SYLLABUS

Interactive web systems 7.5 credits D0037E

Interaktiva webbsystem

Course syllabus admitted: Spring 2024 Sp 3 - Present

DECISION DATE
2023-02-15

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Interaktiva webbsystem

First cycle, D0037E

Education level	**Grade scale**	**Subject**	**Subject group (SCB)**
First cycle	G U 3 4 5	Datateknik	Computer Technology

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and Courses of at least 60 credits, of which the following skills/courses are included: Skills in imperative programming corresponding to, for example, D0009E Introduction to programming. 7.5 credits or D0028E Programming and Digitalisation, 7.5 credits, as well as object-oriented programming and design corresponding to, for example, D0010E Object-oriented Programming and Design, 7.5 credits or D0035E Object-Oriented Programming Methodology, 7.5 credits.

Selection

The selection is based on 1-165 credits.

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Course Aim

The aim of the course on interactive web systems is to provide students with a comprehensive understanding of how to build interactive web applications. In the course, the entire information flow from server to client is considered, with user-friendliness and good system architecture being the focus.

Knowledge and understanding

- Demonstrate a thorough understanding of the fundamental technologies used in web development.
- Demonstrate proficiency in using libraries to build interactive web applications.
- Demonstrate the ability to design and implement an API, including the ability to receive requests and transmit responses.
- Demonstrate proficiency in storing and retrieving data with a web application.
- Demonstrate proficiency in using real-time communication technologies, such as WebSockets, to build interactive web applications.
- Demonstrate understanding of the development process for building web applications, including design, implementation, testing, and deployment.

Competence and skills

- Demonstrate abilities to identify, formulate, analyze, and evaluate design as well as implementation of interactive web systems both critically and creatively.
- Demonstrate ability to synthesize and apply knowledge of web development technologies and practices to design and implement effective solutions to real-world problems.
- Demonstrate ability to reason about ethical and sustainable consequences of web applications.
- Demonstrate ability to analyze and interpret data from a variety of sources to inform decisions about web development projects.
- Demonstrate ability to use the tools of the trade and handling of software.
- Demonstrate abilities for oral and written presentation of interactive web applications.

Judgement and approach

- Demonstrate ability to collaborate effectively with others to complete complex web development projects and contributing to a positive and productive team dynamic.
- Demonstrate ability to search for new knowledge and to continuously develop skills and knowledge of web technologies and practices using entrepreneurial methodologies (individually and through collaboration with other students).

Contents

The course builds on basic programming knowledge and provides an insight into programming languages used for web application development. It will cover the fundamental concepts of human-computer interaction and related technologies.

Students will learn about both client- and server-side programming as well as real-time communication. This includes building reusable user-interface components and managing their state and behavior, web accessibility, using libraries to build modern web applications and managing the flow of data between the frontend and the backend of a web application.

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Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.

The course will emphasize a hands-on, project-based approach, where students will have the opportunity to put into practice the concepts and technologies. Through these projects, students will develop the skills to design, build, and deploy web applications that are both functional and user-friendly.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Remarks

Laboratory work, written reports, and oral examination.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Laboratory work	U G#	3	Mandatory	S24	
0002	Oral examination	G U 3 4 5	4.5	Mandatory	S24	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Syllabus established

by Robert Brännström 2023-02-15

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