FAK3121 Advanced Decision Theory 7.5 credits

Avancerad beslutsteori

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

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

Establishment

Course syllabus for FAK3121 valid from Autumn 2015

Grading scale

Education cycle

Third cycle

Specific prerequisites

Entry requirements for PhD studies.

Language of instruction

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

Intended learning outcomes

After completed course, the student should be able to analyse advanced arguments and issues in

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- decision under risk and ignorance,
- the conceptual basis of decision theory and statistics
- formalization of decision problems.

Course contents

Decision theory seeks to analyse decision making by representing beliefs and preferences as probabilities and utilities, respectively. In this course we discuss the conceptual foundations of such an approach, by focusing on the Bayesian framework developed by Richard Jeffrey and contrast it with alternative approaches. Specifically, we will discuss the notion of desirability, the Bolker-Jeffrey representation theorem and the model of probability kinematics.

Course literature

- Jeffrey, R. "The logic of decision" Chicago University Press.
- Other literature posted on the course website at the latest four weeks before the course starts.

Examination

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.

Essay and/or oral examination according tu decission by the examinator

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.