COURSE DESCRIPTION – ACADEMIC YEAR 2020/2021

Course title	**Decision Making and Support Systems**
Course code	73026
Scientific sector	INF/01
Degree	Master in Computational Data Science (LM-18)
Semester	1
Year	2
Credits	6
Modular	No

Total lecturing hours	40
Total lab hours	20
Attendance	Attendance is not compulsory. Non-attending students have to contact the lecturer at the start of the course to agree on the modalities of the independent study. The exam modalities for non-attending students are indicated below, in the fields "Assessment" and "Evaluation criteria and criteria for awarding marks".
Prerequisites	
Course page	https://ole.unibz.it/

Specific educational objectives	The course belongs to the type "caratterizzanti – discipline informatiche" in the curricula "Data Analytics" and "Data Management". The course gives a general overview of topics in decision theory. After this course the students will have acquired general and pluri-disciplinary knowledge about decision. The students will be more prepared when facing situations of decision making. They will also have a grasp on the technical aspects of decision making, and will be capable to apply them to provide decision support.

Lecturer	Nicolas Troquard
Contact	POS 3.02, nicolas.troquard@unibz.it
Scientific sector of lecturer	ING-INF/05
Teaching language	English
Office hours	Arrange beforehand by email.
Lecturing Assistant (if any)	--
Contact LA	--
Office hours LA	--
List of topics	• Modelling decisions • Modelling uncertainty • Modelling preferences • Modelling negotiations • Decision support tools • Psychology of decision making • Persuasion

Teaching format	Frontal lectures, practice and exercise classes.

Learning outcomes	Knowledge and understanding: • D1.5 - Knowledge of principles and models for the representation, management and processing of complex and heterogeneous data Applying knowledge and understanding: • D2.2 - Ability to address and solve a problem using scientific methods • D2.11 - Ability to develop intelligent software systems for decision support 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 • 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 Learning skills • D5.2 - Ability to autonomously keep oneself up to date with the developments of the most important areas of data science

Assessment	Written exam with verification questions. Exercise, lab work, or project possibly done in groups, and requiring individual reports and/or presentations. The assessment modalities for non-attending students is identical.
Assessment language	English
Assessment Typology	Monocratic
Evaluation criteria and criteria for awarding marks	Assessment 1: 40% of the final grade will be awarded for the project, exercise, and lab work. Assessment 2: 60% of the final grade will be awarded for the final exam. Admission is awarded when the final grade is 60% or above. Relevant for assessment 1: ability to summarize, evaluate, and establish relationships between topics; ability to work in a team; creativity; skills in critical thinking; correctness and clarity of answers. Relevant for assessment 2: correctness and clarity of answers. The assessment modalities for non-attending students is identical.

Required readings	There is no single textbook that covers the entire course. The course material is collected from various textbooks and research papers.

	• Daniel Kahneman - Thinking, Fast and Slow • Martin Peterson - An Introduction to Decision Theory • Yoav Shoham, Kevin Leyton-Brown - Multiagent Systems: Algorithmic, Game-Theoretic, and Logical Foundations • Max H. Bazerman, Don A. Moore - Judgment in Managerial Decision Making • Efraim Turban, Jay E. Aronson - Decision Support Systems and Intelligent Systems Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it
Supplementary readings	--
Software used	Various tools and programming languages may be used during the course.