COURSE PRESENTATION FORM – ACADEMIC YEAR 2010/2011

COURSE NAME	**Database Management and Tuning**
COURSE CODE	72017 (MSc 270) / 70218 (BSc 509 and MSc 509)
LECTURER	Nikolaus Augsten
TEACHING ASSISTANT	--
TEACHING LANGUAGE	English
CREDIT POINTS	4
LECTURE HOURS	24
EXERCISE HOURS	12
TIME SPAN	21.02.2011 - 11.06.2011
TIME TABLE	See Timetable Page
OFFICE HOURS LECTURER	During the lecture time span: TBD, Faculty of CS, POS Building, piazza Domenicani 3, office 2.19
OFFICE HOURS TEACHING ASSISTANT	--
PREREQUISITES	Students should be familiar with basic algorithms and relational database systems (SQL, transaction processing, concurrency control, storage management, and indexing), as well as having Java programming skills. This material is taught in the following undergraduate courses: • Introduction to Programming • Introduction to Databases • Database Management Systems • Data Structures and Algorithms
OBJECTIVES	This course will give an in-depth understanding of the features that off-the-shelf database management systems offer, in particular with respect to system performance. This knowledge is used to tune the database system and its environment: dimension the hardware for the database system, write efficient queries, set effective indexes, communicate with the database efficiently, and diagnose performance problems.
SYLLABUS	• Introduction and overview • Query tuning • Index tuning • Tuning the operating system • Lock, concurrency control, and transaction chopping

- Hardware tuning
- Communicating with the outside
- Trouble shooting

TEACHING FORMAT

Frontal lectures and exercises in class

ASSESSMENT

The assessment is either based

- on the assignments and the final oral exam
  or
- on the final oral exam only.

The final oral exam follows the standard grading system, i.e., 30 is the highest grade and 18 is lowest passing grade.
The assignments can contribute with up to 6 grading points to the final grade.
The grading points from the assignments are valid for all three regular exam sessions.
There is no midterm.

READING LIST

- Database Tuning. Principles, Experiments, and Troubleshooting Techniques. Dennis Shasha, Philippe Bonnet. Morgan Kaufmann Publishers, 2003.

SOFTWARE USED

- Java
- PostgreSQL
- Oracle
- DB2

LEARNING OUTCOME

Students completing this course should be able to:

- understand the parameters that impact the performance of a database system;
- monitor performance relevant parameters;
- interpret performance parameters correctly and pinpoint bottlenecks;
- propose effective solutions to performance problems.

COURSE PAGE

http://www.inf.unibz.it/dis/teaching/DMT/