



Data Mining

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7.5 credits

Ladok Code: NDM013

Version: 3.0

Established by: The Teaching Committee 2012-09-12

Valid from: Spring 2013

Education Cycle: Second cycle

Main Field of Study (Progressive Specialisation): Computer Science (A1N), Informatics (A1N)

Disciplinary Domain: Natural sciences

Prerequisites: Statistics 7.5 ECTS. English language corresponding to English B in Swedish Secondary Upper School.

Subject Area: Informatics/Computer and Systems Sciences

Grading Scale: Fail (U), Pass (G) or Pass with Distinction (VG)

Content

The course will alternate between lectures and seminars with practical exercises and assignments

Modules:

- Data mining-methodologies
- preprocessing of data and data quality issues
- data mining techniques, statistical methods, Market Baskets, clustering, decision trees, neural networks and ensemble techniques,
- result analysis and evaluation techniques;
- Web-mining, and
- practical work with modern data mining tools

Learning Outcomes

After the course the students should have acquired an ability to interpret and critically examine the results of data mining techniques and projects. The students are also expected to have acquired the ability to identify if a problem should be solved by using data mining. Furthermore, the student should have acquired the ability to apply various data mining techniques to independently solve different types of data mining problems.

The student will after the course be able to:

Knowledge and understanding

- explain how data mining techniques can be applied and how they function, and
- articulate and critically analyze reports on completed data mining projects and tasks.

Skills and abilities

- apply data mining techniques in practice,
- identify problems where data mining techniques are appropriate to apply, and be able to formulate a methodical description on how the problem should be solved.

Values and attitudes

- analyze results from data mining techniques by the choice of appropriate evaluation techniques.

Forms of Teaching

The teaching consists of lectures, seminars, workshops, labs and assignments. Teaching is in English. The literature is in English.

Forms of Examination

Examination of the course consists of laboratory work, assignments and a written exam. For the grade Pass for the entire course all modules must have passed. For the grades Pass with distinction for the entire course it is also required the grade Pass with distinction on the written exam.

The students' rights and obligations at the examination are complying with the guidelines and regulations at the University of Borås.

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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

Lecture materials and scientific articles will be added

Student Influence and Evaluation

The compilation is made public in accordance with the Schools regulations and will be the foundation for future course planning and is part of the program evaluation that is carried out.

Miscellaneous

The course is given in the Business Administration programme's specialisation in Marketing. The course is also given as a stand-alone course.