

| Submodule | | TM abbreviation |
|---|----------------------------------|-----------------|
| Datawarehouse | | DW |
| Responsible person | Faculty | |
| Prof. Dr Johannes Schildgen | Computer Science and Mathematics | |
| Teacher / Lecturer | Frequency of supply | |
| Prof. Dr Johannes Schildgen | | |
| Teaching form | | |
| Seminars (2 SWS) with exercises (2 SWS) | | |

| Semester of study according to curriculum | Teaching scope [SWS or UE] | Teaching language | Work effort [ECTS credits] |
|---|-------------------------------|-------------------|-------------------------------|
| 6. / 7. | 4 SWS | German/English | 5 |

Time commitment:

| Attendance study | Self-study |
|------------------|------------|
| 60h | 90h |

| Study and examination performance |
|---|
| Written exam and / or written examination and / or oral examination |

| Contents |
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| <p>This course teaches the fundamentals of data warehousing. This includes:</p> <ul style="list-style-type: none"> - Fundamentals of Data Warehouses - Data Warehousing Architecture - Multi-dimensional Data Modelling, Star/Snowflake Scheme - ETL Process, Data Cleaning, Data Integration - Data Analytics - Advanced SQL: Grouping Sets, Window Functions, Skyline Queries <p>The theoretical basics taught are practised directly in practice with modern databases.</p> |
| Learning objectives: Professional competence |

After successful completion of the submodule, students are able to,

- Describe the internal structure of a data warehouse, the associated OLAP process and the necessary loading processes from production operations (1),
- create smaller data warehouse systems, trigger ETL processes and perform OLAP queries (2),
- operate larger data warehouse systems, solve performance problems, control complex ETL processes and design elaborate OLAP queries and interpret their results correctly (3).

Learning objectives: Personal competence

After successful completion of the submodule, students are able to,

- Understand and operate complex data warehouse systems and conduct extensive analyses of their own independently(3)

Teaching materials offered

Lecture notes
 PowerPoint presentation
 All programmes used in the course

Teaching media

Blackboard, beamer with notebook

Literature

- Köppen/Sattler/Saake: Data Warehouse Technologies, 2014
- Bauer/Günzel: Data Warehouse Systems, dpunkt, 2013
- Mehrwald: Datawarehousing with SAP BW 7.3, dpunkt, 2013
- Kimball/Ross: Kimball's Data Warehouse Toolkit, Wiley&Sons, 2009
- Kemper/Baars/Mehanna: Business Intelligence, Springer, 2010
- Jockisch: Data Warehouse and SAP Business Information Warehouse, script OTH Regensburg
- Short: Data Warehousing, mitp, 1999

Further information on the course

Recommended prerequisites: Extensive knowledge of databases

The numbers in brackets indicate the levels to be reached: 1 - know, 2 - can, 3 - understand and apply.