



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Business Intelligence

2122-2-F9101Q023

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#### Aims

The course would provide both methodological and technical aspects needed to understand and realise BI solutions in real-life contexts, including the whole data lifecycle (KDD) and identifying criteria for the evaluation of the solution provided.

#### Contents

Introduction to BI and Big Data Analytics

BI Architectures

Knowledge Discovery in Databases – KDD

#### Detailed program

##### 1. Introduction to BI and Big Data Analytics

- a. Goal and rationale of BI systems
- b. The value of knowledge – digital economy and data driven decision making
- c. The Structure and subsequent evolution of BI and Big Data Analytics systems

##### 2. BI Architectures

- a. The Evolution of BI Architectures (towards Big Data)

- b. **Decision Models on the basis of business functions**
- c. **Definition, selection and metrics for computing directional indicators (KPI – CSF)**
- 3. Knowledge Discovery in Databases – KDD**
  - a. **Phases, methodologies and the value for business purposes (Data as value)**
  - b. **Models for data quality evaluation – structured data vs (unstructured) Big data**
  - c. **Models for data management and analytics – relational vs schema free (i.e., graph db)**
  - d. **Models and techniques for data analysis – how to use data for fact-based decision making**
  - e. **Visualisation models for decision making – selecting the proper model for each stakeholder – data story telling and indicators**

## **Prerequisites**

None

## **Teaching form**

The course will be provided by means of lessons, seminars, and laboratory sessions and homework.

## **Textbook and teaching resource**

Lectures with the support of slides, laboratory and real-life case studies. Scientific Papers and books indicated by the lecturer. The software used is either available as open-source

## **Semester**

I semester

## **Assessment method**

All exams will be performed online composed by:

- a written/oral examination, aimed at assessing the competencies of the student in terms of (i) concepts and methodologies acquired (ii) abilities in writing/reading code and (iii) abilities in summarising pros/cons of the techniques introduced
- a homework, aimed at evaluating the competencies of the student in terms of (i) teamwork, (ii) understanding the data and define a way to approach the problem, (iii) discussing the solution identified and realised to the final user

**Office hours**

By Appointment

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