

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

TITLE OF THE DECREE

Master's Degree in Collaborative Robotics Professional Training

TITLE DESCRIPTION

The holder has acquired the general competence related to:

Develop collaborative robotics projects, both robotic arms and autonomous mobile robots, as well as to carry out the assembly, commissioning and maintenance of such systems, respecting criteria of quality, safety, accessibility and respect for the environment.

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

"Collaborative Robotics.

The titleholder:

- Characterizes different types of robots, identifying the components that form them and determining their applications in automated production environments.
- Analyzes the structure of collaborative robotic arms, identifying their advantages and determining their applications in automated production environments.
- Characterizes peripherals in production environments, identifying their function and connection to the robot.
- Configures machine vision-based applications by identifying their applications and calibrating the cameras.
- Automate manual processes by integrating collaborative robots to improve key indicators.

"Configuration and programming".

The titleholder:

- ConfigureS the fundamental parameters of the system, identifying the control panel menus and creating basic motion programs.
- Develops programs, interacting with input and output signals and optimizing movements and cycle time.
- Applies advanced programming resources, extending the functionality of the program and interaction with other devices.
- Develops programs for specific applications based on specifications, sequencing the different phases of the action and structuring it by means of a flow chart.

"Autonomous Mobile Robots."

The titleholder:

- Characterizes autonomous mobile robots identifying the components that form it and determining its operation.
- Determine the general operation of the robotic system by identifying applications and processes and characterizing the appropriate working environment.
- Configures and develops applications based on autonomous mobile robots, taking into account their characteristics and the work context.
- Verifies the operation of autonomous mobile robots taking into account their application and system objectives.
- Repairs malfunctions in autonomous mobile robots by diagnosing malfunctions and preparing incident reports.

"Safety and maintenance".

The titleholder:

- Characterizes the safety of a robotic installation, taking into account the characteristics of the installation and the applicable regulations.
- Applies the safety functions of the robot taking into account its role in the system and the working environment.
- Evaluates the current regulations on machine safety by applying its principles to robots.
- Verifies the safe operation of robots and peripherals taking into account their working area and their interaction in the assembly.
- Maintains robotic production environments by diagnosing and troubleshooting malfunctions and developing incident reports.

JOBS THAT CAN BE PERFORMED WITH THIS TITLE

The most relevant occupations and jobs are as follows:

- Team leader for assembly supervision of collaborative robotics systems.
- Team leader for maintenance supervision of collaborative robotics systems.
- Collaborative robotics systems designer.
- Collaborative robotics systems commissioning technician.
- Collaborative robot programmer.

ISSUANCE, ACCREDITATION AND DEGREE LEVEL

Body that issues 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: 200 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 Collaborative Robotics it is necessary to hold one of the following degrees:

- a) Higher Technician in Electrotechnical and Automated Systems, established by Royal Decree 1127/2010, of September 10, 2010, which establishes the title of Higher Technician in Systems and Automation and establishes its minimum teaching requirements.
- b) Higher Technician in Telecommunication and Computer Systems, established by Royal Decree 883/2011, of June 24, which establishes the title of Higher Technician in Telecommunications and Computer Science and its minimum education requirements.
- c) Higher Technician in Industrial Mechatronics, established by Royal Decree 1576/2011, of November 4, which establishes the Title of Higher Technician in Industrial Mechatronics and sets its minimum teachings.
- d) Higher Technician in Electronic Maintenance, established by Royal Decree 1578/2011, of November 4, which establishes the Title of Higher Technician in Electronic Maintenance and establishes its minimum teaching standards.
- e) Higher Technician in Industrial Automation and Robotics, established by Royal Decree 1581/2011, of November 4, which establishes the Degree of Higher Technician in Industrial Automation and Robotics and establishes its minimum teaching requirements.

- f) Higher Technician in Clinical Electromedicine, established by Royal Decree 838/2015, of September 21, which establishes the title of Higher Technician in Clinical Electromedicine and sets the basic aspects of the curriculum.

Access to the next level of education or training: Access to any university study is possible.

Legal Basis. The regulation governing the degree is the Royal Decree 904/2022, of October 25, which establishes the Specialization Course of Higher Vocational Training in Collaborative Robotics 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
Collaborative Robotics	5
Configuration and programming	10
Autonomous Mobile Robots	5
Safety and maintenance	4
	TOTAL CREDITS
	24
OFFICIAL DURATION OF THE MASTER'S DEGREE (HOURS)	300

* 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

