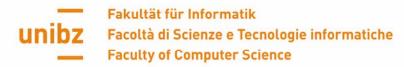


COURSE DESCRIPTION – ACADEMIC YEAR 2016/2017

Course title	Statistical Methods
Course code	72127
Scientific sector	MAT/06
Degree	Master in Computer Science (LM-18)
Semester	1
Year	1
Credits	4
Modular	No
Total lecturing hours	24
Total lab hours	
Total exercise hours	12
Attendance	Not compulsory
Prerequisites	Basic mathematical skills.
Course page	None. Students should refer to their notes taken during lectures and exercise classes, and consult the suggested textbook and readings.
Specific educational objectives	The course belongs to the type "affini o integrative – formazione affine".
	Specific educational objectives are theoretical and applied knowledge of descriptive and inferential statistics for applications in computer science.
Lecturer	Leonardo Ricci
Contact	Piazza Domenicani 3, Room 1.04, <u>Leonardo.Ricci@unibz.it</u> and <u>leonardo.ricci@unibz.it</u>
Scientific sector of lecturer	FIS/01
Teaching language	English
Office hours	During the lecture time span: Tuesday, 12.45-13:45
Lecturing Assistant (if any)	
Contact LA	
Office hours LA	
List of topics	 Discrete random variables and their distributions: probability; random variables; probability distributions; expected values. Statistical Inference: tests of significance and p-values; Bayes' theorem; a short account on decision-making. Correlation and regression.
	 Time series analysis: basic smoothing techniques (averaging methods, exponential smoothing techniques); short account on more advanced fitting techniques. Dynamic systems and Markov chains: Markov processes, states, transition probabilities and matrices; remarkable applications.
Teaching format	Frontal lectures and project work during the exercise hours.
Learning outcomes	Knowledge and understanding:

1/2



Supplementary readings

Software used

 Thoroughly understand the scientific method of investigation. Understand methods of mathematics and of statistics to support Information Technology and its applications. Applying knowledge and understanding: Be able to design and execute experimental analyses of information systems or their components. Making judgments Be able to work autonomously according to the own less knowledge Communication skills Be able to structure and write scientific documentation Learning skills Have developed learning capabilities to pursue further studies with a high degree of autonomy. Be able to learn the innovative features of state-of-the-technologies and information systems 	n vel of

Assessment	Written final exam only [100 % of mark]. The exam consists of 4-6 exercises.
Assessment language	English
Evaluation criteria and criteria for awarding marks	Correctness of answers / calculations.
Required readings	 D. Freedman, R. Pisani, R. Purves, "Statistics" (International student edition, 4th edition), W.W. Norton & Company, 2007; I. Miller, M. Miller, "John E. Freund's Mathematical Statistics with Applications" (7th Edition), Pearson; M. Baron, "Probability and Statistics for Computer Scientists" (1st edition), Chapman and Hall/CRC, 2006.