GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Relational Databases (E761028)

Course size *(nominal values; actual values may depend on programme)*

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2024-2025

A (semester 1)	Dutch	Gent	seminar
			lecture

Lecturers in academic year 2024-2025

De Tré, Guy	TW07	lecturer-in-charge

Offered in the following programmes in 2024-2025	**crdts**	**offering**
Bachelor of Science in Engineering Technology(main subject Information Engineering Technology)	6	A
Linking Course Master of Science in Information Engineering Technology	6	A
Preparatory Course Master of Science in Information Engineering Technology	6	A

Teaching languages

Dutch

Keywords

SQL, database systems, data modelling, database design

Position of the course

This course is intended as a classic basic course in which on the one hand the fundamentals of relational databases are studied and on the other hand considerable attention is paid to the practical use of relational databases, with main emphasis on SQL, ER modeling and database design.

Contents

- Introduction: Databases and database systems
- Conceptual database design: The 'entity relationship' model
- Relational databases: The relational database model, logical database design, physical database design and SQL
- Object technology in databases: SQL:2011
- NoSQL database systems
- Working with database systems: Security, Failure and recovery, Concurrency control

Initial competences

Strict prerequisites: none
Advisory initial competences:
Knowing the basic concepts of information technology, as taught in the part basic knowledge of "Informatica I".
Having some programming experience and knowledge of data structures, as e.g. learned in "Object Oriented Programming".
It is recommended to simultaneously follow the course "Data structures".

Final competences

1 Being familiar with the basic concepts of database systems and databases.
2 Designing, setting up and maintaining relational databases.
3 Manipulating and querying relational databases: applying standard SQL techniques faultlessly.
4 Understanding how object technology can be used in relational databases.
5 Understanding how relational database systems work.

6 Having insight into NoSQL systems.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Seminar, Lecture

Extra information on the teaching methods

Supervised exercises: SQL, ER modelling, database design and functionality of a dbms.

Study material

Type: Handbook

Name: Principles of databases, 3e edition
Indicative price: € 52
Optional: no
Language : Dutch
Author : Guy De Tré
ISBN : 978-9-04304-157-7
Number of Pages : 580
Available through Student Association : Yes
Usability and Lifetime within the Course Unit : intensive
Usability and Lifetime within the Study Programme : regularly
Usability and Lifetime after the Study Programme : occasionally

References

R. Elmasri, S.B. Navathe, Fundamentals of Database Systems, Seventh Edition, Pearson Addison-Wesley, Boston USA, 2016 (ISBN: 9780133971330)
J. Celko, SQL for Smarties, Morgan Kaufmann, 2014 (ISBN: 978-0128007617)

S. Faroult, P. Robson, The Art of SQL, O'Reilly, 2006 (ISBN: 978-059600894-9)
A. Molinaro, SQL Cookbook, O'Reilly, 2009 (ISBN 978-059600976-2)

Course content-related study coaching

All exercise courses are supported by assistants.
An appointment with the lecturer or assistants can always be made.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment

Examination methods in case of periodic assessment during the second examination period

Written assessment

Examination methods in case of permanent assessment

Skills test

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

Periodic evaluation:
- Open questions on theory
- Excercises

Non-periodic evaluation:
- SQL database querying (1st examination period: 2 tests in PC class: 2nd exam period: 1 test in PC class)

Calculation of the examination mark

First and second exam period:
Periodic evaluation: 75%; non-periodic evaluation: 25%.
The end score is the weighted mean of the periodic and non-periodic evaluation.

Facilities for Working Students

This course has an online excercise system for SQL.