GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2020-2021

Databases (E018110)

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

Credits	6.0	Study time	180 h	Contact hrs	60.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	seminar: coached exercises	6.25 h
		seminar: practical PC room classes	23.75 h
		lecture	30.0 h

Lecturers in academic year 2020-2021

De Tré, Guy	TW07	lecturer-in-charge

Offered in the following programmes in 2020-2021	crdts	offering
Bachelor of Science in Engineering (main subject Computer Science Engineering)	6	A
Bachelor of Science in Mathematics	6	A
Bachelor of Science in Computer Science Engineering	6	A
Preparatory Course Master of Science in Bioinformatics (main subject Engineering)	6	A

Teaching languages

Dutch

Keywords

Database systems, data modelling, database design

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

- Introduction: Databases and database systems, Data models and database models
- Conceptual database design: The (extended) 'entity relationship' model
- Relational databases: The relational database model, Logical database design, Physical database design and SQL
- Object technology in databases: ODMG 3.0 and SQL:2011
- Accessibility for applications: APIs
- NoSQL database systems
- Working with database systems: Security, Failure and recovery, Concurrency control

Initial competences

Being familiar with data structures and having basic programming skills

Final competences

1 Being familiar with the basic concepts of database systems and databases.
2 Designing, setting up and maintaining databases.
3 Manipulating and querying databases.
4 Understanding how object technology and API's can be used.
5 Understanding how database systems work.

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

Lecture, seminar: coached exercises, seminar: practical PC room classes

Extra information on the teaching methods

Exercises in PC classes: SQL and setting up of databases. It is possible to make the SQL excercises online.
Supervised exercises in classroom: EER-modelling and normalisation.

Learning materials and price

Handbook: G. De Tré, Principes van databanken, Pearson Education Benelux, Amsterdam, 2017 (ISBN:978-90-430-3580-4); indicative price: 50 EURO (Dutch)
Additional course material is available on Ufora

References

R. Elmasri, S.B. Navathe, Fundamentals of Database Systems, Seventh Edition, Pearson Addison-Wesley, Boston USA, 2016 (ISBN: 9780133971330)

Course content-related study coaching

All exercise courses are supported by assistants.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination, open book examination

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

Written examination, open book examination

Examination methods in case of permanent evaluation

Assignment, skills test

Possibilities of retake in case of permanent evaluation

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
- Database design project

Calculation of the examination mark

First and second exam period:
Periodic evaluation: 65%; non-periodic evaluation: 35%.
Special condition: If the score of the periodic and/or non-periodic evaluation is lower than 10/20, then the end score will be the lowest score of both.
For a score of 10/20 or more on the periodic or non-periodic evaluation there is a points transfer to the second exam period.
The score of the non-periodic evaluation is the weighted average obtained from 70% SQL database querying and 30% database design project.

Facilities for Working Students

This course has an online excercise system for SQL.