Offered by
ICT Engineering

Database Systems

ECTS
5

Prerequisites
SDJ1 or similar

- IT-SDJ1

Main purpose
The main purpose of the course is two-fold. Firstly, students are to learn methods for designing, implementing and operating single-user relational databases. Secondly, students are to learn the main principles, architecture and technologies of a typical relational database management system (RDBMS).

Knowledge
Students will obtain theoretical knowledge on designing relational databases for practical application using a theoretical data modelling methodology. Students will obtain theoretical knowledge about relational algebra, UML notation for databases, E/R models, relational models, SQL, normalization, transaction handling and concurrency control.

Skills
Having completed this course, students will be able to:

- create ER-Models with UML
- understand and explain the relational model
- use Data Definition Language (DDL) to create databases
- use Data Manipulation Language (DML) to manipulate data in a database
- map ER-Models to Relational Models
- use basic SQL statements to create, replace, update and delete data in a database
- understand and use keys in relational databases
- understand and use joins
- handle the process of normalization to 3NF

Competences
Having completed this course, the students will be able to create database based applications using industry standard tools and methods.

Topics

Teaching methods and study activities
Lessons alternate between theory and practical exercises using the PostgreSQL relational DMBS. The course contains one or more compulsory assignments.

CATEGORY 1
Participation of lecturer and students
Initiated by the lecturer
55 hours- 40%

- Lessons, scheduled
- Exams and tests

CATEGORY 2
Participation of students
Initiated by the lecturer
50 hours - 37%

- Assignments, self-study
- Project and group work
- Homework and preparation for exams

CATEGORY 3
Participation of students
Initiated by students
25 hours - 19 %

- Homework and preparation for exams
- Self-study

- Study groups

CATEGORY 4
Participation of lecturer and students
initiated by students
5 hours - 4 %

- Project guidance

Resources
Connolly, Thomas and Begg, Carolyn: Database Systems (5th edition). Harlow, 2010, Pearson Education. ISBN: 987-0-321-52306-8

Evaluation
Permit criteria for attending examination

- Mandatory assignments handed in be-fore deadline and accepted.

Duration (grading included) app. 20 min/ 5 ECTS.

Examination

Oral Examination

Individual oral examination without preparation based upon course assignment(s).

Individual oral examination based upon a subject found by draw.

No preparation.

Allowed tools: All.

Internal examiner.

Grading criteria
Examinations account for 100 % of final grade.

Additional information

Responsible
Ole Ildsgaard Hougaard

Valid from
1.2.2018

Course type
Global Business Engineering;Compulsory Course for GBE-ICT;5. semester;
ICT Engineering;Compulsory Course for all ICT Engineering;2. semester;

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