

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

TITLE OF THE DEGREE

*Master's Degree in Remotely Piloted Aircraft – Drones (Master's Degree in **Professional Training** in Remotely Piloted Aircraft-Drones)*

TITLE DESCRIPTION

The holder has acquired the general competence related to:

To build and maintain remotely piloted aircraft-Drones or RPAS (Remotely Piloted Aircraft System) configuring them according to the design characteristics and adapting them to the sectors where they will provide services, under conditions of quality, safety and respect for the environment, in accordance with the technical documentation of the project and applying the regulations in force.

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

"Unmanned aerial systems".

The titleholder:

- Characterizes unmanned aerial systems relating them to operational needs according to their potential and limitations.
- Analyzes the design elements of unmanned aerial systems taking into account the tasks to be performed and the work environment.
- Evaluates design and implementation options by analyzing the characteristics of unmanned aerial systems.
- Analyzes aerodynamic concepts, interpreting equations and their applications in design.
- Apply the regulations in force to unmanned aerial systems according to their configuration and operation.

"Parts and components".

The titleholder:

- Characterizes unmanned aerial systems structures relating them to the improvement of operational efficiency according to the working environment.
- Analyzes engines of unmanned aerial systems, associating them with the functions to be performed and the environment of operation.
- Characterizes the propellers of unmanned aerial systems taking into account the functions to be performed and their practical application.
- Characterizes the batteries of unmanned aerial systems according to their application and estimated time of work.
- Identifies and describes auxiliary elements (parts and components) of unmanned aerial systems taking into account their configuration and current legislation.

"Electronics and systems".

The titleholder:

- Measures basic parameters of different types of electrical circuits, analyzing their operation and their application in circuits.
- Relates the applications of magnetism to its applications in unmanned aerial systems components.
- Assembles electronic circuits, describing their operation and selecting the appropriate components.
- Characterizes electronic components of the unmanned aerial system describing its operation.
- Analyzes the operation of communications systems, describing the principles of operation of the components that constitute it and its contribution to the whole.
- Define the operation of different sensors describing their characteristics and uses.

"Configuration and control".

The titleholder:

- Characterizes control systems of unmanned aerial systems relating them to system and operational efficiency.
- Uses control systems of unmanned aerial systems, applying protocols established in the technical documentation and regulations.
- Relates the automation of control systems with their applications, determining their potential and identifying their limitations.
- Identifies malfunctions and failures of control and automation systems, evaluating and selecting solutions or alternatives that optimize the design or implementation.

"Maintenance and testing".

The titleholder:

- Applies criteria of use and safety standards in the activities carried out in the workshop, analyzing the work to be performed, identifying the associated risks, the measures and equipment to prevent them.
- Performs operations with tools and test equipment used in the maintenance of unmanned aerial systems, identifying the operating characteristics of the tools and measuring equipment used.
- Performs disassembly, inspection, repair and reassembly operations, selecting procedures and working methods.
- Performs calibration and update operations of an unmanned aerial system, applying the established procedures.
- Performs maintenance tasks on unmanned aerial system systems and components, analyzing and selecting different types of plans.
- Performs tests of the systems and components of the unmanned aerial system, configuring and integrating elements according to established protocol.

"Professional applications".

The titleholder:

- Selects unmanned aerial systems, applying them to civil engineering.
- Selects unmanned aerial systems, applying them in event management.
- Selects unmanned aerial systems, applying them in emergencies.
- Selects unmanned aerial systems, applying them in research.
- Selects unmanned aerial systems, applying them in other sectors.

"Legislation and application procedures".

The titleholder:

- Characterizes the regulatory framework by interpreting the applicable regulations.
- Select the instructions that regulate the functioning of operations with unmanned aerial systems identifying the obligations regarding the type of operation.
- Defines the procedures to be followed by an unmanned aerial systems operator taking into account the types of scenarios.
- Defines the knowledge required of an unmanned aerial system pilot and applies it to the operation of the system.

JOBS THAT CAN BE PERFORMED WITH THIS TITLE

The most relevant occupations and jobs are as follows:

- Commercial sales and advice on drones.
- Drone builder.
- Drone Maintainer/Repairer.
- Drone systems integrator.
- Manufacturer of drone accessories.
- Drone pilot.

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: 250 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 Remotely Piloted Aircraft-Drones it is necessary to have one of the following qualifications:

- a) Higher Technician in Production Programming in Mechanical Manufacturing, established by Royal Decree 1687/2007, of December 14, 2007, which establishes the title of Higher Technician in Production Programming in Mechanical Manufacturing and sets its minimum teaching requirements.
- b) Higher Technician in Development of Thermal and Fluids Installations Projects, established by Royal Decree 219/2008, of February 15, which establishes the title of Higher Technician in Development of Thermal and Fluids Installations Projects and sets its minimum teaching requirements.
- c) Higher Technician in Maintenance of Thermal and Fluids Installations, established by Royal Decree 220/2008, of February 15, which establishes the title of Higher Technician in Maintenance of Thermal and Fluids Installations and sets its minimum teaching requirements.
- d) Higher Automotive Technician, established by Royal Decree 1796/2008, of November 3, 2008, by the which establishes the Degree of Higher Technician in Automotive Industry and sets the minimum education requirements.
- e) Higher Technician in Administration of Networked Computer Systems, established in the Royal Decree 1629/2009, of October 30, 2009, which establishes the degree of Higher Technician in Administration of Networked Computer Systems and establishes its minimum teaching requirements.
- f) Higher Technician in Mechanical Manufacturing Design, established by Royal Decree 1630/2009, of October 30, 2009, which establishes the title of Higher Technician in Mechanical Manufacturing Design and establishes the following set their minimum teaching requirements.
- g) Higher Technician in Electrotechnical and Automated Systems, established by the Royal Decree 1127/2010, of September 10, 2010, which establishes the degree of Higher Technician in Systems and Automation and establishes its minimum teaching requirements.
- h) Higher Technician in Power Plants, established by Royal Decree 258/2011, of February 28, which establishes the title of Senior Technician in Power Plants and sets its minimum teaching requirements.
- i) Higher Technician in Renewable Energies, established by Royal Decree 385/2011, of March 18, which establishes the title of Higher Technician in Renewable Energies and sets its minimum teaching requirements.
- j) Higher Technician in Telecommunications 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.
- k) Higher Technician in Industrial Mechatronics, established by Royal Decree 1576/2011, of November 4, 2011, which establishes the title of Higher Technician in Industrial Mechatronics and sets its minimum teachings.
- l) 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 sets its minimum teachings.
- m) Higher Technician in Automation and Industrial Robotics, established by Royal Decree 1581/2011, of November 4, which establishes the Degree of Higher Technician in Automation and Robotics. Industrial and establishes its minimum teaching requirements.
- n) Higher Technician in Illumination, Image Capture and Treatment, established by Royal Decree 1686/2011, of November 18, which establishes the title of Higher Technician in Lighting, Image Capture and Treatment and sets its minimum teaching requirements.
- o) Higher Technician in Organization of Machinery Maintenance of Ships and Vessels, established by Royal Decree 1075/2012, of July 13, establishing the title of Higher Technician in the Organization of Machinery Maintenance of Ships and Boats and its minimum teaching requirements.

- p) 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.
- q) Higher Technician in Aeromechanical maintenance of turbine-engine aircraft, established by Royal Decree 1445/2018, of December 14, establishing the title of Higher Technician in Aeromechanical maintenance of turbine-powered aircraft and sets out the basic aspects of the curriculum.
- r) Higher Technician in aeromechanical maintenance of piston-engine helicopters, established by Royal Decree 1446/2018, of December 14, establishing the title of Higher Technician in aeromechanical maintenance of piston-engine helicopters and setting the basic aspects of the curriculum.
- s) Higher Technician in aeromechanical maintenance of turbine-engine helicopters established by Royal Decree 1447/2018, of December 14, establishing the title of Higher Technician in aeromechanical maintenance of turbine-engine helicopters and setting the basic aspects of the curriculum.
- t) Higher Technician in Maintenance of Electronic and Avionic Systems in Aircraft, established by Royal Decree 1448/2018, of December 14, which establishes the title of Higher Technician in Maintenance of Electronic and Avionic Systems in Aircraft and sets the basic aspects of the curriculum.

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

Legal Basis. The regulation establishing the degree is Royal Decree 393/2022, of May 24, establishing the Higher Level Vocational Training Specialization Course in Remotely Piloted Aircraft-Drones and setting the basic aspects of the curriculum, and amending Royal Decree 1445/2018, of December 14, which establishes the title of Higher Technician in aeromechanical maintenance of turbine-powered aircraft and sets the basic aspects of the curriculum, and Royal Decree 1085/2020, of December 9, which establishes validations of professional modules of Vocational Training titles of the Spanish educational system and measures for their application, and amends Royal Decree 1147/2011, of July 29, which establishes the general organization of vocational training in the educational system.

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

FORMATION OF THE OFFICIALLY RECOGNIZED MASTER'S DEGREE

| PROFESSIONAL MODULES OF THE MASTER'S DEGREE ROYAL DECREE | ECTS CREDITS |
|---|---------------------|
| Unmanned aerial systems | 5 |
| "Parts and components | 3 |
| Electronics and systems | 5 |
| "Configuration and control | 5 |
| Maintenance and testing | 7 |
| Professional applications | 2 |
| Legislation and application procedures | 3 |
| | TOTAL CREDITS |
| | 30 |

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|--|------------|
| OFFICIAL DURATION OF THE MASTER'S DEGREE (HOURS) | 250 |
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* The minimum teaching of the master's degree reflected in the table above, 55%, are official and valid throughout the national territory. The remaining 45% belongs to each Autonomous Community and may be reflected in **Annex I** of this supplement.

INFORMATION ABOUT THE EDUCATION SYSTEM

