SYLLABUS

Data Mining 7.5 credits D7040E

Data Mining

Course syllabus admitted: Autumn 2016 Sp 1 - Autumn 2016 Sp 2

DECISION DATE
2016-02-15

Luleå University of Technology 971 87 Luleå, Sweden
Phone: +46 (0)920 49 10 00 • Corporate Identity: 202100-2841

LULEÅ TEKNISKA UNIVERSITET

Data Mining 7.5 credits D7040E

Data Mining

Second cycle, D7040E

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	U G VG *	Systemvetenskap	Informatics/Computer and Systems Sciences

Main field of study

Information Systems Sciences

Entry requirements

In order to meet the general entry requirements for the data mining course, you must have accomplished a minimum of 120 ECTS of university studies, out of which 60 ECTS in the areas of computer or system science. Added to that, you must have studied Database II and a programming course.

Selection

The selection is based on 30-285 credits

Examiner

Ahmed Elragal

Course Aim

Data mining is the discovery of patterns and hidden information in large datasets. This course aims at the understanding of the data mining concepts and techniques. The course provides students with the detail about most aspects of data mining and knowledge discovery, focusing on techniques and algorithms in respect to how they are used to solve business problems.

After this course the student will be able to:

1. Understand what is data mining;
2. Differentiate between knowledge discovery in database and data mining;
3. Describe data mining as a process;
4. Explain the CRISP-DM process;
5. Describe the different applications where data mining is used;
6. Understand the different data mining techniques and algorithms;
7. Analyze the performance of data mining techniques and algorithms;
8. Evaluate the mining outcomes;
9. Explain the relationship between data mining and big data [analytics];
10. Understand how to formulate and solve business problems using data mining.

Contents

The data mining course will cover a number of topics, including data to be mined and data mining strategies. The techniques will be studied in association with the algorithms needed to implementing them. The course will also rely on business cases. That is, each technique will be studied in association with a business scenario. This will enhance understanding of the techniques and equip the learner with the necessary knowledge and skills required to formulate and solve mining problems.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.

During the course, students will work on individual task and a group task. For group work, students will collaborate with each other using a variety of collaboration tools. Also, students will be provided access to Rapid Miner, once of the world’s leading mining tools in order to solve business problems and cases.

Teaching is in English and on Internet for distance students or at campus for the students living here. IT support: Learning management system, e-mail and phone.

A learning management system is used for delivering course material, information and submissions. Knowledge is shared and created within the course through virtual meetings with teachers and other students for discussions, supervision, teamwork and seminars. For student on campus there will be meetings on campus.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.
Individual and group tasks 2,5 hp, U G
Written examination, 5 hp U G VG

Overlap

The course D7040E is equal to D0025E

Literature. Valid from Autumn 2016 Sp 1

To be told later

Course offered by

Department of Computer Science, Electrical and Space Engineering

Items/credits

No items/credits available

Syllabus established

by Jonny Johansson, HUL SRT 2016-02-15