

# Manifesto degli Studi CdS Magistrale Informatica Applicata (Machine Learning e Big Data) - LM-18

a.a. 2024/2025

## CURRICULUM MACHINE LEARNING & BIG DATA

### FIRST YEAR

#### I SEMESTER

Scientific Computing	9 CFU-ETCS (AI)
Physics and Quantum Computing-PART I*	6 CFU-ETCS (AI)
Machine Learning (part I - Statistical machine learning and neural networks)**	6 CFU-ETCS (C)
Internet of Things and IoT Lab (part I - Sensor networks) ***	6 CFU-ETCS (C)

#### II SEMESTER

Physics and Quantum Computing- Part II *	3 CFU-ETCS (AI)
Internet of Things and IoT Lab (part II - Architecture and Systems) ***	6 CFU-ETCS (C)
Machine Learning (part II - Deep learning)**	6 CFU-ETCS (C)
Data Science Technology	6 CFU-ETCS (C)

\*, \*\*, \*\*\* joint exams

### SECOND YEAR

#### I SEMESTER

High Performance Computing	6 CFU-ETCS (AI)
Natural Language Processing	6 CFU-ETCS (C)
Multimodal Machine Learning	6 CFU-ETCS (C)
Elective	6 CFU-ETCS (C)

#### II SEMESTER

Intelligent Signal Processing	6 CFU-ETCS (C)
Cloud Computing	6 CFU-ETCS (C)
Elective	6 CFU-ETCS
Stage/Internship & Language Certifications	9 CFU-ETCS
Final exam (MSc Thesis)	21 CFU-ETCS

\*\*\* joint exam

## Electives

<b>Computer Graphics and Videogaming<sup>°</sup></b>	<b>6 CFU-ETCS - INF/01</b>
<b>Artificial Intelligence <sup>°°</sup></b>	<b>6 CFU-ETCS - INF/01</b>
<b>Computer Vision <sup>°</sup></b>	<b>6 CFU-ETCS - INF/01</b>
<b>Cognitive Robotics <sup>°°</sup></b>	<b>6 CFU-ETCS - INF/01</b>
<b>Big Geo-Data Management <sup>°</sup></b>	<b>6 CFU-ETCS – GEO/04</b>
<b>IOS Essentials (only for students of the Apple IOS Foundation Program)</b>	<b>6 CFU-ETCS - INF/01</b>

<sup>°</sup>First Semester;

<sup>°°</sup> Second Semester

<b>Stage/Internship/Individual Studies</b>	<b>6 CFU-ETCS</b>
<b>Language Certifications</b>	<b>3 CFU-ETCS</b>
<b>M. Sc. Thesis</b>	<b>21 CFU-ETCS</b>

## CURRICULUM INNOVATION

### FIRST YEAR

#### I SEMESTER

Scientific Computing	9 CFU-ETCS (AI)
Physics and Quantum Computing-PART I*	6 CFU-ETCS (AI)
Machine Learning (part I - Statistical machine learning and neural networks)**	6 CFU-ETCS (C)
Internet of Things and IoT Lab (part I - Sensor networks) ***	6 CFU-ETCS (C)

#### II SEMESTER

Physics and Quantum Computing-Part II *	3 CFU-ETCS (AI)
Internet of Things and IoT Lab (part II - Architecture and Systems) ***	6 CFU-ETCS (C)
Machine Learning (part II - Deep learning)**	6 CFU-ETCS (C)
Data Science Technology	6 CFU-ETCS (C)

\*, \*\*,\*\*\* joint exams

### SECOND YEAR

#### I SEMESTER

Tech Skill Lab Big Data	6 CFU-ETCS (C)
Tech Skill Lab Cloud Computing	6 CFU-ETCS (C)
Tech Skill Computing & Software Design	6 CFU-ETCS (AI)
Elective	6 CFU-ETCS (C)

#### II SEMESTER

Tech Skill Lab IoT	6 CFU-ETCS (C)
Tech Skill Lab Machine Learning	6 CFU-ETCS (C)
Elective	6 CFU-ETCS

Stage/Internship & Language Certifications 9 CFU-ETCS

Final exam (MSc Thesis) 21 CFU-ETCS

## Electives

<b>Computer Graphics and Videogaming°</b>	<b>6 CFU-ETCS - INF/01</b>
<b>Artificial Intelligence °°</b>	<b>6 CFU-ETCS - INF/01</b>
<b>Computer Vision °</b>	<b>6 CFU-ETCS - INF/01</b>
<b>Cognitive Robotics °°</b>	<b>6 CFU-ETCS - INF/01</b>
<b>Big Geo-Data Management °</b>	<b>6 CFU-ETCS – GEO/04</b>
<b>IOS Essentials (only for students of the Apple IOS Foundation Program)</b>	<b>6 CFU-ETCS - INF/01</b>

°First Semester;

°° Second Semester

<b>Stage/Internship/Individual Studies</b>	<b>6 CFU-ETCS</b>
<b>Language Certifications</b>	<b>3 CFU-ETCS</b>
<b>M. Sc. Thesis</b>	<b>21 CFU-ETCS</b>