

Module	Database Systems and Data Management
Semester(s)	2, summer semester
Responsible	Rüdiger Steffan, Prof. Dr.-Ing. www.wi.hs-wismar.de/ruediger.steffan ++49 3841 753 7606
Lecturer	Rüdiger Steffan, Prof. Dr.-Ing.
Language	English
Curriculum	Core module in the degree programme Master of Business Systems
Type of teaching	<p>Preparatory self-studies according to study guides and on-line tutorials. Students are expected to complete exercises preliminary to the module for refreshing basic knowledge.</p> <p>Private studies based on web seminars and study notes including literature research and case studies using textbooks and selected scientific articles. Application of the gained knowledge, skills and experience to a continuative course project. Scientific presentation and multidisciplinary interpretation of the results.</p> <p>Support is given via learn management systems including references, files, as well as various possibilities for communication like email, forum, chat, or wiki-pages.</p>
Workload	Focused work on the topics during the semester is required. A full-day workshop including assessment test. Preparatory work and case study including term paper require independent and focused attention. Approximately 110 hour self-study.
Credit points	5
Prerequisites	First experience of scientific-oriented project work. Undergraduate business study subjects statistics, controlling, value chain management and introduction to business informatics.
Module objectives	<p>Knowledge: Advanced knowledge of modern architectures and design methods of database or rather information systems. Management frameworks that organizes the concept of information management. In-depth understanding of data processing principles and requirements in enterprises involving fundamental business knowledge. Sophisticated data structures. Advanced design methods and information retrieval for business analytics and decision-making.</p> <p>Skills: Students can independently conduct and control a database-oriented project with focus on management or decision making rather than programming or technically administrating. They gain proficiency in requirement analysis and the design of different types of databases and performing sophisticated database-driven analytical tasks for controlling (with sales, purchase or marketing knowledge) on various types of data. Students acquire inquisitive attitude towards research in data management topics.</p> <p>Competencies: Competence sufficient to identify current and emerging information technologies that may have strategic value for enterprises. Assess where those technologies have value. Manage the implementation of those technologies in the enterprise. Participate or chair in requirements and design. Explain, critique and discuss advanced concepts to other professionals. Ability to apply learned knowledge and approach to a partially new data management topic based on scientific-oriented articles.</p>
Content	<p>Concepts of enterprise database systems and advanced data management.</p> <p>Database Architectures and Organizational Technologies:</p> <ul style="list-style-type: none"> • Modern Database Architecture and Storage Concepts • Advanced Information Retrieval, Data Exchange and Data Integration • Web-Scale Data Management for the Cloud and Database Security <p>Sophisticated Data Models and Business Decisions:</p> <ul style="list-style-type: none"> • Advanced Conceptual Modeling, Design and Implementation for Business • Database-driven Analytical Techniques and Methods for Data Science • Pervasive BI-Tools, Packaged Analytic Applications and Web Applications <p>Hands-on case studies to apply the methods and techniques to business problems.</p>

Module Handbook, Master of Business Systems, Hochschule Wismar

Examination	Review of case study, oral presentation or written exam. Assessment details will be provided at the beginning of the semester.
Reading list	<p>In addition to the books below (latest edition each), recent scientific-oriented articles are provided (on-line or printed). Each case study project will include additional articles on an even more sophisticated and detailed level (see competence).</p> <ul style="list-style-type: none"> • B. Bowhill: Business Planning and Control, Chichester: Wiley. • A. Bytheway: Investing in Information: The Information Management Body of Knowledge, Springer. • Data Management Association http://www.dama.org/ • M. Golfarelli, S. Rizzi: Data Warehouse Design: Modern Principles and Methodologies, McGraw-Hill. • W.H. Inmon, D. Linstedt: Data Architecture: A Primer for the Data Scientist: Big Data, Data Warehouse and Data Vault, Morgan Kaufmann. • R. Kimball, M. Ross: The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, Wiley. • W. Lehner, K.-U. Sattler: Web-Scale Data Management for the Cloud, Springer. • S. Mohanty, M. Jagadeesh: Big Data Imperatives: Enterprise Big Data Warehouse, BI Implementations and Analytics, Apress. • Oracle Corp.: Database Documentation/Concepts, https://docs.oracle.com
Notes	Topics are related to Business Process Design, IT Management and Controlling or Computer Models for Business Decisions.