# Database Technology

## Course Plan

**EDA216, study period 3 2014/15**
**(with project work during period 4).**
**7.5 credits.**

### Administrative Information

*Welcome!* In this course you will learn about databases, both in theory and in practice. We concentrate on relational databases. You will also learn to use SQL and to write Java and PHP programs that interface to a database.

*Changes since last year* There are no longer any scheduled exercise sessions. The exercise assignments are still available but intended for self study.

*Prerequisites* Taken *and passed* the first programming course in Java, EDA011/016/017 or equivalent. It is recommended that you also have taken EDAA01 Programming – Second Course.

*Lecturer* Per Holm, office E2182, E building 2nd floor. Telephone 046–222 80 38, e-mail `Per.Holm@cs.lth.se`

*Secretary* Lena Ohlsson, office E2179, E building 2nd floor. Office hours 9.30–11.30 and 12.45–13.30. Telephone 046–222 80 40, e-mail `Lena.Ohlsson@cs.lth.se`

*Homepage* `http://cs.lth.se/EDA216/`
Please check the homepage regularly.

*Course Contents*

| | |
|---|---|
| lectures | 12 |
| computer labs (compulsory) | 4 |
| project (compulsory) | 1 |

*Course Literature* Garcia-Molina, Ullman, Widom: Database Systems: The Complete Book (International Edition), Prentice Hall, ISBN 0131354280 or 129202447X.

In addition to the textbook, there are additional handouts from the department (copies of overhead slides, instructions for the computer labs, exercises, instructions for the project). All material is on the course web (if you want the material on paper, it costs 50:–).

## Course Contents, Details

*Lectures* Mondays 10–12, E:B, and Thursdays 8–10, E:B.

*Lecture Schedule* Only the subject of each lecture is given. Detailed reading instructions for the lectures will be on the course homepage after each lecture.

| | |
|---|---|
| 19/1 | Introduction, SQL |
| 22/1 | More SQL |
| 26/1 | E/R modeling |
| 29/1 | From E/R to relations |
| 2/2 | SQL in programs, JDBC, transactions |
| 5/2 | Web technology, PHP, graph databases |
| 9/2 | Functional dependencies, normalization |
| 12/2 | More normalization, about the project |
| 16/2 | Stored procedures, triggers, NoSQL |
| 19/2 | Logical query languages, XML, relational algebra |
| 23/2 | Implementation of DBMS-s and query languages |
| 26/2 | About the exam |
| 2, 5, 9/3 | No lecture |

*Computer Labs* The computer labs are compulsory. There is one lab per week during calendar weeks 5–8 . Instructions and assignments are in the handout "Laboratory Exercises, Database Technology".

The labs are mostly homework. During the scheduled lab sessions you will show your working solutions to the teaching assistant. Alternative times for the lab sessions: Tuesdays 8–10 or 10–12, Wednesdays 10–12 or 15–17, Thursdays 13–15.

You must work in groups of two people. Signing up for the labs:

- Visit `sam.cs.lth.se/Labs` in a browser.
- Enroll at the same time as your lab partner. If you enroll on your own, the system will assign you a partner.
- Use your StiL id as user id. If the system doesn't accept your id, use the box at the bottom to have the system e-mail you (to your address in Ladok) your id.
- Contact `Per.Holm@cs.lth.se` if you have any questions, need to change your lab time, ...

Note:

- You need an MySQL account for the labs. You should pick up your group's account on Thursday, January 22, 10.00–10.30 or 12.00–12.30 in E2182 (Per Holm's office).

*Exercises* There are no scheduled exercise sessions. The exercise assignments are intended for self study.

*Project* The project is compulsory and is to be carried out in groups of two or three people. The project description is in the handout "Project Description, Database Technology".

The project report is due Monday, March 30.

## Examination

*Examination* The exam is written. No aids are allowed.

Regular exam: Monday, March 16, 14–19, MA10 A–E.

Alternate exams: Monday, May 4, 14–19, MA10 A–B, and Wednesday, August 19, 14–19, MA8 A.

*Final Grade* To obtain a final grade you must have passed the written examination, the labs and the project.