

SYLLABUS

Data Mining 7.5 credits

D0025E

Data Mining

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2020-12-08

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Data Mining

First cycle, D0025E

Education level	Grade scale	Subject	Subject group (SCB)
First 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 first cycle studies you must have successfully completed upper secondary education and documented skills in English language and at least 60 credits in completed courses in which the following knowledge must be included, knowledge in Programming (for example D0019N Software Development with Java or D0007N Objectoriented programming) and Fundamentals of Databases (for example D0004N Database Systems I or D0018E Database technology).

Knowledge in English, equivalent to English 6.

Selection

The selection is based on 1-165 credits.

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.

Upon completion of the course, the student will be able to:

1. Understand what data mining is;
2. Differentiate between knowledge discovery in databases 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. Analyse the performance of data mining techniques and algorithms;
8. Evaluate 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 evaluating data that is to be mined and data mining strategies. The techniques will be studied in association with the algorithms needed to implement 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 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 tasks 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, one of the world's leading mining tools for solving business problems and cases.

Teaching is in English and on the Internet for distance students or on 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 students living here, 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

All students, both on distance and campus, write the individual exam online, webcam and microphone are required.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Overlap

The course D0025E is equal to D7040E

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Project work/individual assignments	U G#	2.5	Mandatory	A17	
0002	Written exam	U G VG *	5	Mandatory	A17	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Jonny Johansson HUL, SRT 2020-12-08

Syllabus established

by Jonny Johansson, HUL SRT 2017-02-15