GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2026-2027

Database Management (E018125)

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

Credits 6.0 **Study time 180 h**

Course offerings in academic year 2026-2027

A (semester 1)	Dutch	Gent
B (semester 1)	Dutch	Gent

Lecturers in academic year 2026-2027

De Tré, Guy	TW07	lecturer-in-charge

Offered in the following programmes in 2026-2027	**crdts**	**offering**
Bachelor of Science in Engineering(main subject Computer Science Engineering)	6	A, B
Bridging Programme Master of Science in Bioinformatics(main subject Engineering)	6	A
Bridging Programme Master of Science in Computer Science Engineering	6	A
Master of Science in Bioinformatics(main subject Engineering)	6	A

Teaching languages

Dutch

Keywords

Database systems, data modelling, database design, SQL.

Position of the course

The objective of this course is twofold. On the one hand, this course is meant to be a classic basic course studying the fundamental theory about data bases. On the other hand it focuses on the practical use of data bases, privileging the relational model.

Contents

- Databases, database models and database systems
- The relational database model
- The relational database language SQL
- Query-By-Example (QBE) and APIs for database access
- Working with database systems: Security, recovery after failure and concurrency
- Introduction to the management of big data and NoSQL database models
- Conceptual database design: the 'enhanced-entity-relationship' (EER) model
- Logical relational database design: relational mapping and normalisation
- Physical relational database design: database implementation, primary file organisation and secondary file organisation

Initial competences

None

Final competences

1 Be familiar with the basic concepts of databases, database models and database systems.
2 Be able to edit and query relational databases with SQL, QBE and APIs.
3 Understand how a database system works.
4 Know the basics of NoSQL databases.
5 Be able to conceptually, logically and physically design relational databases.

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, EER modelling, database design and functionality of a dbms. The teacher and assistants are by appointment available for additional explanation or individual support.

Study material

Type: Handbook

Name: Principes van databases, 3e editie
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)

Course content-related study coaching

All exercise courses are supported by assistants.

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:
- Theory (closed book)
- Exercises (open book)

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 uses the online practice platform Dodona for the SQL exercises.