

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	10.0 h
	lecture	30.0 h
	seminar: practical PC room classes	20.0 h

Lecturers in academic year 2017-2018

De Tré, Guy	TW07	lecturer-in-charge
Bronselaer, Antoon	TW07	co-lecturer

Offered in the following programmes in 2017-2018

	crdts	offering
Master of Science in Business Engineering (main subject Data Analytics)	6	A
Master of Science in Business Engineering (main subject Finance)	6	A
Master of Science in Business Engineering (main subject Operations Management)	6	A
Master of Science in Geomatics and Surveying	6	A
Master of Science in Computer Science	6	A
Master of Science in Mathematical Informatics	6	A
Master of Science in Information Engineering Technology	6	A
Master of Science in Computer Science Engineering	6	A
Master of Science in Computer Science Engineering	6	A

Teaching languages

Dutch

Keywords

pre- and post-relational database technology, data warehousing, data mining, ERP, NoSQL, data quality and decision support systems

Position of the course

Miscellaneous topics are studied to complement the course Databases. The largest part of the course is devoted to modern information management techniques like data mining, data warehousing, ERP, NoSQL, distributed database technology, techniques for improving data quality and systems for multi-criteria decision support. Next to this, prerelational database models are studied because of their practical relevance and attention is paid to diverse performance aspects of physical data(base) storage.

Contents

- Data mining: Concepts and techniques (predictive modelling, clustering, association analysis)
- Data warehousing: Concepts and techniques
- Notions on primary file organization for database systems
- Notions on secondary file organization for database systems
- Notions on the network database model
- NoSQL solutions for managing Big data
- Aspects of Enterprise Resource Planning
- Distributed database technology (client-server architectures, multi-database systems, distributed database systems, mobile databases)
- Advanced techniques (data quality, multi-criteria decision support)

Initial competences

basic principles of (relational) databases

Final competences

- 1 Understand the basic principles of physical database storage and indexing.
- 2 Understanding how pre relational database systems, data warehouse systems, ERP systems and multi-criteria decision support systems work and can be set up.
- 3 Understand some techniques for improving data quality.
- 4 Understand and apply data mining techniques for predictive modelling, clustering and association analysis.
- 5 Knowing how 'Big' data can be managed via NoSQL and distributed database technology.

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

Learning materials and price

Syllabus (In English). Additional course material is available on Minerva Basic price: 20 EURO

References

- R. Elmasri, S.B. Navathe, Fundamentals of Database Systems, Sixth Edition, Pearson Addison-Wesley, Boston USA, 2011 (ISBN: 9780136086208)
- Mary Sumner, Enterprise Resource Planning, Pearson Education-Prentice Hall, 2005 (ISBN: 0-13-140343-5)
- G. De Tré, Principes van databases, Pearson Education Benelux, 2013 (ISBN: 978-90-430-1302-4)

Course content-related study coaching

All exercise courses and the practicum are supported by assistants.

Evaluation methods

end-of-term evaluation

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

Open book examination, oral examination

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

Open book examination, oral 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: oral closed-book exam, written preparation
- Exercise part: written open-book exam

Calculation of the examination mark

Evaluation during exam period.

First and second exam period: exercises: 50%; theory: 50%.

Special condition: If the score of the theory and/or exercise part is lower than 7/20, then the end score will be the lowest score.