Decision Theory

Single subject and programme course

6 credits

Beslutsteori

732A66

Valid from: 2016 Autumn semester

Determined by
The Quality Board at the Faculty of Arts and Sciences

Date determined
2016-09-30

Main field of study
Statistics

Course level
Second cycle

Advancement level
A1N

Course offered for
- Master's Programme in Statistics and Machine Learning

Entry requirements
- Bachelor's degree equivalent to a Swedish Kandidatexamen of 180 ECTS credits in one of the following subjects:
    - statistics
    - mathematics
    - applied mathematics
    - computer science
    - engineering
- Completed courses in
    - calculus
    - linear algebra
    - statistics
    - machine learning
    - programming
- English corresponding to the level of English in Swedish upper secondary education (Engelska 6/B)
(Exemption from Swedish

Intended learning outcomes
After completion the course, the student should on an advanced level be able to:
- use statistical methods for decision making,
- apply the principles for subjective probability interpretation, Bayesian inference, utility theory and sequential analysis in order to make a decision,
- critical assess the presumptions for each step in a decision making process

Course content

The course content comprises:
- The subjective interpretation of probabilities
- Probabilistic reasoning and likelihood theory,
- Bayesian hypothesis evaluation,
- Decision theoretic elements
- Utility and loss functions
- Graphical modelling as a tool for decision making
- Sequential analysis

Teaching and working methods

Assignments encompassing both theoretical and computer-based exercises. One final oral examination.
Detailed information about the examination can be found in the course's study guide.

Examination

Assignments encompassing both theoretical and computer-based exercises. One final oral examination.
Detailed information about the examination can be found in the course's study guide.

Grades

ECTS, EC

Department

Institutionen för datavetenskap