



Faculty of Health, Science and Technology  
Computer Science

# Syllabus

## Databases

<b>Course Code:</b>	DVGA21
<b>Course Title:</b>	Databases <i>Databaser</i>
<b>Credits:</b>	7.5
<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 2018-09-11, and is valid from the Spring semester 2019 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 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

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.

**Reading List**

See separate document.

**Examination**

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

**Grades**

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

**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.