Course Specifications
Valid as from the academic year 2017-2018

Business Information Systems (F000447)

Course

Lecturers in academic year 2017-2018
Poels, Geert

EB08 lecturer-in-charge

Course offerings and teaching methods in academic year 2017-2018
A (semester 1)

Dutch lecture: plenary
lecture
30.0 h
group work
28.75 h

EB08

seminar: practical
6.25 h

E (semester 1)

English guided self-study
30.0 h

seminar: practical
6.25 h

lecture: response
10.0 h

group work
28.75 h

Offered in the following programmes in 2017-2018

Bachelor of Science in Economics
7 A

Bachelor of Science in Business Engineering
7 A

Bachelor of Science in Business Economics
7 A

Master of Science in Economics
7 A

Linking Course Master of Science in Business Economics
7 A

Preparatory Course Master of Science in Business Economics
7 E

Preparatory Course Master of Science in Business Engineering
7 E

Preparatory Course Master of Science in Business Economics
7 A

Preparatory Course Master of Science in Business Engineering
7 A

Teaching languages
Dutch, English

Keywords

Business Informatics, information systems development, business process modelling, conceptual modelling, database development, programming of database-applications, implementation of relational database systems, SQL, ERP systems

Position of the course

In this course students get acquainted with complex issues concerning the development of information systems (e.g., ERP systems). The focus is on the systematic development of relational databases systems, in which both relational database technology and several established and modern techniques of data modelling (ER, EER, UML), database modelling (relational model, SQL-DDL) and database usage/querying (SQL-DML, SQL-DQL) are studied and practiced. These techniques are complemented with a study of process modelling techniques (Petri Nets, UML Activity Diagrams, BPMN, EPC) in the context of Business Process Management. An other objective of this course is to develop skills concerning database design and -management, and systems development by means of exercises on the PC and a project in groups.

Contents

Theoretical part:
• Chapter I: Business Process Modeling

(Approved)
• Chapter II: Data Modelling
• Chapter III: Database Design
• Chapter IV: Databasemanagement
• ERP systems: guest lecture by SAP

Practical part :
• Modelling exercises (ER, BPMN)
• Use of modelling tools (Jools)
• Design of databases and queries (data map, SQL)
• Development of end-user databases with Access (students TEW) or MySQL (students HIR)
• Programming of database applications with Java (students HIR)
• Connecting programs and databases with JDBC (students HIR)

Project work (integrated application of the theoretical and practical part):
• Modelling, designing, programming and testing of a relational database system in groups
  • students HIR: using Jools, ER, BPMN, data map, SQL, Java, JDBC and MySQL
  • students TEW: using Jools, ER, BPMN, data map, SQL and Access

Initial competences
• Students Applied Economics: Informatics.
• Students Business Engineering: Informatics & Object-Oriented Programming

Final competences
1 Be able to develop conceptual models (business process models, data models) and understand and analyze conceptual models.

2 Be able to design, implement and manage a database-oriented and process-aware information system

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
Guided self-study, group work, lecture, lecture: plenary exercises, seminar: practical PC room classes, lecture: response lecture

Extra information on the teaching methods

Aanbodsessie A:
• Ex cathedra for theory chapters I to IV plus guest lecture ERP systems by SAP speaker
• Plenary practice sessions process modeling, data modeling, database design and SQL
• computer class sessions Jools and Access (students TEW) and Jools, MySQL, Java and JDBC (students HIR)
• Project work: developing a database-oriented enterprise information system (students TEW) or process-aware database-oriented enterprise information systems (students HIR) in group

Aanbodsessie E:
• Guided self-study for theory chapters I to IV. A study guideline will orientate students to the relevant on-line course materials for each of the theoretical chapters. The guideline also contains a model schedule for when to study what materials. Students can obtain feedback from the teacher on an individual basis (after appointment). Possibility to ask questions through the on-line forum on Minerva.
• Guest lecture on ERP systems by a speaker from SAP
• Response colleges for discussion of assignments/exercises and summarizing the main elements of each of the theoretical chapters
• Computer class sessions Jools and Access (students Preparatory Course Master in Business Economics) and Jools, MySQL, Java and JDBC (students Preparatory Course Master in Business Engineering)
• Project work: developing a database-oriented enterprise information system (students Preparatory Course Master in Business Economics)) or process-aware database-oriented enterprise information systems (students Preparatory Course Master in Business Engineering) in group

Learning materials and price

Aanbodsessie A:
For TEW and HIR
• Course materials on Minerva:
• Powerpoint presentations of the theoretical and practical course sessions
• Additional course notes
• Solutions of exercises
• Material w.r.t. exercises and project

Additional for TEW
• textbook MS Access, Eddy Van den Broeck en Erik Cuypers. published by de boeck.

Additional for HIR
• additional course materials on MySQL, Java and JDBC (via Minerva)

Aanbodssessie E:
For students Preparatory Course Master in Business Economics and Preparatory Course Master in Business Engineering:
Course materials made available on Minerva:
- Powerpoint presentations for the response colleges
- A reader with papers, course notes, book chapters, ...
- A study guideline for how to use the reader
- Solutions of exercises
- Material w.r.t. exercises and project

Additionally for students Preparatory Course Master in Business Economics
- additional course materials Access (via Minerva)

Additionally for students Preparatory Course Master in Business Engineering
- additional course materials MySQL, Java and JDBC (via Minerva)

References
A reader with papers and references to relevant literature and research (including research of the UGent Business Informatics research group) is made available (via Minerva)

Course content-related study coaching
via Minerva: Forum, Student Publications, Dropbox
Individual guidance is possible

Evaluation methods
end-of-term evaluation and continuous assessment

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

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

Examination methods in case of permanent evaluation
Oral examination, assignment, peer assessment, report
Possibilities of retake in case of permanent evaluation
examination during the second examination period is possible in modified form

Extra information on the examination methods
Periodegebonden: A written open book exam with multiple choice questions and open answer questions, which evaluates knowledge of and critical understanding of the material taught as well as the ability to apply it.
Niet-periodegebonden: project, evaluated based on a report, the end result of the system development, feedback through peer assessment, and the presentation of the result. Here the ability to develop in group a relational database system is assessed.
For the project the second chance exam is a computer exam which covers Access for TEW students and MySQL, JDBC and Java for HIR students.

Calculation of the examination mark
Score1: score open book exam. The Ghent University standard setting will be used to score the multiple choice questions.
Score2: Score project work (second chance: score PC exam)
Final score = 0.6 * Score1 + 0.4 * Score2

Facilities for Working Students
No participation in the project work required. Instead they prepare for an additional computer exam Access (TEW students) or Java, JDBC and MySQL (HIR students)