



KURSPLAN

Nästa generations webb, 9 högskolepoäng

Next Generation Web, 9 credits

Kurskod:	TNWS20	Utbildningsnivå:	Avancerad nivå
Fastställd av:	VD 2019-12-01	Utbildningsområde:	Tekniska området
Gäller fr.o.m.:	2020-01-01	Ämnesgrupp:	DT1
Version:	1	Fördjupning:	A1F
		Huvudområde:	Informatik

Lärandemål

After a successful course, the student shall:

Kunskap och förståelse

- demonstrate comprehension of RESTful Web Service
- demonstrate comprehension of principles, methods and techniques of the Semantic Web and Linked Data
- demonstrate comprehension of vocabularies and schemas for structuring information and resources on the web
- display knowledge of research trends in the areas relevant for new generation web

Färdighet och förmåga

- demonstrate the ability for server-side development
- demonstrate skills of creating a RESTful web service with a web framework
- demonstrate the ability to apply intelligent mechanisms to gathering and processing the data on the web
- demonstrate skills of design and development of web applications with the Semantic and Linked Data technologies

Värderingsförmåga och förhållningssätt

- demonstrate the ability to choose an appropriate implementation of a server-side solution based on the principles of service design
- demonstrate the ability to choose applicable methods and tools for more advanced and intelligent web applications based on the Semantic and Linked Data technologies

Innehåll

Technologies from many different areas, such as Semantic Web, data-mining, machine learning, recommendation agents, and artificial intelligence are driving a new generation of web. These technologies emphasize machine-facilitated understanding of information on the web to provide a more productive and intuitive user experience. In this course students will start with basic solutions on the server side, and then are introduced to the vision of new generation web. They

will understand how the techniques revolutionize the web and its applications.

The course includes the following elements:

- Development of server-side solutions based on the principles of service design
- The client-server model and web framework
- Request routing and web page templates
- Stateless web services, REST API, and JSON serialization
- Storing data in a database and ER-modelling
- Introduction to Semantic Web and its applications
- Using open vocabularies and standard schemas for structuring information
- Linked Data and Open Data
- Semantic Web Languages (such as RDF(S), RDFa, JSON-LD, SPARQL, OWL, etc.)
- RDF graph databases (i.e. RDF triple stores) and their applications

Undervisningsformer

The course consists of lectures, assignment and laboratory work.

Undervisningen bedrivs på engelska.

Förkunskapskrav

Passed courses 180 credits in first cycle, at least 90 credits within the major subject in Informatics, Computer Science, Computer Engineering, Interaction Design (with relevant courses in web programming), and completed course User Experience Design 7,5 credits (or equivalent). Proof of English proficiency is required.

Examination och betyg

Kursen bedöms med betygen 5, 4, 3 eller Underkänd.

The final grade for the course is based on a balanced set of assessments. The final grade will only be issued after satisfactory completion of all assessments.

Poängregistrering av examinationen för kursen sker enligt följande system:

Examinationsmoment	Omfattning	Betyg
Inlämningsuppgifter	2 hp	5/4/3/U
Laborationer	2 hp	U/G
Projektarbete	5 hp	5/4/3/U

Kurslitteratur

Litteratur

The literature list for the course will be provided one month before the course starts.

Title: Linked Data: Structured Data on the Web

Authors: David Wood, Marsha Zaidman and Luke Ruth

Publisher: Manning Publications

Title: Web Development with Node and Express

Author: Ethan Brown

Publisher: O'Reilly Media, Inc, 2014

ISBN: 978-1-4919-4930-6