Advanced Data Mining

Avancerad Data Mining
6 credits

Single subject and programme course

732A75

Valid from: 2018 Spring semester

Determined by	**Main field of study**	
Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Statistics	
Date determined	**Course level**	**Progressive specialisation**
2018-03-20	Second cycle	A1N
Revised by	**Disciplinary domain**	
	Technology	
Revision date	**Subject group**	
	Statistics	
Offered first time	**Offered for the last time**	
Spring semester 2018		
Department	**Replaced by**	
Institutionen för datavetenskap		

Course offered for

- Master's Programme in Statistics and Machine Learning

Entry requirements

A bachelor's degree in one of the following subjects: statistics, mathematics, applied mathematics, computer science, engineering, or equivalent. Completed courses in calculus, linear algebra, statistics and programming are required. Documented knowledge of English equivalent to Engelska B/Engelska 6

Intended learning outcomes

After completion of the course, the student should on an advanced level be able to:

- use the terminology used in unsupervised learning
- account for applications in which clustering and association analysis are relevant
- account for the algorithms used in clustering and association analysis
- use cluster analysis in order to perform outlier analysis
- utilize an appropriate software for cluster and association analysis and interpret the obtained outcome

Course content

Association analysis: concepts and methods related to frequent item sets and association rules such as Apriori principle, FP-growth, evaluation of association rules.

Clustering: concepts and methods related to partitional clustering methods, hierarchical clustering methods, density-based clustering methods, cluster evaluation, outlier analysis.

Teaching and working methods

The teaching comprises lectures, seminars and computer laboratory. Homework and independent study are a necessary complement to the course. Language of instruction: English.

Examination

The course is examined by an individual written exam and laboratory assignments.
Detailed information about the examination can be found in the course's study guide.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

ECTS, EC

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is carried out in such a way that both men´s and women´s experience and knowledge is made visible and developed.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.