

Module title Modern Database Concepts				
Module code MDK	Level Master (M.Sc.)	Hours per week 4	ECTS credits 5	Duration 1 semester
Module instructor Prof. Dr. Scherzinger	Lecture type Interactive seminar with integrated exercises	Prerequisite(s) Databases Solid programming skills Operating systems		Grading Final exam
Objectives				
<ul style="list-style-type: none"> • Students understand the importance of scalability in the processing of large amounts of data. • Students will acquire knowledge about the strengths and limits of relational databases. • Students make design decisions at NoSQL databases as well as their implications • Students will learn approaches to development of scalable web applications and to capable of implementing it • Students classify cloud-based services as Infrastructure-as-a-service, platform-as-a-Service and Software-as-a-Service 				
Content				
<ul style="list-style-type: none"> • Infrastructure of cloud-based companies such as Google, Facebook or Amazon. • The Map-Reduce approach • Platform-as-a-Service services the example of Google Apps Engine. • Efficient processing of large amounts of data in data-Warehouse applications and for scientific purposes. • A study of work in the students their own cloud implement based Web application. 				
Textbook/teaching material				
<ul style="list-style-type: none"> • Selection of scientific publications on Google File System, BigTable, Hadoop. Hadoop in Action by Chuck Lam, published by Manning Verlag., 2011 • Programming Google App Engine by Dan Sanderson, O'Reilly, of 2010. • Database Management Systems by Ramakrishnan and Gehrke, published by McGraw-Hill Publishers., 2002 				

Note: this is not the official course descriptor according to the "Studien- und Prüfungsordnung" (SPO)