

ICT: Business intelligence & CRM

Master of Science in Innovation Management – MAIN
Academic year 2021/22

1. General information on the course

Name of the course	ICT: Business intelligence & CRM
Degrees	Master (“Laurea Magistrale”) in Innovation Management – <i>MAIN</i>
Type	Mandatory
Cycle/Year/Semester	2021/22, 2nd Year; 2nd Semester
Class hours	36h
Language of the course	English
Department	Institute of Management (IoM)
Lecturer	Anna Monreale Office: Department of Computer, University of Pisa Largo Bruno Pontecorvo 3, Pisa (2nd floor) e-mail: anna.monreale@unipi.it
Assistants	
Time and place of lectures	
Office hours	By fixing an appointment by email

2. Content of the course, objectives and list of topics

2.1 Contents

The module shows technologies and systems for accessing, managing and analysing data for decision support. Technologies and analysis of problems are shown using examples and case studies. The student will acquire skills on the main technologies for data management and business intelligence, including data warehouse. The course first introduces the principles of Data Bases and then presents the principles of Decision Support Data Bases.

2.2 Objectives

DBMSs are used in most organizations to safely store and efficiently manipulate many kinds of information. This teaching module will present the main features of DBMSs. In particular, the student will acquire knowledge and skills on: the DBMS functionalities, the design of a database, the relational data model, the use of SQL to query a database. This module also presents methodologies and tools for accessing, managing and analysing big data for decision support. In particular, it presents the approach that involves the design and implementation of specific databases, the data warehouse, to produce synthetic data interactively.

2.3 List of topics

Principles of Data Bases

- Introduction to DBMS
- Conceptual Modeling of Data Bases
- Logical Design of Data Bases
- SQL Language
- Tool: Microsoft SQL Server

Principles of Decision Support Data Bases

- Decision Support Systems
- Data Warehouse: Conceptual Modeling
- Logical Modeling for Data Warehouse
- Case Studies for Data Warehouse
- Analytical SQL
- Tools: Microsoft SQL Server

3) Prerequisite

No specific prerequisites are required.

4) Teaching method

Lectures are of three types: i) traditional lectures, where the lecturer presents topics ii) tutorials, where students can verify, supported by lecturer, their understanding of topics through exercises iii) hands-on activities where students use tools for business intelligence and data management.

5) Evaluation method

Students need to produce a project composed of two parts: generation, population and querying of a data base, generation, and querying of a data warehouse for answering to some business questions. Students will get an evaluation for each part and the average of the two grades will produce the final grade.

Teaching Material:

- Slides
- Databases essentials - Antonio Albano
- A First Course in Database Systems, Jeffery D. Ullman and Jennifer Widom
- Decision Support Databases Essentials - Antonio Albano

Additional readings and materials will be proposed during the course.