0 Administrivia

Office: 2/359 (currently more likely to be in my home office)
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Office hours: by appointment

This class offers 4 hours of in class teaching per week. In the time of the Corona pandemic, the in class sessions are replaced by video conferences and online communication until further notice.
The exam will take place at HFT in person during the official exam weeks.
You can earn 6 credit points in this class.
1 CP in the ECTS (European Credit Transfer System) equals 30 hours of student work. Therefore, expect a workload of roughly 180 hours altogether for this class in this semester.

To pass the class you need:

- Exam (graded): normally written in class (120 minutes), open book (you can bring to the exam: 2 text books about databases, all the materials that you find in the Moodle course, your own notes, a language dictionary).
  To pass the exam you need to understand the material and be able to apply it to new situations. It is not sufficient to just learn it by heart or simply reproduce what is written in the class notes.

- Prerequisite for participating in the exam:
  For students in Software Technology Digital Processes and Technologies: successful database project during the semester with oral presentation in June. This pre-exam will be graded on a pass/fail basis.
  The Mathematics students do not need to do the project, as it is not in their examination requirements.

You are encouraged to actively participate during lectures! Ask questions and also answer questions of others.

Recommendable Reading

<u>Fundamentals:</u>

- Connolly, Thomas; Begg, Carolyn:
  Database Systems - A Practical Approach to Design, Implementation, and Management
  Addison-Wesley
  => my favourite book. Detailed, very complete, with many examples, easily readable.
- Elmasri, Ramez; Navathe, Shamkant:

Fundamentals of Database Systems, International Edition
Addison Wesley
=> a standard work of database literature. Very well written and complete.

SQL:

- Can Türker:
  SQL: 1999 & SQL: 2003
  dpunkt Verlag
  => a good text book about some of the newer SQL extensions

Transaction Management:

- Gray, Jim; Reuter, Andreas:
  Transaction Processing - Concepts and Techniques
  Morgan Kaufmann
  => the „Bible" of transaction management.
- Bernstein, Philip; Newcomer, Eric:
  Transaction Processing for the Systems Professional
  Morgan Kaufmann
  => shorter book with good descriptions of transaction management procedures.

NoSQL Databases:

- Shashank Tiwari: ***Professional NoSQL***, Wiley
- Kristina Chodorow: ***MongoDB: The Definitive Guide***, O'Reilly

XML and Databases:

- Klettke, Meike; Meyer, Holger:
  XML & Datenbanken - Konzepte, Sprachen und Systeme
  dpunkt Verlag
- Mark Graves, Charles F. Goldfarb: ***Designing XML Databases***, Prentice Hall

Mobile Databases:

- Vijay Kumar: **Mobile Database Systems**
  Wiley

Distributed Systems:

- Özsu, Tamer; Valduriez, Patrick:
  Principles of Distributed Database Systems
  Prentice Hall

Object-oriented Systems:

- Kemper, Alfons; Moerkotte, Guido:
  Object-Oriented Database Management - Appliations in Engineering and

Computer Science
Prentice Hall

- Barry, Douglas:
  The Object Database Handbook - How to Select, Implement, and Use Object-Oriented Databases
  Wiley

Miscellaneous:

- Hamilton, Graham; Cattell, Rick; Fisher, Maydene:
  JDBC™ Database Access with Java™
  Addison Wesley
- Stonebraker, Michael (ed.):
  Readings in Database Systems
  Morgan Kaufmann

Please note:
It is NOT necessary to read all of these books, or even just a single one of them completely! For achieving a very good exam result, it should be sufficient to work with the class materials that I provide (class notes, exercises, solutions, communication,...). However, as academics, it is necessary to be able to research topics in greater detail. Therefore, you should get used to reading literature in addition to your classes. This is a good preparation for your thesis.