IV2017 Interoperability of Enterprise Systems and Services 7.5 credits

Interoperabilitet hos verksamhetssystem och tjänster

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for IV2017 valid from Autumn 2008

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Specific prerequisites

For single course students:

It is expected that the student shall have knowledge in the following areas:
Enterprise Systems Modelling, corresponding to 2I1228/IV2007 and database methodology including XML

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The overall learning goal of this course is that students shall be able to identify, apply and evaluate interoperability techniques and methods for supporting interoperability between information systems and enterprises, using ontology and semantic web.

The specific learning goals for this course are:
1. The student shall be able to explain the need for interoperability between enterprises.
2. The student shall be able to explain the different levels of interoperability as well as different kinds of interoperability.
3. The student shall be able to analyze, evaluate and select appropriate methods, technologies and tools from current state of the art research to support interoperability, specifically focusing on semantic interoperability.
4. The student shall be able to define and construct RDF conceptual graphs from a given domain description.
5. The student shall be able to build a conceptual model of given domain from natural language description.
6. The student shall be able to compare and analyse between RDF conceptual graphs and other conceptual modeling languages like UML.
7- The student shall be able to assess and summarize the Semantic Web and its applications.
8. The student shall be able to analyse,model and represent domain knowledge as an ontology using ontology representation languages like OWL.
9. The student shall be able to represent and model simple business constraints as axioms using representation language like DL .
10. The student shall be able to choose and use appropriate ontology design and development methods in the design of abovementioned domain ontology.
11. The student shall be able to implement an ontology using ontology development environments like Protégé.

Course contents

Requirements for Interoperability
Current Issues and state of the art
Information Interoperability
Ontologies
The Semantic Web
OWL, RDF
Tools : Protege Ontology Editor
Some Semantic Web Applications : Study and Review
Practical Case Study

Disposition

The course consists of lectures, lessons, seminars and supervision opportunities (one for the case study and one for the individual research paper). The course literature shall comprise of a recommended selection of articles, applications and other material.
It is expected that the student shall study and be prepared with the literature and assignments , before each Seminar session.
The lectures shall cover:
1. Introduction to Interoperability.Need for interoperability.
2.Introduction to Semantic Web, RDF.
3. Reviewing OWL. Protege Ontology Editor
4. Ontology. Design and Development Methodologies.
5. Knowledge Management, Ontology, Enterprise Interoperability

Course literature

Compendium of selected research articles.

optional :

1. Semantic Web Primer, by Grigoris Antoniou, Frank van Harmelen.

2. ontological engineering. Asuncion Gomez-perez, Mariano Fernández-López, Oscar Corcho. Published in November 2003 by Springer Verlag as part of the Advanced Information and Knowledge Processing series.

ISBN 1-85233-551-3 .

Approx. 415 pp. 75 illus., hardcover; includes bibliographical references and index.

Compendium of selected research articles.

optional :

1. Semantic Web Primer, by Grigoris Antoniou, Frank van Harmelen.

2. ontological engineering. Asuncion Gomez-perez, Mariano Fernández-López, Oscar Corcho. Published in November 2003 by Springer Verlag as part of the Advanced Information and Knowledge Processing series.

ISBN 1-85233-551-3 .

Approx. 415 pp. 75 illus., hardcover; includes bibliographical references and index.

Examination

- INL1 - Assignment, 4.5 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Assignment, 4,5 hp, grading scale pass/fail (P/F)

Written exam, 3 hp, grading scale A/B/C/D/E/Fx/F

Other requirements for final grade

To pass the course, the student needs to pass on the assignment/s as well as the written exam. Course grade is based on the grade on the written exam.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.