UNIVERSITY OF BORÅS

Business Intelligence 2, Advanced Data Analysis

Business Intelligence 2, avancerad dataanalys

7.5 credits

Ladok Code: 22BI2D
Version: 1.0
Established by: The Teaching Committee 2011-11-09
Valid from: Spring 2012

Education Cycle: Second cycle
Main Field of Study (Progressive Specialisation): Informatics (A1F)
Disciplinary Domain: Natural sciences
Prerequisites: Passed courses of 60 ECTS in Informatics and the course Business Intelligence 1 7,5 ECTS or equivalent. 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, seminars and practical exercises, including assignments

Modules:

- methodology, including preprocessing of data and data quality issues
- machine learning techniques for prediction and clustering
- statistical result analysis and evaluation techniques
- 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 machine learning techniques and data mining projects. Students are also expected to have acquired the ability to identify if a problem should be solved using advanced data analysis. Furthermore, students should have acquired the ability to apply various machine learning techniques to independently solve different types of problems.

Knowledge and understanding
The student will after the course be able to:

- explain how machine learning techniques can be applied and how to interpret the results, and
- produce and critically analyze reports on completed data mining projects and tasks.

Skills and abilities
The student will after the course be able to:

- apply machine learning techniques in practice using a data mining tool,
- 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.
- read and understand scientific articles describing techniques used for advanced data analysis

Values and attitudes
The student will after the course be able to:

- analyze results from data mining techniques by the choice of appropriate evaluation techniques.
- identify and understand how sustainability is affected by the use of advanced data analysis, with a focus on social and economic issues

Forms of Teaching

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

Forms of Examination

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

Student rights and obligations at examination will be observed according to guidelines and rules at the University of Borås.

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* (3rd edition), ISBN: 978-0-470-65093-6, John Wiley & Son

Research articles and other similar literature may be used and will be communicated during the course.

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 part of the Master Program in Informatics.