



DEPARTMENT OF PHILOSOPHY, LINGUISTICS AND THEORY OF SCIENCE

LT2213 Computational semantics, 7.5 credits

Komputationell semantik, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Philosophy, Linguistics and Theory of Science on 2018-05-29 and was last revised on 2023-05-29 to be valid from 2023-08-28, autumn semester of 2023.

Field of education: Science 100%

Department: Department of Philosophy, Linguistics and Theory of Science

Position in the educational system

The course can also be offered as a freestanding course.

The course can be part of the following programmes: 1) Computer Science, Master's Programme (N2COS), 2) Applied Data Science Master's Programme (N2ADS) and 3) Master in Language Technology (One year or Two years) (H2MLT)

Main field of studies

Language Technology

Specialization

A1F, Second cycle, has second-cycle course/s as entry requirements

Entry requirements

Admission to the course requires either successful completion of the following courses:

- LT2001 Introduction to programming 7.5 credits
- LT2002 Introduction to formal linguistics 7.5 credits
- LT2003 Basic language technology 15 credits (or LT2123 Basic skills for language technology, 7.5 credits together with LT2124 Themes in NLP and language technology, 7.5 credits)

or courses giving equivalent skills and knowledge. The course equivalence is evaluated by an area expert in language technology. If necessary, candidates may be required to supply additional information.

English 6 or equivalent is also required.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

- Account for the differences between the types of semantic analysis covered in the course.
- Describe the existing resources, approaches and applications related to computational semantic analysis.
- Read and describe scientific literature and understand programming code.
- Identify ethical considerations.

Competence and skills

- Explain the existing resources and approaches for computational semantic analysis and their relevance for language technology applications.
- Discuss the related scientific literature.
- Write programming code to solve language technology problems related to semantic analysis.
- Perform work according to a pre-defined schedule.

Judgement and approach

- Evaluate how semantic analysis is modelled in computational resources, approaches, and applications.
- Recognise problems and formulate new questions for its computational modelling.
- Make informed judgments about selecting the type of computational semantic analysis needed for particular language technology applications.
- Critically evaluate different models.

Course content

In this course we will discuss ways of representing meaning of words, sentences and conversations with computational methods, both top-down rule-based representations and data-driven representations learned by machine learning. We will contrast them with each other, examine how we can draw inferences or reason with them computationally, and how can they be applied in different language technology tasks and applications.

Form of teaching

The course consists of (i) lectures, (ii) classes, (iv) seminar discussions, and (iii)

individual work.

Language of instruction: English

Assessment

The course is assessed by participation in classes and seminars, assignments and/or a written exam.

Obligatory attendance may be required for some components. Students will be given a chance to compensate the missed sessions with additional tasks and assignments during the course if possible but otherwise they will have to take them the next time the course runs.

A student who has failed an examination twice has the right to change examiners if it is feasible. A written application should be sent to the board of the department.

Completion of examined student work is allowed.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

Course evaluation

Students participating in, or having completed the course, are given an opportunity to anonymously convey their experiences of and suggestions for the course in a course evaluation. A summary of the course evaluation and reflections of the teacher responsible for the course, is made available to the students within a reasonable time after the course has completed. A summary of the course evaluation and any potential implemented measures are presented the next time the course is given.

Additional information

The course requires access to a computer (or similar) with internet access.

The course may not be included in a degree together with LT2813.