



Faculty of Health, Science and Technology  
Computer Science

# Syllabus

## Database Techniques

<b>Course Code:</b>	DVGB08
<b>Course Title:</b>	Database Techniques <i>Databasteknik</i>
<b>Credits:</b>	5
<b>Degree Level:</b>	Undergraduate level
<b>Progressive Specialisation:</b>	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

**Major Field of Study:**  
DVA (Computer Science)

### Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2024-01-31, and is valid from the Autumn semester 2024 at Karlstad University.

### Prerequisites

Programming Techniques, 7,5 ECTS credits, or equivalent

### 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 transactions and data storage,
- apply different methods of database design in practice in order to construct a relational database system, and
- implement a relational database system and use the SQL language.

### Content

The course covers the following:

- principles for and use of general database management systems (DBMS)
- the architecture of database systems
- the relational database model (data structures, relational algebra, data integrity)
- the programming language SQL
- methods of database design (E/R model, functional dependency, normalisation)
- storage structures for databases (indexing)
- transaction management
- introduction to other types of databases, for instance distributed and web based databases

Instruction is mainly in the form of lectures, individual study of course literature and study material (reading assignments), and hand-in assignments. The course includes practical exercises and laboratory work.

### **Reading List**

See separate document.

### **Examination**

Assessment is based on laboratory tasks, hand-in assignments, and a written exam.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

### **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 evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

### **Course Certificate**

A course certificate will be provided upon request.

### **Additional information**

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.