Linnæus University

Course syllabus

Faculty of Technology

Department of Computer Science and Media Technology

2DV513 Databasteori, 7.5 credits
Database Theory

Main field of study
Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G2F

Date of Ratification
Approved 2014-12-08
Revised 2020-09-05 by Faculty of Technology. Prerequisites are revised.
The course syllabus is valid from autumn semester 2021

Prerequisites
60 credits in Computer Science including Objectoriented Programming 7.5 credits
(1DV502) or Programming and Data Structures 7.5 credits (1DV507) or equivalent.

Objectives
After the course the student should:

- understand how a database works and how it is used
- understand what the relational model is and also be able to construct useful relational databases
- have acquired knowledge about SQL and how a database can be used from different high level languages
- have acquired basic knowledge about how a database is works internally
- have acquired knowledge about novel visual interfaces of databases.

Content
Generally, the course contents gives a technical and conceptual foundation of database systems.
The following areas are included:

- database models
- database modelling
- relational algebra
- storage structures
- transactions
- SQL and other (partly visual) query languages
- system aspects of SQL (APIs)
- constraints
- visual database interfaces

Type of Instruction
Lectures, seminars, self-studies, excercises and/or practical work.

Examination
The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

Assessment of the student's performance is made through written and/or oral tests and presentation of compulsory practical assignments. The types of assessment used in the course will be decided on at the beginning of the course.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation
Under kursens genomförande eller i nära anslutning till kursen genomförs kursvärdering. Resultat och analys av genomförd kursvärdering ska skyndsamt återkopplas till de studenter som genomfört kursen. Studenter som deltar vid nästa kurstillfälle erhåller återkoppling vid kursstart. Kursvärdering genomförs anonymt.

Credit Overlap
The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course: 1DV013 Database Theory, 7.5 credits

Other
Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material
Required reading
Elmasri, R., & Navathe, S., *Fundamentals of database systems*. 7th Edition, Pearson. 2016. Pages 600 (1272)

FTK, *Distributed material and research papers*. Pages 320 (320).