

# **COURSE: Data Management for Big Data Analysis**

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## **COURSE DESCRIPTION**

Models for big data management and analysis.

## **LEARNING OUTCOMES**

- ✓ Understand the main issues and approaches to data modeling and management.
- ✓ Able to identify the most suitable data management approach in a given .
- ✓ Able to deal with data modeling issues, both in the relational and in the NoSQL frameworks.
- ✓ Able to use, at least at an elementary level, both SQL and NoSQL systems to manage a given set of data

## **METHODOLOGY**

The module will be laboratory-centered. Specific data management problems will be proposed to students, organized in groups and suitably tutored, asking them to organize data and to access them programmatically.

## **ASSESSMENT**

Small project with oral examination

## **OUTLINE**

- Relational modeling of data and relational databases
  1. Managing our data with a relational DBMS
- The NoSQL approach to data management
  1. Types of NoSQL systems and their characteristics
  2. Managing our data with a NoSQL system
- Introduction to Geo and Spatial Database

## **TEXTBOOKS**

Elmasri R., Navathe S., *Fundamentals of Database System*, 7nd ed., Pearson.

Mysql Reference manual.

Mongodb manual

## **ADDITIONAL SUGGESTED READING**

Atzeni, Ceri, Fraternali, Paraboschi, Torlone *Basi di dati* - ed. McGraw-Hill 4nd edition.

Elmasri R., Navathe S., *Sistemi di basi di dati – Fondamenti e Complementi*, 7nd ed., Pearson.