



JÖNKÖPING UNIVERSITY
School of Engineering

PROGRAMME SYLLABUS
User Experience Design (one year master), 60 credits

Programmestart: Autumn 2021



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Programme code: TAUE1

Programmestart: Autumn 2021

Confirmed by: Dean 2021-03-01

Education Cycle: Second-cycle level

Version: 1

Title of qualification

Degree of Master of Science (60 credits) with a major in Informatics, specialisation in User Experience Design

Programme overview

Background

Digital outputs have become increasingly pervasive and now form the strategic backbone of most businesses. This development creates a clear need for professionals that have a better understanding of design and technology from a big-picture perspective.

Since the emergence of the iPhone, user experience design has become central to making our digital interactions more functional, productive, and inspiring – thus raising our expectations when we use any computerized system. Furthermore, emerging technologies break existing user mental models and generate new ones. For designers and developers – when building products and systems that work well for people – this means continuously learning new technologies and their value in different contexts.

This master programme in User Experience Design helps students acquire the skills required to create competitive and innovative digital products.

Objectives

The programme is intended for students with a bachelor's degree in informatics, computer science, computer engineering, interaction design or similar. By introducing students to new technologies, such as the semantic web and recommendation agents, the programme will help them design and develop digital products that address user needs and enhance the user experience. Additional topics, such as information and web security related to developing digital products, are also covered by the programme.

Areas of employment after graduation

This master programme in User Experience Design prepares students for third-cycle courses and research projects, or for work in industry. With the experience provided by the programme, students will be able to undertake a variety of roles, such as: user experience designer; interaction designer; product designer; and technical or design consultant.

Research

A Master's degree qualifies to apply for further third-cycle education leading to a licentiate or doctoral degree.

Research supporting the programme

Within the Department of Computer Science & Informatics there is a strong focus on research related to human-computer interaction. This is the discipline that is concerned with how humans use and are affected by information technologies, and with how to create solutions that are both accessible and useful in everyday life. As computing becomes ubiquitous, almost every aspect of modern life involves some form of interaction with digital technologies.

Hence, this makes the area of human-computer interaction a multi- and interdisciplinary field of study that draws on principles from different subjects, such as: computer science and informatics (e.g., web security, artificial intelligence, semantic technologies), social sciences (e.g., psychology), arts, and many more.

The programme is also closely connected to the thematic areas of Jönköping University's SPARK Research Environment, especially to the thematic area TA5 – Digitalization for smart products and services. In this TA one of the core areas is digitalization and digital transformation of products and services (Value propositions). In this area, important dimensions handle in terms of opportunities and challenges are customer demands, user experience, process, staff and competencies, and technology. This also serves as a foundation to facilitate research between schools and departments, as well as with the industry and the public sector.

Objectives

On completion of the programme, the student must fulfil the learning outcomes for the degree of master (60 credits) as laid down in the Higher Education Ordinance:

General learning outcomes**Knowledge and understanding**

1. demonstrate knowledge and understanding in the main field of study, including both an overview of the field and specialised knowledge in certain areas of the field as well as insight into current research and development work, and
2. demonstrate specialised methodological knowledge in the main field of study.

Competence and skills

3. demonstrate the ability to integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information,
4. demonstrate the ability to identify and formulate issues autonomously as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames,
5. demonstrate the ability in speech and writing to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
6. demonstrate the skills required for participation in research and development work or employment in some other qualified capacity.

Judgement and approach

7. 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,
8. 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
9. demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Programme-specific learning outcomes

On completion of the programme, the student must also fulfil the following programme-specific learning outcomes:

Knowledge and understanding

10. display knowledge of the concepts and techniques of user experience design, and
11. demonstrate comprehension of semantic technologies and web personalization.

Competence and skills

12. demonstrate skills of managing a design process for products or services that results in a good user experience on different Web and mobile platforms, and
13. demonstrate the ability to work in teams during development of a product for the needs of specific users, organizations, or businesses.

Judgement and approach

14. demonstrate the ability to assess how usability and user needs contribute to a successful user experience, and
15. demonstrate the ability to ground the design of products within a business strategy and its deployment to market.

Contents

Programme principles

Instruction is in the form of lectures, seminars, exercises, laboratory sessions and project work. All courses are held in English. All final course examinations are in English.

The teaching approach in the programme is based, to a large extent, on learning from real-life scenarios and group learning. Lectures and Labs often include examples from real projects, which put the theoretical material into a practical context. In course assignments students work in groups of several members to plan and implement a solution to a problem based upon a real-life case. This lays the ground for learning communication and leadership within a group. The resulting solution is reported in both written and oral form.

The programme includes an independent degree project worth 15 higher education credits. Students, individually or in groups of two, prepare and present an assignment in the field of User Experience Design, applying the knowledge accumulated during the programme and demonstrating the acquired skills. The degree project is carried out during the last term of the programme and can be done in close collaboration with a company or an organisation.

Programme progression

The programme's progression goes along two themes: technology and design.

The course *Digital Product Development* introduces the design essentials of building digital products. It covers topics such as problem identification; concurrent analysis and solution ideation; and the development and modelling of a first working mock-up. The design theme is continued in *Digital Product Realisation*, which aims to provide students with the knowledge of bringing a digital product to the market. This involves continued design iterations of the product, taking into consideration market aspects such as segmenting and positioning.

The technology theme starts with *Web Personalisation*. This course provides knowledge of different personalisation methods and strategies to move away from a one-size-fits-all approach when creating digital solutions. Personalisation includes the utilization of data and artificial intelligence tools to reveal preference patterns, as well as the use of psychology theories to infer personal preferences. *Next Generation Web* shows how to enrich the information architecture of a digital product by linking to open datasets on the web. *Next Generation Web* also covers the creation of semantic models and the querying of datasets to allow for a richer semantic description to be included in a digital application. *Web Security* starts with a brief introduction to information security, before exploring client-side and server-side aspects of web security. Topics covered include browser-related flaws and issues; injection attacks; and cross-site scripting attacks; and how such attacks can be mitigated.

During their *Final Project Work* the students are expected to enhance and deepen their knowledge on modern trends and discoveries in User Experience Design, as well as to contribute with their own results to this area. The *Final Project Work* requires students to exercise their ability to understand a problem, to identify different solutions to the problem, and to choose an appropriate solution by estimating the solution's business impact.

Elective courses

The programme curriculum includes 7.5 credits of elective courses in the area of Informatics. The elective courses are selected by a student.

Courses

Mandatory courses

Course Name	Credits	Main field of study	Specialised in	Course Code
Digital Product Realisation	7.5	Informatics	A1F	TDFS22
Digital Product Development	7.5	Informatics	A1N	TDUR21
Final Project Work in Informatics	15	Informatics	A1E	TEIT22
Next Generation Web	7.5	Informatics	A1N	TNWR21
Web Personalisation	7.5	Informatics	A1N	TWPR21
Web Security	7.5	Informatics	A1N	TWSR22

Elective courses

Course Name	Credits	Main field of study	Specialised in	Course Code
Information Security ¹	7.5	Informatics	G2F	TIAN19
Research Methods ¹	7.5	Informatics	A1N	TRER20
Introduction to Script Programming ¹	7.5	Informatics	G1N	TSPG17

Programme overview

Year 1

Semester 1		Semester 2	
Period 1	Period 2	Period 3	Period 4
Digital Product Development, 7.5 credits	Next Generation Web, 7.5 credits	Web Security, 7.5 credits	Digital Product Realisation, 7.5 credits
Web Personalisation, 7.5 credits	<i>Information Security¹, 7.5 credits</i>	Final Project Work in Informatics, 15 credits	
	<i>Introduction to Script Programming¹, 7.5 credits</i>		
	<i>Research Methods¹, 7.5 credits</i>		

Teaching and examination

Throughout the academic year, typically, two courses are taken in parallel. Examination forms and grades are given by each course module, respectively. The programme overview shows the programme structure for both years and may be changed during the programme. For updated programme overview visit <http://www.ju.se>

Prerequisites

The applicant must hold the minimum of a bachelor's degree (i.e the equivalent of 180 ECTS credits at an accredited university) with at least 90 credits in Informatics, Computer Engineering, Computer Science, or equivalent. Proof of English proficiency is required.

Qualification Requirements

To obtain a Degree of Master of Science (60 credits) with a major in Informatics, specialisation in User Experience Design, students must complete a minimum of 60 credits in accordance with the current programme syllabus.

In addition a Degree of Bachelor of Science in Engineering/Degree of Bachelor of Science or an equivalent Swedish or foreign qualification is required.

Quality Development

The School of Engineering's quality assurance process involves continuous development and quality assurance of degree programmes and courses. This means, among other things, that great importance is attributed to student feedback and that a proactive approach is taken to the development of degree programmes and courses. The quality assurance process is carried out following applicable steering documents.

Other Information

If formal competence is missing, the applicant's substantial competence is tested if the applicant has acquired equivalent knowledge in some other way. The aim is to assess the collective competence and if the applicant has the opportunity to meet selected training. Substantial competence can be about knowledge and experience from working life, long-term mobility or other courses.

Course included in the programme can be read as a separate course, subject to availability.

Prerequisites are stated in the syllabus.

Admission is under "Admission arrangements for first and second level" at Jönköping University.

This syllabus is based on "Regulations and guidelines for education at undergraduate, postgraduate and doctoral studies at Jönköping"