



Aalto University
School of Science



CS-E4410 Semantic Web

Spring 2019

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Learning objectives of the course

To get to know the idea of semantic web, the technologies and its possible applications

- Lectures

To learn how to use programming tools of the area in practice

- Assignments

The course in the CCIS Master's Programme

Computer Science major in the Master's Programme in Computer, Communication and Information Sciences

- Web Technologies, Applications, and Science track

Track compulsory courses

CODE	NAME	CREDITS	PERIOD/YEAR
CS-E4400	Design of WWW Services	5	I-II/1st year
CS-E4410	Semantic Web	5	III-IV/1st year
CS-E4460	WWW-applications	5	I-II/2nd year

Track optional courses

CODE	NAME	CREDITS	PERIOD/YEAR
CS-E5220	User Interface Construction	5	II/1st year
CS-E4003	Special Assignment in Computer Science	1-10	Agreed with the teacher

Passing the course

Two compulsory parts

- Assignments (graded 0-6)
- Examination (graded 0-30)

The assignments have to be passed during the course

- Requirement for participating in the course exam
- Assignments passed on previous years are accepted

Next exam

- Thu 11.4.2019, 17:00-20:00, T-House, C202

Lectures

On Wednesdays at 10.15-12.00 in lecture hall T5 (A133), CS Building

Date	Topic	Book chapters
09.01.2019	Introduction, WWW today, and Semantic Web	Semantic Web Primer Ch. 1 (Ch.1 [+ Ch. 2] in older eds.).
16.01.2019	RDF and RDF Schema	Semantic Web Primer Ch. 2 (Ch. 3 in older eds.).
23.01.2019	Linked Data and SPARQL	Linked Data book Ch. 1-2; Semantic Web Primer Ch. 3 (Sec. 3.9 in 2nd ed.) .
30.01.2019	Ontologies and SKOS	Semantic Web Primer Ch. 7.
06.02.2019	Web Ontology Language OWL	Semantic Web Primer Ch. 4 (older eds. cover OWL 1 instead of OWL 2, see changes).
13.02.2019	No lecture due to exam week	-
20.02.2019	Logic and Inference: Rules	Semantic Web Primer Ch. 5 (older eds. lack some technologies: e.g., OWL 2 RL, RIF, SWRL, SPIN). See also slides on nonmonotonic rules.
27.02.2019	Semantic Web Infrastructure and Applications What to do with Linked Data?	Semantic Web Primer Ch. 6 (older eds. have slightly different application descriptions). Linked Data book Ch. 6.

Study material

- G. Antoniou, P. Groth, F. van Harmelen, R. Hoekstra: A Semantic Web Primer. 3rd Edition. MIT Press, 2012.
- T. Heath, C. Bizer: Linked Data: Evolving the Web into a Global Data Space. Morgan & Claypool, 2011. <http://linkeddatabook.com/editions/1.0/>
- Lecture slides and other possible material
 - *Traditionally some exam questions are based on these*

Additional materials

- Finnish text book Eero Hyvönen: “Semanttinen web – linkitetyn avoimen datan käsikirja” covers the course topics
https://gaudeamus.pikakirjakauppa.fi/tuote/eero_hyvonen/semanttinen_web/9789523455245
- Linked Data School Linda Online material: <http://linda.seco.cs.aalto.fi/>

More information on the web:

- W3C’s Semantic Web recommendations:
<http://www.w3.org/standards/semanticweb/>
- Books about Semantic Web: <http://www.w3.org/2001/sw/wiki/Books>

Excercises

Arranged by assistants:

- Sami Sarsa and Mikko Koho
sami.sarsa@aalto.fi and mikko.koho@aalto.fi

All the assignments need to be passed satisfactorily

- Three sets of assignments
 1. *Producing RDF data and RDFS ontologies*
 2. *SPARQL language and protocol*
 3. *SKOS, OWL, rules and recommendations*

Assignments are done independently, not in groups

- Return your solutions via MyCourses

Schedule

Exercise set topics and deadlines are

- Exercise set 1: Producing RDF data and RDFS ontologies (deadline 07.02. 23:55)
- Exercise set 2: SPARQL language and protocol (deadline 07.03. 23:55)
- Exercise set 3: SKOS, OWL, rules and recommendations (deadline 28.03. 23:55)

Assignment support sessions

- On Thursdays at 10.15-12.00 in room Y338, Otakaari 1
 - Starting 17.1.2019

***You can also ask for advice
at the MyCourses discussion forum!***

Exercise sessions

Date	Support for
17.01.2018	Exercise set 1
07.02.2018	Exercise set 1
14.02.2018	Exercise set 2
28.02.2018	Exercise set 2
07.03.2018	Exercise set 2
14.03.2018	Exercise set 3
21.03.2018	Exercise set 3
28.03.2018	Exercise set 3

Questions?

