GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2016-2017

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 2017-2018

A (semester 1)	seminar: coached exercises	12.5 h
	lecture	30.0 h
	seminar: practical PC room classes	17.5 h

Lecturers in academic year 2017-2018

De Tré, Guy	TW07	lecturer-in-charge

Offered in the following programmes in 2017-2018	crdts	offering
Bachelor of Science in Geography and Geomatics (main subject Surveying)	6	A
Bachelor of Science in Computer Science	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 SQL3
- Accessibility for applications: APIs
- 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, 2013 (ISBN:978-90-430-1302-4); indicative price: 50 EURO (Dutch)
Additional course material is available on Minerva

References

R. Elmasri, S.B. Navathe, Fundamentals of Database Systems, Sixth Edition, Pearson Addison-Wesley, Boston USA, 2011 (ISBN: 9780136086208)

Course content-related study coaching

All exercise courses are supported by assistants.

Evaluation methods

end-of-term evaluation

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

Written examination

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

Written examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

During examination period:
- Theory part: written closed-book exam
- Excercise part: written open-book exam

Calculation of the examination mark

Evaluation during exam period.
First and second exam period: Exercises: 60%; theory: 40%
Special condition: If the score of the theory part and/or exercise part is lower than 7/20, then the end score will be the lowest score of both parts.

Facilities for Working Students

This course has an online excercise system for SQL.