inf111 - Advanced Database Practical

Module label: Advanced Database Practical
Module code: inf111
Credit points: 6.0 KP
Workload: 180 h
Used in course of study:
- Master's Programme Business Informatics > Bereichswahlmodule
- Master's Programme Computing Science > Praktische Informatik

Contact person
Module responsibility
- Marco Grawunder
- Die im Modul Lehrenden

Authorized examiners
- Marco Grawunder
- Die im Modul Lehrenden

Entry requirements
- Informationssysteme I

Skills to be acquired in this module
Objective of the module/skills:
The module enhances the previous knowledge of databases and information systems. In the context of a professional database system the students realize, implement, install and optimize the system. Theoretical and mathematical approaches are additional contents. Additionally the course provides the capability both to describe the differences between NoSQL Databases and (Object-)Relational Databases and how to use them.

Professional competence
The students:
- name realisation techniques, implementations und programming of database systems
- program and implement database oriented system routines
- administer a professional database system
- identify database system performance problems and solve them appropriately

Methodological competence*
The students:
- make optimisation decisions during the modelling phase
- construct optimisation strategies mathematically

Social competence
The students:
- develop appropriate implementations for given problems in a team

Self-competence
The students:
- acknowledge the limits of their ability to cope with pressure during the implementation of database specific solutions

Module contents
Content of the Module:
The module is a practical course. It is a continuation of the modules Information Systems I and Information Systems II. This module especially deals with the technical and theoretical concepts of database systems. Practical database implementation approaches and optimisation concepts are additional content of the module.

In detail the module provides: low-level database management programming, aspects of catalogue systems implementation, optimisation strategies based on different parallelisation and partitioning strategies, query concepts and modification.
Reader's advisory  
**Suggested reading:**

- Held Andrea (2007), Oracle 10g Addison-Wesley.
- Oracle 10g, Das Programmierhandbuch, Galileo Computing
- Oracle Database 11g, DBA-Handbuch, Oracle Press-Hanser Verlag
- NoSQL (2011) Hanser Verlag

**Links**
- **Language of instruction**: German
- **Duration (semesters)**: 1 Semester
- **Module frequency**: jährlich
- **Module capacity**: unlimited
- **Modullevel**: AS (Akzentsetzung / Accentuation)
- **Modulart**: je nach Studiengang Pflicht oder Wahlpflicht
- **Lern-/Lehrform / Type of program**: 1 PR
- **Vorkenntnisse / Previous knowledge**: - Operating systems skills

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<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
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<tr>
<td>Final exam of module</td>
<td>at the end of the lecture period</td>
<td>hands-on exercises and oral exam</td>
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**Course type**: Practical

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<th>SWS</th>
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<th>Workload attendance</th>
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