



Faculty of Economic Sciences, Communication and IT  
Computer Science

## Syllabus

### Course Approval

The syllabus was approved by the Faculty Board of Economic Sciences, Communication and IT on 16 April 2009, and is valid from the Spring semester of 2008 at Karlstad University.

**Course Code:** DVGB04

**Database Techniques, 7.5 ECTS Credits**  
(Databasteknik, 7.5 Swedish credit points)

**Degree Level:** Bachelor

**Progression Level:** B

### Language of Instruction

Swedish

### Prerequisites

Computer Science 30 ECTS cr. and MAGA43 Mathematics for Computer Scientists, 7,5 ECTS cr., or equivalent.

### Major Field of Study

Computer Science

### Learning Outcomes

Upon completion of the course students should be able to:

- give an overall description of the structure of a modern database system,
- give an account of the different parts of the relational model,
- describe how a database system deals with data transaction and storage,
- apply different methods of database design with a view to constructing a relational database system, and
- implement a relational database system and use the SQL language.

### Content and Form of Instruction

The course comprises:

- principles and use of general database systems (DBMS)
- the structure of database systems
- relational database model (computer structure, relational algebra, computer integrity)
- the programming language SQL
- methods of database design (E(R model, functional dependency, normalisation)
- storage structure for databases (indexing, B-trees)
- transaction and database security
- presentation of other types of databases, for instance, distributed and web based databases.

Instruction is mainly in the form of lectures, individual reading with study guides and study material, and hand-in assignments. There are also exercises and laboratory work in which different relational database

systems and programming language are used.

#### Reading List

See separate document.

#### Examination

Examination is in the form of laboratory assignments, hand-in assignments and a written test.

#### Grades

One of the grades 5 (Distinction), 4 (Some Distinction), 3 Pass , or Fail (U), is awarded in the examination of the course and its modules.

#### Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course assessment is based on student views and experiences as reported in written course evaluations and/or group discussions. Students will be informed of the result of the evaluation and of the measures to be taken.

#### Course Certificate

A course certificate will be provided upon request.

#### Additional Information

Students who enrolled before 1 July 2007 will complete their studies in accordance with the requirements of the earlier admission. Upon completion students may request degree and course certificates to be issued under the current ordinance if they meet its requirements.

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University, ref. C2007/368, stipulate the obligations and rights of students and staff.

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