DD1368 Database Technology 6.0 credits

Databasteknik för D

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for DD1368 valid from Spring 2011

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Computer Science and Engineering,Technology

Specific prerequisites

For single course students: completed upper secondary education including documented proficiency in Swedish corresponding to Swedish B, English corresponding to English A. Furthermore: 7,5 hp in mathematics and 6 hp in computer science or programming technics.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The students will, upon completion of the course, be able to model and implement a database. Further on they will have written an application program operating a database.

This implies that the students should be able to:

- explain the functions and architecture of a database system
- discuss the advantages and disadvantages of different database models
- model and structure data according to actual constraints
- explain the implications of different constraints on the database
- discuss advantages and disadvantages with different implementations of a database
- decide which index structures are usable in different situations
- use a query language to formulate queries, and describe the mathematical foundations for data manipulation languages
- explain the mechanisms for optimization of queries
- explain the principles of concurrency and recovery handling
- explain the solutions to security problems
- write embedded SQL in a 3rd generation programming language.

Course contents

Definition of the relation model. Information structuring according to the “Entity Relationship”-model. Functional dependencies and what they mean for good database design. Normalization. Query languages and the mathematics behind them. Methods for storage and retrieval. Transaction handling. Assertion of security and integrity. Fourth generation development tools for design of database systems. Development of information systems. Overview of different models for data representation. Laboratory assignments using experimental and commercial systems.

Course literature

Not yet decided. Tentatively, the following book will be used: Silberschaty, Korth, Sudarshan: Database Systems Concepts. This will be announced at course web page at least 4 weeks before the course starts.

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

Other requirements for final grade

The students participating in the course are expected to take part in all activities on the course with a particular emphasis on the exercises and laboratories.

In addition the course focuses on training:

- independently acquiring knowledge
- oral and written presentation.

Examination by one written exam (TEN1; 3.0 credits), laboratory assignments, seminars and training tasks (LAB1; 3.0 credits). One of the assignments is coordinated with DH1620 Human-Computer Interaction, Introductory Course.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.