inf111 - Advanced Database Practical

<table>
<thead>
<tr>
<th>Module name</th>
<th>Advanced Database Practical</th>
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<tr>
<td>Module code</td>
<td>inf111</td>
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<tr>
<td>ECTS credit points</td>
<td>6.0 KP</td>
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<tr>
<td>Workload</td>
<td>180 h</td>
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| Used in degree programmes | Master's Programme Business Informatics > Bereichswahlmodule  
                           | Master's Programme Computing Science > Mastermodule |
| Contact person            | module responsibility      |
|                           |  
|                           | ☺ Marco Grawunder           |
|                           | ☺ Die im Modul Lehrenden    |
| Authorized examiners      | ☺ Marco Grawunder           |
|                           | ☺ Die im Modul Lehrenden    |
| Prerequisites             | 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
## 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.

## Recommended reading

### 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

### Examination

#### Examination periods

- at the end of the lecture period

#### Type of examination

- hands-on exercises and oral exam

### Course type

Practical

### SWS

4
| Workload attendance | 56 h |