

EUROPASS SUPPLEMENT TO THE DIPLOMA

TITLE OF THE CERTIFICATE (original language: ES)

Técnico en montaje de estructuras e instalación de sistemas aeronáuticos

TRANSLATED TITLE OF THE CERTIFICATE (English)

*Diploma of Education in the Assembly of Structures
and the Installation of Aeronautical Systems*

PROFILE OF SKILLS AND COMPETENCES

The holder has acquired general skills relating to the assembly of metallic, composite and hybrid components to obtain aeronautical structures; the assembly of equipment and associated installations of aeronautical systems, as well as the application of treatments for the protection, sealing and painting of surfaces, carrying out verification and functional tests, all under conditions of quality, following technical, safety and environmental protection specifications, and complying with the corresponding aeronautical regulations.

Within this framework, each PROFESSIONAL MODULE includes the following LEARNING RESULTS that the holder acquires.

“Mecanizado básico” (Basic Machining).

The title holder:

- Draws sketches of parts, interpreting the specific symbolism and applying the corresponding conventions of representation.
- Traces parts for subsequent machining, relating the specifications of sketches and plans to the accuracy of the measuring equipment.
- Machines parts manually, relating the measurement techniques to the tolerance margins of measurements provided in sketches and drawings.
- Threads external and internal parts, carrying out the necessary calculations and operations.
- Makes connections between metal components by means of soft soldering, describing the techniques used in each case.

“Montaje estructural aeronáutico” (Assembly of Aeronautical Structures).

The title holder:

- Identifies the fixed and mobile parts that make up aircraft, relating them to the basic fundamentals of aerodynamics and flight.
- Relates the main systems and subsystems of the aircraft to their structure, location and function.
- Carries out operations to couple parts and to assemble structures in metal, composite and hybrid materials with semi-automatic machines, interpreting technical specifications.
- Carries out the cold-hardening of drill holes to achieve greater structural resistance, applying the required techniques and complying with aeronautical regulations.
- Assembles metallic components and composite materials by means of riveting, complying with established aeronautical and quality regulations.
- Joins together masses of the structure and aeronautical components, guaranteeing the electrical continuity of the aircraft, complying with the regulations and following the technical specifications.
- Assembles fixed and mobile parts applying the established tightening torques using the equipment determined in the assembly plans and complying with the applicable quality and regulatory criteria.
- Carries out operations with numerical control machines, prior to the assembly of structures, relating the different machines to the controls and processes established in the technical documentation.
- Applies occupational risk prevention and environmental protection standards in the operation of semi-automatic and numerical control machines, in accordance with the associated risks.

“Instalaciones eléctricas y electrónicas” (Electrical and Electronic Installations).

The title holder:

- Recognises the materials and components of the electrical and electronic circuits of aircraft, describing the function and fundamental characteristics of each one.
- Assembles basic electrical and electronic circuits on a panel or model applying the corresponding technique, and analysing the relationship between the fundamental magnitudes to the interpretation of electrical and electronic diagrams.
- Assembles and installs the wiring of the electrical and electronic circuits of aircraft, applying the required techniques and complying with aeronautical regulations.
- Assembles electrical and electronic control modules, applying the established techniques and complying with the

corresponding aerospace regulations.

- Verifies the installation of electrical and electronic circuits, applying the corresponding measurement and testing techniques and using the aircraft's specific plans and regulations.
- Applies the regulations for the prevention of occupational risks and for environmental protection, identifying risks associated with electrical and electronic system assembly processes, in order to prevent them.

“Preparación y sellado de superficies” (Preparation and Sealing of Surfaces).

The title holder:

- Recognises the types of sealants and relates the surfaces to be protected to the technical specifications of the products, describing each product's function and fundamental characteristics.
- Prepares mixtures of sealing products complying with the rules of proportionality, verifying the curing of the same according to technical specifications and complying with aeronautical regulations.
- Prepares the surface to be sealed taking into account its characteristics and following aeronautical regulations.
- Seals aircraft components and components according to technical specifications and in compliance with applicable aeronautical regulations.
- Verifies the final finish of the sealing of aeronautical surfaces, carrying out the stipulated checks and tests and complying with aeronautical regulations.
- Applies the regulations for the prevention of occupational risks and for environmental protection, identifying any associated risks and the measures and equipment to prevent them.

“Sistemas mecánicos y de fluidos” (Mechanical and Fluid Systems).

The title holder:

- Recognises the materials, components and mechanical and fluid equipment of aircraft, describing the function and fundamental characteristics of each one.
- Assembles basic mechanical and fluid circuits, applying the corresponding techniques and analysing the relationship of fundamental magnitudes to diagrams and drawings.
- Assembles and installs pipes and conduits for hydraulic and pneumatic fluids on bulkheads, panels or models applying the required techniques and complying with aeronautical regulations.
- Assembles and installs fuel, oxygen and pressurisation fluid systems, among others, applying the required techniques and complying with aeronautical regulations.
- Assembles and installs mechanical systems including doors, ramps, gates, among others, applying the required techniques and complying with aeronautical regulations.
- Verifies the installation of the installed mechanical, hydraulic and pneumatic components and performs functional tests on the aircraft, applying the corresponding measurement and verification techniques and complying with the aircraft's specific regulations.
- Applies the regulations for the prevention of occupational risks and for environmental protection, identifying risks associated with the assembly processes of mechanical and fluid systems, in order to prevent them.

“Protección y pintado de aeronaves” (Protection and Painting of Aircraft).

The title holder:

- Identifies the different types of pre-treatments and paints for the surfaces of components and aircraft, describing each one's function and fundamental characteristics.
- Cleans and strips the surface of aircraft components, preparing the work area, applying the established procedures and the aeronautical regulations in compliance with safety and environmental specifications.
- Masks the areas that are not going to be painted, selecting the materials to be used and following the procedures and technical specifications included in the aeronautical regulations.
- Applies protective treatments to aircraft surfaces, analysing the preparation and application processes and following the aeronautical regulations that govern them.
- Prepares the paint to obtain the stipulated characteristics (viscosity and homogeneity), interpreting the manufacturers' specifications and complying with aeronautical regulations.
- Paints aircraft components, applying the techniques specified by the manufacturer and complying with the corresponding aeronautical regulations.
- Identifies painting defects, relating the causes that produce them, and applies the techniques for their prevention or correction in accordance with the technical specifications and in compliance with aeronautical regulations.
- Applies the regulations for the prevention of occupational risks and for environmental protection, identifying risks associated with protection and painting processes for aircraft and their components.

“Sistemas de distribución de corriente, telecomunicaciones y aviónica” (Power Distribution Systems, Telecommunications and Avionics).

The title holder:

- Recognises the materials, components and equipment of aircraft telecommunications, avionics and electrical distribution systems, describing the function and fundamental characteristics of each one.
- Assembles and installs telecommunications, applying the required techniques and complying with aeronautical regulations.
- Assembles and installs avionics systems, among others, applying the required techniques and complying with aeronautical regulations.
- Assembles and installs electrical distribution systems, describing the function of the components involved, applying the required techniques and complying with aeronautical regulations.
- Performs verification and functional tests of telecommunications, avionics and electrical distribution systems, applying the required techniques, analysing the applicable documentation and complying with aeronautical

regulations.

- Applies the regulations for the prevention of occupational risks and for environmental protection, identifying risks associated with the assembly of flight control, landing gear and propulsion systems to prevent them.

“Sistemas de mandos de vuelo, trenes de aterrizaje y de propulsión” (Flight Control, Landing Gear and Propulsion Systems).

The title holder:

- Recognises the materials, components and equipment of aircraft flight control, landing gear and propulsion systems, describing the function and fundamental characteristics of each one.
- Assembles and installs landing and taxiing gear, applying the required techniques and complying with aeronautical regulations.
- Assembles and installs flight control systems, applying the required techniques and complying with aeronautical regulations.
- Assembles and connects the aircraft engine and propellers, describing the function of the components involved, applying the required techniques and complying with aeronautical regulations.
- It performs verification and functional tests of flight control systems, landing gear and propulsion systems applying the required techniques, analysing the applicable documentation and complying with aeronautical regulations.
- Applies the regulations for the prevention of occupational risks and for environmental protection, identifying risks associated with the assembly of flight control, landing gear and propulsion systems to prevent them.

“Formación y orientación laboral” (Training and Career Guidance).

The title holder:

- Selects employment opportunities, identifying the different possibilities of insertion and lifelong learning alternatives.
- Applies teamwork strategies, assessing their effectiveness and efficiency for the achievement of the organisation's objectives.
- Exercises the rights and complies with the obligations derived from labour relations, recognising them in the different employment contracts.
- Determines the protective action of the Social Security system in the face of the different contingencies covered, identifying the different types of benefits.
- Assesses the risks derived from his or her activity, analysing the working conditions and the risk factors that exist in their working environment.
- Participates in the preparation of a risk prevention plan in a small company, identifying the responsibilities of all the agents involved.
- Applies prevention and protection measures, analysing risk situations in the work environment of the holder of a Diploma of Education in the Assembly of Structures and the Installations of Aeronautical Systems.

“Empresa e iniciativa emprendedora” (Company and Entrepreneurial Initiative).

The title holder:

- Recognises skills associated with entrepreneurship, analysing requirements derived from jobs and business activities.
- Defines the opportunity to create a small company, assessing its impact on the environment and incorporating ethical values.
- Carries out activities for the incorporation and start-up of a company, selecting the legal form and identifying the associated legal obligations.
- Carries out basic administrative and financial management activities for an SME, identifying the main accounting and tax obligations and filling in documentation.

“Formación en centros de trabajo” (Workplace Training).

The title holder:

- Identifies the structure and organisation of the company, relating them to the production and marketing of the products and services it obtains.
- Applies ethical and labour habits in the development of his or her professional activity, in accordance with the characteristics of the job and the procedures established in the company.
- Assembles components and/or assembly groups of the aircraft structure, following the technical specifications, aeronautical regulations and the corresponding safety protocols.
- Assembles and installs electrical and electronic systems, following the technical specifications, aeronautical regulations and the corresponding safety protocols.
- Assembles flight control, landing gear and aircraft propulsion systems, following the company's established quality system processes, safety protocols and aeronautical regulations.
- Assembles avionics, electrical distribution and telecommunications systems of aircraft, following technical specifications and complying with quality formalities, safety protocols and aeronautical regulations.
- Assembles and installs the fluid and mechanical systems of aircraft, following the company's established quality system processes, safety protocols and aeronautical regulations.
- Protects and paints components and aircraft in accordance with technical specifications, complying with safety protocols, quality standards and aeronautical regulations.

RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE

The Holder of a Diploma of Education in the Assembly of Structures and the Installation of Aeronautical Systems works in companies dedicated to the assembly, maintenance, sealing, painting and installation of systems and equipment for passenger, transport and military aircrafts, gliders, light aircraft and rotary wing aircraft.

The following are the most relevant occupations and jobs:

- Assembler of hydraulic and pneumatic systems for aircraft.
- Assembler of aircraft engines and mechanical systems.
- Assembler of electrical and electronic systems for aircraft.
- Assembler of aircraft components and structures.
- Operator of verification and functional tests on systems mounted on aircraft.
- Sealer of aircraft components and structures.
- Operator of aircraft surface protection and painting.

OFFICIAL BASIS OF THE CERTIFICATE

Name and status of the body awarding the certificate: The Ministerio de Educación (the Ministry of Education) or the Autonomous Communities in the area of their own administrative responsibility. The degree has academic and professional effects that are valid throughout the entire State.

Official duration of the Diploma: 2,000 hours.

Level of the certificate (national or international):

- NATIONAL: Post-compulsory secondary education.
- INTERNATIONAL:
 - Level 3 of the International Standard Classification of Education (ISCED 3).
 - Level ---- of the European Qualifications Framework (EQF----).

Entry requirements: A Graduate Degree in Secondary Education, or a Certificate of having passed the corresponding entrance test.

Access to the next level of education or training: Will be able to access Higher Level Training Cycles, subject to passing an entrance test.

Legal basis. Rules and regulations on which the Diploma is based:

- Minimum teaching requirements established by the State: Royal Decree 74/2018, of 19 February, which establishes the Diploma of Education in the Assembly of Structures and the Installations of Aeronautical Systems and which lays down the corresponding minimum education requirements.

Explanatory note: This document is intended as supplementary information to the Diploma in question, but on its own it does not have any legal validity. It may be accompanied by an Annex I which the corresponding Autonomous Community shall fill in.

INFORMATION ABOUT THE EDUCATION SYSTEM

