

MODELLO D (inglese)	
General Information	
Academic subject	Computational Intelligence
Degree course	Computer Science (LM18)
Curriculum	Knowledge Engineering and Machine Intelligence
ECTS credits	6
Compulsory attendance	No
Language	English

Subject teacher	Name Surname	Mail address	SSD
	Giovanna Castellano	giovanna.castellano@uniba.it	INF01

ECTS credits details			
Lectures	4 credits	32 hours	
Exercises	1 credit	15 hours	
Student Project	1 credit		

Class schedule	
Period	1st semester
Year	2nd
Type of class	Lecture- workshops

Time management	
Hours	47
Hours of lectures	32
Tutorials and lab	15

Academic calendar	
Class begins	Sept. 23, 2019
Class ends	Jan. 10, 2020

Syllabus	
Prerequisites/requirements	None. Students having attended the Artificial Intelligence class in the first year of the level degree may have some advantage.
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS)	<p><i>Knowledge and understanding</i> The students will know the foundations, the main tasks and the main approaches to Computational Intelligence, with particular focus on Soft Computing.</p> <p><i>Applying knowledge and understanding</i> The students will be able to apply Computational Intelligence techniques to specific problems in different interdisciplinary areas, to properly set up the techniques for fruitful application, and to set up evaluation experiments.</p> <p><i>Making informed judgements and choices</i> The students will be able to compare different Computational Intelligence techniques, and to choose those that are appropriate to tackle specific problems. They will also be able to evaluate the experimental outcomes and to trace them to the features of the evaluated technique.</p> <p><i>Communicating knowledge and understanding</i> The students will be able to work in team, bringing to bear</p>

	<p>their knowledge of Computational Intelligence in order to carry out fruitful cooperation with other kinds of expertise from other members of the team.</p> <p><i>Capacities to continue learning</i></p> <p>The students will be provided with methodological foundations that will allow them to understand the latest developments of Computational Intelligence. The lectures will make use of recent scientific papers and authoritative websites that will enable the students to stay up-to-date with advances in Computational Intelligence.</p>
Contents	<ul style="list-style-type: none"> • Introduction to Computational Intelligence • Predictive modeling: classification and regression • Supervised and unsupervised learning • Neural Networks • Fuzzy Systems • Fuzzy clustering • Genetic Algorithms • Computational Intelligence hybrid systems
Course program	
Bibliography	J.M. Keller, D. Liu, D.B. Fogel, "Fundamentals of Computational Intelligence - Neural Networks, Fuzzy Systems, and Evolutionary Computation. IEEE Press, Wiley, 2016.
Notes	When necessary, the teacher will provide the students with supplementary material.
Teaching methods	Lectures, exercises in the classroom
Assessment methods (indicate at least the type written, oral, other)	Oral test, requiring previous submission (no later than a week before) of a case study.
Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement there are.	<ol style="list-style-type: none"> 1. Ability to identify the appropriate methods of Computational Intelligence to approach a problem 2. Ability to apply a suitable Computational Intelligence method to solve a problem in a specific applicative scenario.
Further information	