Code:	SGITD
Programme Title:	Study Programme in IT-Design
Credits:	180
Programme Approval:	The programme syllabus was approved by the Faculty Board of Arts and Social Science on 4 March 2024, effective from the autumn semester of 2024.
Language of Instruction:	Swedish and English
Education Cycle:	First (Bachelor's level)
Degree Type:	General
Qualification requirements	General admission requirements plus English 6, Mathematics 3b or 3c and Civics 1b or 1a1 + 1a2.

General Information

The programme provides a broad base in the IT field with the opportunity for students to specialise in one of the following areas: Enterprise Systems and Economy, or Information Systems Design. The aim of the specialisation in Enterprise Systems and Economy is that students acquire knowledge and understanding of the approaches, theories and methods of information technology and business administration in the areas of business development, service development, data analysis and enterprise systems. The aim of the specialisation in Information Systems Design is that students acquire knowledge and understanding of the approaches, theories and methods of information technology in the areas of business development and information systems development.

This programme in the subject Information Systems offers students good theoretical and practical knowledge of relations between humans, organisations, and IT systems. The

programme includes approaches to digitalisation from these perspectives and students develop their ability to apply academic knowledge and take responsibility for sustainable development and gender equality. The programme wants to encourage student motivation, self-reflection and commitment in the learning processes through student-centred learning.

The aim of the programme is for students to acquire a platform in and useful knowledge of digitalisation as a basis for a career in business and/or systems development.

Aims and Learning Outcomes

The programme outcomes are based on the national outcomes required for a Degree of Bachelor.

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
During the first year, students study basic courses in information systems and business administration as a basis for further studies and future professional activities.

During the second and third year, students study continuation and application courses that can be mandatory, elective, or optional. An elective course is one among a limited range of choices, for example "courses in business administration", while an optional course is any course offered at Karlstad University or elsewhere.

A degree project, preferably carried out in partnership with a corporation or public agency, concludes the education.

All students, regardless of specialisation, have opportunities to study abroad. For the Enterprise Systems and Economy specialisation the best period to study abroad is semester 5 and semester 4 for Information System Design students.

Programme Curriculum

The education comprises 180 credits including 90 credits in the main field of study. Students who have earned a Bachelor's degree can add one or two years to qualify for a Master's degree of 60 credits or of 120 credits. 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 main field of study for the Enterprise Systems and Economy specialisation is Information Systems. The Bachelor's degree gives eligibility for Master level studies in Information Systems. Provided the Bachelor's degree includes the following courses, students are also eligible for Master level studies in Service Management and in Marketing at Karlstad University:

Business Administration I, 30 credits
Leadership and Organisation, 7.5 credits
Information for Business Decisions, 7.5 credits
Enterprise Systems I: Models for Analysis, 7.5 credits
Enterprise Systems II: Models for Analysis, 7.5 credits
Service Management and Information Technology: e-Business, 15 credits
Information Systems – Bachelor's project, 15 credits

The main field of study for the Information Systems Design specialisation is Information Systems. The Bachelor's degree gives eligibility for Master level studies in Information Systems.

The programme's study route. Note that the titles and the order of the programme courses may vary.

<u>Enterprise Systems and Economy</u>
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
- Business Administration I, 30 credits

Semester 3
- Database Design, 7.5 credits
- Introductory Statistics for Data Analysis, 7.5 credits
- Business Simulation and Analytics, 7.5 credits
- NoSQL Databases, 7.5 credits

Semester 4
- Enterprise Systems I: Models for Analysis, 7.5 credits
- Enterprise Systems II: Customer-Oriented Models, 7.5 credits
- Leadership and Organisation, 7.5 credits
- Information for Business Decisions, 7.5 credits

Semester 5
Service Management and Information Technology: e-Business, 15 credits
– Optional courses, 15 credits. Examples of optional courses (subject to availability):
Information Systems: Practical Training 7.5 credits; Interaction Design 7.5 credits; Business by

Web and Web Analytics 7.5 credits; and General Project Management Methodology 7.5 credits (distance course).

Semester 6
- Information Systems – Bachelor's thesis, 15 credits
- Business Development from a Process and Partnership Perspective, 7.5 credits
- Systems Integration, 7.5 credits

Systems Design
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
- HTML and CSS for Web Development, 5 credits
- JavaScript for Web Development, 5 credits
- Serverside Programming in JavaScript, 5 credits
- Introduction to Business Administration, 7.5 credits
- Advanced course in Programming, 7.5 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 course, 30 credits. Examples of optional courses (subject to availability):
Project Management 7.5 credits; 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; Software Development Methodology 7.5 credits; and 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
- Design Software Architecture, 7.5 credits
- Systems Integration, 7.5 credits

Degree Title
Bachelor of Science
Main field of study: Information Systems

Credit Transfer
According to the Higher Education Ordinance Ch. 6 Sec. 6–8 students have the right to transfer credits and have prior learning 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.

Previous versions of the programme syllabus have been approved:
14 December 2006, reg. no FAK1 2006/192, effective from the autumn semester 2007
18 December 2008, reg. no FAK1 2006/192, effective from the autumn semester 2007
29 April 2010, reg. no FAK1 2010/39, effective from the autumn semester 2010
23 March 2012, reg. no FAK1 2012/53, effective from the autumn semester 2012
19 February 2016, reg. no HS 2014/146, effective from the autumn semester 2014
10 March 2016, reg. no HS 2016/205, effective from the autumn semester 2016
10 March 2017, reg. no HS 2017/252, effective from the autumn semester 2017
18 October 2017, reg. no HS 2017/252, effective from the autumn semester 2018
5 December 2019, reg. no HS 2019/1107, effective from the autumn semester 2020
3 February 2022, reg. no HS 2022/29, effective from the autumn semester 2022