COURSE DESCRIPTION – ACADEMIC YEAR 2021/2022

Course title	**Capstone Project**
Course code	73019
Scientific sector	ING-INF/05
Degree	Master in Computational Data Science (LM-18)
Semester	1
Year	2
Credits	6
Modular	No

Total lecturing hours	12
Total lab hours	--
Attendance	Attendance of project presentations at the beginning of the course is not compulsory.
Prerequisites	
Course page	https://ole.unibz.it/

Specific educational objectives	The course belongs to the type "affini o integrative – formazione affine" in the curricula "Data Analytics" and "Data Management". Data science cannot be taught only on a theoretical level. Students must apply and test their skills on real data, interacting with domain experts. To this end, the students carry out a project on real data taken from concrete application domains, such as bioinformatics, sensors, Internet of things, business information systems, tourism and agriculture. The goals is to acquire professional skills while applying the techniques studied throughout the Masters program. The project is carried out individually or in groups, autonomously under the joint supervision of a professor and one or more domain experts.

Lecturer	Matteo Ceccarello
Contact	mceccarello@unibz.it
Scientific sector of lecturer	INF/01
Teaching language	English
Office hours	Office hours are arranged by email
Lecturing Assistant (if any)	--
Contact LA	--
Office hours LA	--
List of topics	• Individual or group project based on real data from a specific application domain in areas such as bioinformatics, internet of things, business information systems, tourism, agriculture.
Teaching format	Individual or group project

Learning outcomes	Applying knowledge and understanding: • D2.1 - Practical application and evaluation of tools and techniques in the field of data science • D2.2 - Ability to address and solve a problem using scientific methods

	• D2.3 - Ability to analyse, explore and evaluate a data set in specific application domains Making judgments • D3.1 - Ability to plan and, if necessary, re-plan a technical project activity for the analysis and management of data, or for the implementation of corresponding software systems or applications, and to complete it within the defined deadlines • D3.2 - Ability to autonomously select the documentation (in the form of books, web, magazines, etc.) needed to keep up to date in a given sector • D3.3 - Ability to identify reasonable work goals and estimate the resources needed to achieve these goals. Communication skills • D4.1 - Ability to use English at an advanced level with particular reference to disciplinary terminology • D4.2 - Ability to present one's work in a clear and comprehensible way in front of an audience, including non-specialists • D4.3 - Ability to structure and draft scientific and technical documentation • D4.4 - Ability to coordinate the work of a project team and interact positively with team members • D4.5 - Ability to interact and collaborate in the implementation of a project or research with peers and experts Learning skills • D5.1 - Ability to autonomously extend the knowledge acquired during the course of study • D5.2 - Ability to autonomously keep oneself up to date with the developments of the most important areas of data science • D5.3 - Ability to deal with problems in a systematic and creative way and to appropriate problem solving techniques

Assessment	Project work, carried out either individually or in groups. The project must be complemented by a written report.
Assessment language	English
Assessment Typology	Monocratic
Evaluation criteria and criteria for awarding marks	The exam is pass/fail,m and is evaluated on the following criteria: • Creativity, skills in ciritical thinking, ability to apply known and new techniques to real-world problems • Clarity of presentation

Required readings	
Supplementary readings	
Software used	