



Data Mining

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7.5 credits

7.5 högskolepoäng

Ladok Code: 22DM1D

Version: 1.0

Established by: The Teaching Committee 2013-12-11

Valid from: Spring 2014

Education Cycle: Second cycle

Main Field of Study (Progressive Specialisation): Informatics (A1N)

Disciplinary Domain: Natural sciences

Prerequisites: Passed courses of 7.5 credits in Mathematics/Statistics or attending the course Business Intelligence 1, 7.5 credits or something similar.

Subject Area: Informatics/Computer and Systems Sciences

Grading Scale: ECTS-credits

Content

The course will alternate between theoretical parts, with lectures and seminars, and more practical assignments.

Things covered in the course:

- data mining methodology,
- preprocessing of data and data quality aspects,
- data mining techniques; statistical models, association rules, clustering, decision trees, neural networks, and ensemble techniques,
- result analysis and evaluation methodology,
- web-mining, and
- practical work with modern data mining tools.

Learning Outcomes

The general goal is that the student, after finishing the course, will have acquired proficiency in understanding and critically examine data mining results. The student is also expected to have acquired the ability to identify if data mining is a suitable tool for solving specific problems. Furthermore, the student is expected to have acquired an ability to apply and use different data mining techniques to be able to solve different data mining problems by themselves.

After having finished the course, the student is expected to

Knowledge and understanding

1. be able to give an account of the discussed data mining techniques can be applied and how they work,
2. formulate and analyze reports and read research articles about studies on data mining,

Skills and abilities

3. being able to use the discussed data mining techniques in practice,
4. identify problems for which data mining is appropriate to use as well as being able to formulate a methodological description on how the problem ought to be solved,

Judgment and approach

5. being able to select appropriate evaluation methods to enable analyses of results achieved when using the data mining techniques discussed in the course

Forms of Teaching

Teaching is done through lectures, seminars, workshops and assignments. The course is given in English. The course literature is in English.

Forms of Examination

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

Literature and Other Teaching Materials

Berry & Linoff, *Data Mining Techniques For Marketing, Sales and Customer Relationship Management*, ISBN: 0-471-47064-3, John Wiley & Sons

Rosaria Silipo, *KNIME Beginner's Luck*, ISBN: 978-3-03302850-0, KNIME Press

Research articles and lecture material might be added.

Student Influence and Evaluation

The course is evaluated in accordance with the school's guidelines, in which students' views will be obtained. The results of the evaluation will be published and fed back to participating and prospective students in accordance with the school's guidelines, and will provide the basis for future course and program development.

Miscellaneous

This course is taken as part of the marketing specialization of the Business Administration Programme and as part of the Masters of Informatics Programme.