EUROPASS SUPPLEMENT TO THE MASTER'S DEGREE IN VOCATIONAL EDUCATION AND TRAINING

TITLE OF THE TITLE

Master's Degree of Professional Training in Artificial Intelligence and Big Data

TITLE DESCRIPTION

The holder has acquired the general competence relating to:
Program and apply intelligent systems that optimize the management of information and the exploitation of massive data, guaranteeing access to data in a secure manner and complying with the criteria of accessibility, usability and quality required by the established standards, as well as ethical and legal principles.

Within this framework, each PROFESSIONAL MODULE includes the following LEARNING OUTCOMES acquired by the holder.

"Artificial Intelligence Models.
The titleholder:
– Characterizes Artificial Intelligence systems relating them to the improvement of the operational efficiency of organizations and companies.
– Uses Artificial Intelligence systems models implementing problem solving systems.
– Relates natural language processing to its applications by determining its potential and identifying its limitations.
– Analyzes robotic systems, evaluating design and implementation options.
– Applies expert systems by evaluating the influence of intelligent controllers on system behavior.
– Applies legal and ethical principles to the development of Artificial Intelligence integrating them as part of the process.

"Machine Learning Systems.
The titleholder:
– Characterizes strong and weak Artificial Intelligence determining uses and possibilities.
– Determines techniques and tools for Machine Learning systems, testing their applicability for problem solving.
– Applies supervised learning algorithms, optimizing the model output and minimizing the
– associated risks.
– Applies unsupervised learning techniques relating them to the types of problems they are trying to solve.
– Apply computational models of neural networks comparing them with other artificial intelligence methods.
– Evaluates the quality of the results obtained in practice with machine learning systems integrating fundamental principles of computation.

"Artificial Intelligence Programming."
The titleholder:
– Characterizes programming languages, assessing their suitability in the development of Artificial Intelligence.
– Develops artificial intelligence applications using modeling environments.
– Evaluates business improvements by integrating technological convergence.
– Evaluates industrial and business automation models relating them to the results expected by the companies.

"Big Data Systems.
The titleholder:

- Apply data analysis techniques that integrate, process and analyze information, adapting and implementing systems that use them.
- Configures dashboards in different computational environments using data analysis techniques.
- It manages and stores data, facilitating the search for answers in large data sets.
- Applies tools for data visualization used in Big Data solutions facilitating the tasks of analysis and presentation of results.

"Big Data applied.
The titleholder:

- Manages solutions to proposed problems, using storage systems and associated data center tools.
- Manages storage systems and the vast ecosystem around them facilitating the processing of large amounts of data without fail and quickly.
- Generates data integrity mechanisms, checking their maintenance in distributed file systems and assessing the overhead involved in data processing.
- Performs the monitoring follow-up of a system, ensuring the reliability and stability of the services provided.
- Validates Big Data techniques to transform a large amount of data into meaningful information, facilitating business decision making.

JOBS THAT CAN BE PERFORMED WITH THIS

The most relevant occupations and jobs are as follows:

- Artificial Intelligence and Big Data Developer.
- Expert systems programmer.
- Expert in Artificial Intelligence and Big Data.
- Data analyst.

ISSUANCE, ACCREDITATION AND DEGREE LEVEL

Body issuing the diploma on behalf of the King: Ministry of Education and Vocational Training or the autonomous communities within the scope of their own competences. The title has academic and professional effects with validity throughout the State.

Official duration of the degree: 330 hours.

Degree level (national or international).

- NATIONAL: Non-university higher education.
- INTERNATIONAL:
    - Level P-5.5.4 of the International Standard Classification of Education (ISCED P-5.5.4).
    - Level 5C of the European Qualifications Framework (EQF 5C).

Access requirements:
To access the Specialization Course in Artificial Intelligence and Big Data it is necessary to be in possession of one of the following degrees:

a) Higher Technician in Network Computer Systems Administration, established by the Royal Decree 1629/2009, of October 30, 2009, which establishes the degree of Higher Technician in Administration of Networked Computer Systems and sets its minimum teaching requirements.

b) Higher Technician in Multiplatform Applications Development, established by the Royal Decree 0/2010, of April 16, 2010, which establishes the title of Higher Technician in Development of Multiplatform Applications and its minimum teaching requirements are established.

c) Higher Technician in Web Applications Development, established by Royal Decree 686/2010, of May 20, which establishes the title of Higher Technician in Web Applications Development and sets the minimum education requirements.

d) Higher Technician in Telecommunication and Computer Systems, established by Royal Decree 883/2011, of June 24, which establishes the title of Higher Technician in Computer Systems. Telecommunications and Computer Science and its minimum education requirements are established.

e) Degree of Higher Technician in Industrial Mechatronics, established by Royal Decree 1576/2011, of November 4, which establishes the Degree of Higher Technician in Industrial Mechatronics and sets its minimum teaching requirements.

f) Degree of Higher Technician in Automation and Industrial Robotics, established by the Royal Decree 1581/2011, of November 4, which establishes the title of Higher Technician in Automation and Industrial Robotics and establishes the minimum teaching requirements.

Access to the next level of education or training: Access to any university study will be available.

Legal Basis. The applicable regulation is Royal Decree 279/2021, of April 20, which establishes the Specialization Course in Artificial Intelligence and Big Data and sets the basic aspects of the curriculum.

Explanatory note: This document is intended as additional information to the title in question, but has no legal validity whatsoever.

FORMATION OF THE OFFICIALLY RECOGNIZED MASTER'S DEGREE

PROFESSIONAL MODULES OF THE MASTER'S DEGREE ROYAL DECREE	ECTS CREDITS
Artificial Intelligence Models	4
Machine Learning Systems	5
Artificial Intelligence Programming	12
Big Data Systems	5
Big Data applied	8
	TOTAL CREDITS
	34
OFFICIAL DURATION OF THE MASTER'S DEGREE (HOURS)	*330*

* The minimum Master's degree courses shown in the table above, 55%, are official and valid in the entire national territory. The remaining 45% belongs to each Autonomous Region and may be reflected in the **Annex I** of this supplement.

INFORMATION ABOUT THE EDUCATION SYSTEM

Early Childhood Education	Elementary education	Highschool education		Higher education

Elementary education
Music and dance elementary education

Highschool education
Professional music and dance education
6 courses
Professional degree

Higher education
Higher artistic education

Degree in higher artistic education	Master's degree
Music	Master in Artistic E.E.
Dance	
Dramatic art	
Conservation and restoration of cultural property	
Plastic arts	
Design	

First cycle for 2 year old infants	Second cycle for 3-6 years old		Elementary 6-12 years	ESO 12-16 years old	Highschool
1º	1º		1º	1º	1º / 2º
2º	2º		2º	2º (Diagnostic evaluation of acquired competencies)	Arts
3º	3º		3º	3º	Science and technology
			4º (Diagnostic evaluation of acquired competences)	4º	Humanities and CCSS
			5º		General
			6º	ESO graduate degree	Highschool degree

First cycle / Second cycle / Third cycle

University education
University degree
Undergraduate studies
↓
Master's degree
Master's studies
↓
Doctor's degree
Doctoral studies

Basic technician degree	AP and D technician degree	AP and D superior technician degree
Basic Vocational Training Cycles.	Intermediate Level Training Cycles in Plastic Arts and Design	Higher level training courses in plastic arts and design
1º	Sports technician degree	Degree of superior sports technician
2º	Intermediate level sports education	Higher level sports education
	Technical degree	Higher technical degree
	Intermediate vocational training cycles of vocational training	Vocational training cycles of higher grade of VET
	Specialty title of the professional profile	Master's degree VET
	Specialization course of intermediate level of VET	Specialization course for higher vocational training

Language training					
Basic Level A1	Basic level A2	Intermediate level B1	Intermediate level B2	Advanced level C1	Advanced level C2

Adult education