



## COURSE SYLLABUS

### Databases, 6 credits

*Databaser, 6 högskolepoäng*

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<b>Course Code:</b> TDRK18	<b>Education Cycle:</b> First-cycle level
<b>Confirmed by:</b> Dean Feb 1, 2017	<b>Disciplinary domain:</b> Technology (95%) and social sciences (5%)
<b>Revised by:</b> Director of Education Oct 22, 2021	<b>Subject group:</b> DT1
<b>Valid From:</b> Jan 1, 2022	<b>Specialised in:</b> G1F
<b>Version:</b> 3	<b>Main field of study:</b> Computer Engineering

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### Intended Learning Outcomes (ILO)

After a successful course, the student shall:

Knowledge and understanding

- demonstrate comprehension of a relational database (function, architecture and limits)
- display knowledge of fundamental database design principles
- display knowledge of transaction management, indexing and file organization within databases
- demonstrate comprehension of the main differences between relational and non-relational databases

Skills and abilities

- demonstrate the ability to design an ER-model from a provided business description
- demonstrate the ability to apply the first three normalization forms
- demonstrate the ability to formulate basic and advanced SQL queries
- demonstrate the ability to interpret SQL expressions and comprehend the obtained results

### Contents

The purpose of the course is to introduce and experience Database design and querying. After a successful course, the student shall master basics of relation databases and be able to model, design and query databases.

The course includes the following topics:

- Relational Databases - Introduction, Theory, Purpose
- Database Design - ER model
- Normalization
- Structured Query Language and Query writing
- Multi-table Queries - Joins, Relations
- Usage of databases and database systems with software and/or mobile development
- Advanced SQL, Transactions, Indexing

### Type of instruction

Tuition will consist of lectures, exercises and lab work.

The teaching is conducted in English.

### Prerequisites

General entry requirements and completed courses in Introduction to Programming, 9 credits (or the equivalent).

### Examination and grades

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Examination <sup>1</sup>	4 credits	5/4/3/U
Practical Assignment	2 credits	U/G

<sup>1</sup> Determines the final grade of the course, which is issued only when all course units have been passed.

### Course literature

The literature list for the course will be provided 8 weeks before the course starts.

Title: Fundamentals of Database Systems, Seventh Edition

Author: Elmasri & Navathe

Publisher: Pearson

ISBN: 978-1-292-09761-9