



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Complementi di Basi di Dati

2122-3-E3101Q115

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#### Aims

The course will be provided in Italian and it will allow students to have a wide and up-to-date overview of the main storage systems (relational, rdf, nosql) and architectures (including commercial ones) . Students will be also able to understand transaction and its properties. For rdf and NoSQL the underlining data models, query languages and architecture will be also explained

#### Contents

Relational dbms architecture, transaction and ACID properties, Main issue on security of centralized rdbms and description of architectures of most adopted commercial RDBMS. Non relational dbms: NoSQL and RDF; architectures and query languages

#### Detailed program

- 1 introduction and physical access structure
- 2 query optimization
- 3 concurrency control
- 4 security

5 architecture of commercial DBMS

6 reliability manager

7 NoSQL, models, query language and architectures

8 rdf model, query language and available architectures

## **Prerequisites**

Database

## **Teaching form**

lectures with slides, exercises and practical exercise on most important storage management system

## **Textbook and teaching resource**

**Textbooks** P. Atzeni, S. Ceri, P. Fraternali, S. Paraboschi, R. Torlone Basi di dati: architetture e linee di evoluzione McGraw-Hill Italia,

## **Semester**

second semester

## **Assessment method**

Two are the alternative way to assess students:

1) a written exam followed by a small project. The written part is composed by a set of query related to theoretical issues explained in the course and a set of exercise related to algorithm, protocols, model, and query languages explained in the course. The small project wants to verify the capability of a given student to execute typical database administrator activities or modelling and querying NoSQL database systems

2) a project related to one of the topic related to the course.

## **Office hours**

Thursday 10-11 building U14 room 2017

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