



UNIVERSITÀ DI PAVIA

Anno Accademico 2019/2020

ARTIFICIAL INTELLIGENCE	
Enrollment year	2018/2019
Academic year	2019/2020
Regulations	DM270
Academic discipline	ING-INF/05 (DATA PROCESSING SYSTEMS)
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	COMPUTER ENGINEERING
Curriculum	Computer Science and Multimedia
Year of study	2°
Period	1st semester (30/09/2019 - 20/01/2020)
ECTS	6
Lesson hours	45 lesson hours
Language	English
Activity type	ORAL TEST
Teacher	PIASTRA MARCO (titolare) - 6 ECTS
Prerequisites	Basic mathematical skills, practical knowledge of at least one programming language.
Learning outcomes	The course follows a conceptual pathway along the fundamental principles of the discipline. It is divided into two parts: the first part is an introduction to classical formal logic, both propositional and first order, with a special focus to the aspects of automatic calculus, while the second part is an introduction to the basic principles of machine learning and self-organizing systems.
Course contents	Classical logic and automated symbolic reasoning Boolean algebras Logical language and semantical structures: logical consequence Deductive systems for propositional logic

	<p>Decision problems and decidability Predicates and relations: first order logic Semi-decidability of first order logic First-order resolution with unification</p> <p>Machine Learning</p> <p>Logic and probability: representation or statistics? The language of probability: representation Bayesian inference Graphical models and automation Probabilistic learning Clustering: K-means and related methods Self-organizing systems and applications</p>
Teaching methods	<p>Lectures (hours/year in lecture theatre): 45 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0</p>
Reccomended or required readings	<p>See the home page of the course for lecture slides, suggested readings and software for the exercises</p>
Assessment methods	<p>The final exam is an interview about the theory, together with the discussion of practical activities in the lab.</p>
Further information	<p>The final exam is an interview about the theory, together with the discussion of practical activities in the lab.</p>
Sustainable development goals - Agenda 2030	<p>\$lbl legenda sviluppo sostenibile</p>