PROGRAMME SYLLABUS

Finalized 2025-12-11
Reg.no. HS 2025/1295

FACULTY OF ARTS AND SOCIAL SCIENCE

Web Developer

Webbutvecklare

Programme code: SGWEB

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, 2025-12-11

Valid from

Autumn semester 2026

Entry requirements

General entry requirements plus either
Mathematics 2a or 2b or 2c, Civics 1b or 1a1+1a2
or
Mathematics level 2a or level 2b or level 2c, Civics level 1b or level
1a1+1a2.

Introduction

The degree programme in web development equips students with the technical expertise needed to develop websites and web-based systems. Upon completion of the programme, students are well-prepared for professional roles as web developers, system developers or, if they complete a Bachelor's degree, interaction designers.

Students can opt to complete the programme with a Higher Education Diploma in Information Systems after two years of study, or move on to a third year for a Bachelor's degree in Information Systems. Graduates with a Higher Education Diploma are qualified to work in web development. Students who choose to continue to the third year of the programme will specialise in interaction design and gain qualifications for careers in both web development and interaction design. Upon completion of the programme with a Bachelor's degree, students can go on to further studies at the Master's level in Information Systems.

The programme is offered in the subject of Information Systems, which provides students with solid theoretical and practical knowledge of relations between humans, organisations and IT systems. Web development is approached from these different perspectives throughout the programme. The focus is on how interactive web-based products, such as websites, e-services, applications and systems that rely on text, graphics, animation, sound and images/video, are developed from a technical perspective. Students also deepen their understanding of how such systems can be evaluated and designed based on user needs (commonly referred to as interaction design).

Programme outcomes

The programme is designed for students to acquire knowledge and understanding of the approaches, theories and methods of information technology and communication in the areas of web and interaction design.

For programme completion, students must meet the national outcomes for a Higher Education Diploma or a Degree of Bachelor.

National outcomes for a Higher Education Diploma
Knowledge and understanding
For a Higher Education Diploma the student shall

- demonstrate knowledge and understanding in the principal field (main field of study) of the study programme, including awareness of the disciplinary foundation of the field and knowledge of some applicable methodologies in the field.

Competence and skills
For a Higher Education Diploma the student shall

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- demonstrate the ability to search for, gather and critically interpret the relevant information in order to formulate answers to well defined issues in the main field of study,
- demonstrate the ability to present and discuss his or her knowledge with different audiences, and
- demonstrate the skills required to work autonomously with specific tasks in the main field of study.

Judgement and approach
For a Higher Education Diploma the student shall

- demonstrate knowledge about and be equipped to deal with ethical issues in the main field of study.

Independent project (degree project)
A requirement for the award of a Higher Education Diploma is completion by the student of an independent project (degree project) in the main field of study.

National outcomes for a Degree of Bachelor
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 undertake ongoing development of his or her skills.

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

The programme offers two possible outcomes. The student can pursue a Higher Education Diploma (120 credits), equivalent to two years of full-time studies, or a Degree of Bachelor (180 credits), equivalent to three years of full-time studies.

The first semester includes foundational courses in information systems. Courses in the second semester have a focus on web development. The third semester covers a 20-week web development course, which, in addition to web programming, contains modules in database design, object-oriented modelling and software development.

In the fourth semester, students choose free elective courses. Students who opt to complete their studies with a Higher Education Diploma after the second year also write a small thesis (independent project) comprising 7.5 credits. Students who plan to continue towards a Bachelor's degree can also choose to complete the independent project for a Higher Education Diploma as part of the free elective courses. Regardless of study route, students have the opportunity to study abroad during the fourth semester, and the independent project can, in such a case, be completed remotely.

The fifth semester consists of specialisation courses in interaction design, as well as prescribed elective courses. In the sixth semester, students take prescribed elective courses and complete an independent project of 15 credits.

Upon completion of a Bachelor's degree, students can choose to pursue a Master's degree (60 or 120 credits) in Information Systems.

Equality perspectives are integrated into the programme through courses addressing inclusive design and accessibility in the development of digital services, ensuring that students learn to create solutions that work for users with different conditions and needs.

Sustainable development is highlighted partly through theoretical components on the environmental impact of hardware, and partly through discussions about the potential of digitalisation to contribute to positive sustainability effects in society.

The programme is based on student-centred learning where students take an active role in their knowledge development. This is facilitated

through workshops, seminars and problem-based practical sessions carried out both individually and in groups, which promote both independent work and collaborative skills.

Programme curriculum

Mandatory courses are taken by all students in the programme during semesters 1-3. Note that the titles and the order of the programme courses may vary.

Semester 1
Prototyping: to explore and communicate design concepts, 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 object-oriented programming, 5 credits
HTML and CSS for web development, 5 credits
Systems implementation techniques, 5 credits
JavaScript for web development, 5 credits
Portable formats, 5 credits
Serverside programming in JavaScript, 5 credits

Semester 3
Database design, 7.5 credits
Software development, 7.5 credits
Development of web applications, 7.5 credits
NoSQL databases, 7.5 credits

Semester 4
Study route for a Higher Education Diploma:
Information systems - smaller thesis work, 7.5 credits
Free elective courses, 22.5 credits (for examples of courses, see Study route for a Degree of Bachelor)

Study route for a Degree of Bachelor:
Free elective courses, 30 credits

Examples of free elective courses, subject to availability:

- Web design II, 15 credits
- C#.NET, 7.5 credits
- Business by Web and web analytics, 7.5 credits
- Cloud foundations, 7.5 credits
- Advanced course in programming, 7.5 credits
- Accessibility of digital services and digital documents, 7.5 credits
- Information systems - smaller thesis work, 7.5 credits
- Information systems: practical training, 7.5 credits
- Information systems: international practical placement, 15 credits

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Semester 5
User tests, prototyping and evaluation, 7.5 credits
Interaction design, 7.5 credits
Prescribed elective courses, 15 credits

- Development of apps for mobile e-Services, 7.5 credits
- Design patterns, Java, and UML, 7.5 credits
- Business by Web and web analytics, 7.5 credits
- Information systems: practical training, 7.5 credits

Semester 6
Information systems – Bachelor's thesis, 15 credits
Prescribed elective courses, 15 credits

- Software testing foundations, 7.5 credits
- Systems integration, 7.5 credits
- Information systems: practical training, 7.5 credits

Title of qualification

For students completing the programme after semester 4:
Higher Education Diploma
Specialisation: Information Systems

For students completing the programme after semester 6:
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 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:
7 September 2017, reg. no. HS 2017/657, effective from the autumn semester of 2018
15 November 2019, reg. no. HS 2019/1127, effective from the autumn semester of 2020
15 February 2021, reg. no. HS 2021/153, effective from the autumn semester of 2021

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