Fakultät für Informatik
Facoltà di Scienze e Tecnologie informatiche
Faculty of Computer Science

COURSE DESCRIPTION – ACADEMIC YEAR 2018/2019

Course title	Statistics for Data Science
Course code	73004
Scientific sector	MAT/06
Degree	Master in Computational Data Science (LM-18)
Semester	1
Year	1
Credits	6
Modular	No

Total lecturing hours	40
Total lab hours	20
Attendance	Attendance is not compulsory. Non-attending students should contact the lecturer at the start of the course to agree on the modalities of the independent study.
Prerequisites	Basics of calculus
Course page	https://ole.unibz.it/

Specific educational objectives	The course belongs to the type "affini o integrative – formazione affine" in the curriculum "Data Analytics". The course gives a general overview of statistical methods.

Lecturer	Gianni Arioli
Contact	Office1.04, gianni.arioli@unibz.it
Scientific sector of lecturer	MAT/05
Teaching language	English
Office hours	Wednesday, 12:00-13:00. See also the official schedule.
Lecturing Assistant (if any)	Leonardo Ricci
Contact LA	Office1.04, leonardo.ricci@unibz.it
Office hours LA	Arrange beforehand by email.
List of topics	- Hypothesis testing and ANOVA - Test of independence - Correlation - Linear and Logistic regression with one and multiple variables - Time series - Probabilistic models (EM)
Teaching format	Frontal lectures and exercises with R

Learning outcomes	Knowledge and understanding: - D1.1 - Knowledge of the key concepts and technologies of data science disciplines - D1.8 - Knowledge of the mathematical-statistical principles required for data analysis 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

	• D2.7 - Practical application of mathematical-statistical tools and methods from the field of data science Making judgments • 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 Communication skills • D4.1 - Ability to use English at an advanced level with particular reference to disciplinary terminology Learning skills D5.3 - Ability to deal with problems in a systematic and creative way and to appropriate problem solving techniques.

Assessment	This course foresees a PASS/FAIL exam. The exam is written, with verification questions and written project report done in groups of 2/3 student.
Assessment language	English
Assessment Typology	Monocratic
Evaluation criteria and criteria for awarding marks	This course foresees a PASS/FAIL exam. To pass the exam, the student must write a report on the research project which shows his/her ability to work in a team, creativity, skills in critical thinking and ability to summarize in own words. Furthermore, he/she must answer correctly to at least 50% of the open questions of the written part. The exam is the same for attending and non-attending students.

Required readings	The main reference is: S. Ross, Introduction to probability and statistics for engineers and scientists, Elsevier 2009 Slides will be provided on OLE. Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it
Supplementary readings	--
Software used	R