

SYLLABUS

Database Systems II 7.5 credits D0005N

Databaser II

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2021-06-16**

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First cycle, D0005N

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 Basic knowledge of programming, SQL and relational databases.

Selection

The selection is based on 1-165 credits.

Course Aim

This course will provide you with an overview of a selected set of the advanced topics in database systems. The goal is to expose you to the current active areas in databases of interest to both academia and industry.

After this course the student will be able to:

- Describe the basic concepts of relational database design;
- Explain Database implementation and tools;
- Describe the design of parallel and distributed databases;
- Analyze case scenarios, design and implement databases;
- Describe the basic concept of data warehousing and data mining;
- Gain knowledge in basic ETL, OLAP, and data marts design and queries.

Contents

This is an advanced database course; we assume knowledge of the fundamental concepts of relational databases. The course will cover a number of advanced data management topics, including issues in relational database management systems, and data-centric applications. The specific topics include optimization strategies for relational database systems, parallel and distributed database systems, data warehousing, and business intelligence. The course materials will be drawn from textbooks as well as recent research literature.

Realization

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

In the course, lectures are interspersed with practical applications in the form of assignments. The lessons will make it easier for the student to understand structures, contexts, methods and models for the development of database models and implementation in database managers. In addition to database knowledge, the assignments also train cooperation, written presentation, the ability to search, collect, evaluate and critically interpret relevant information, as well as the ability to identify, formulate and solve problems.

The teaching is completely web-based with the possibility of physical gatherings. Between the meetings, the students who read the course at a distance communicate with classmates and teachers via e-mail and a web-based learning platform. Students who read the course on campus in Luleå have regular meetings with other students and teachers during lectures, supervision and group work.

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. Written assignments (2.5hp UG) examine the objectives Analyze scenarios, design and implement databases, describe the design of parallel and distributed databases, describe data warehousing and data mining, apply basic knowledge of ETL, OLAP and "data march", design and "queries" . In addition to this subject-specific knowledge, understanding of orientation on current research issues, written presentation, the ability to search, collect, evaluate and critically interpret relevant information, and the ability to identify, formulate and solve problems are also examined.

Written examination (5 credits, U G VG) examines all course-specific learning objectives, but not the general skills. All, both distance and campus students, write the individual exam online at a specific time (exam occasion). Webcam and microphone are a requirement.

All included examination parts must be completed for the final grade on the course.

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 D0005N is equal to IED445, IED303, A7008N, IED409

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0003	Assignment	U G#	2.5	Mandatory	S16	
0004	Written exam	U G VG *	5	Mandatory	S22	

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 2021-06-16

Syllabus established

by Bo Jonsson 2007-02-28