

# EUROPASS DIPLOMA SUPPLEMENT

## TITLE OF THE DIPLOMA (ES)

*Técnico Superior en Ortoprésis y Productos de Apoyo*

## TRANSLATED TITLE OF THE DIPLOMA (EN)<sup>(1)</sup>

*Higher Technician in Ortho-prostheses and Supporting Products*

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(1) This translation has no legal status.

## DIPLOMA DESCRIPTION

**The holder of this diploma will have acquired the General Competence with regard to:**

Designing, developing and adapting orthoses, prostheses and orthopaedic prostheses, and supporting products in accordance with the provisions of the regulation for these products in the current regulations, pursuant to the corresponding official prescription and to the physical and psychosocial assessment of the user, monitoring and maintaining and organizing and managing the orthopaedic establishment.

**Within this framework, the PROFESSIONAL MODULES and their respective LEARNING OUTCOMES acquired by the holder are listed below:**

### “Industrial technology applied to the orthopaedic activity”

The holder:

- Carries out mechanical tests and measuring procedures, relating the instruments to the physical properties of the materials.
- Selects the materials used to make and to adapt the orthoprothetic products, relating their properties to the behaviour in the manufacturing process and the use of the material the patient is going to do.
- Handles tools, machines and equipment aimed at making and adapting orthoprothetic products, identifying their characteristics and applications.
- Selects mechanical and electrical-electronic systems used in orthopaedic prostheses and orthoses, describing components and devices.
- Applies machining techniques when making orthoprothetic products, interpreting the protocol for the work established.
- Applies a quality managing system to the manufacture, reconditioning, packaging and storage of medical orthoprothetic products, according to their materials, to their specific features and taking into account the specific regulation for medical products.

### “Anatomical design”

The holder:

- Interprets the prescription, relating it to the requested product and the current legal legislation.
- Graphically describes objects of recognizable volumetrics, distinguishing the basic elements of the setting up of their form and representing them by means of lines and planes.
- Designs orthoprothetic products by applying techniques of computer assisted drawing (CAD).
- Applies anthropometric techniques, relating them to the anatomical, biomechanical, normal and pathologic features.
- Takes anatomical models, relating the materials to their handling applications and procedures.
- Obtains the positive physical model describing the stages of the process and applying the elaboration techniques.
- Manufactures paper patterns, applying design techniques.

### “Adaptation of prefabricated orthoses”

The holder:

- Selects the prefabricated orthotic product, relating it to the medial prescription and checking the documentation, in compliance to the labelling and to the information of the product.
- Adapts prefabricated orthoses of backbone, relating the product to the anthropometric and functional features of the user.
- Adapts prefabricated orthoses of upper extremity, relating the product to the anthropometric and functional features of the user.
- Adapts prefabricated orthoses of lower extremity, relating the product to the anthropometric and functional features of the user.
- Adapts prefabricated podiatric orthoses, relating the product to the anthropometric and functional features of the user.

### “Elaboration and adaptation of custom-made orthotic products”

The holder:

- Selects the orthotic product to be developed, interpreting the medical prescription.

- Makes custom made orthotic products, according to a quality system pursuant to standard operating procedures, taking into account the risks of contaminants and residues to workers and patients.
- Adapts electrical and/or electronic mechanisms to the orthotics, analysing and applying the manufacturing procedures.
- Carries out the test for the manufactured orthotic products, analysing and applying control procedures.
- Finishes the orthoses, analysing the incidents detected during the test/check.
- Details the information the user has to provide on the features of the orthoses and on the periodic revisions required, according to the established monitoring programme.

#### **“Elaboration and adaptation of external prostheses”**

The holder:

- Selects the external prostheses, relating them to the medical prescription.
- Makes custom made external prostheses, according to a quality system and according to standard work procedures, taking into account the risks of contaminants and residues to workers and patients.
- Assembles mechanical parts and electro-electronic mechanisms, applying basic assembly procedures and prosthetic manufacture.
- Makes the final finishing to the prosthesis, applying test and adaptation procedures.
- Checks the functionality of the prosthesis, applying programmes of review and periodic maintenance.

#### **“Adaptation of supporting products”**

The holder:

- Selects the type of support product, relating it to the prescription and the functional needs of the user and checking the conformity documentation, the labelling and the information of the product.
- Makes the products needed to adapt support products, justifying the selected equipment and tools.
- Adapts supporting products for personal medical treatment, relating the user needs to the product features.
- Adapts supporting products for the training/learning of abilities, relating the user needs to the features of the product.
- Adapts supporting products for personal care and protection, relating the user needs to the features of the product.
- Adapts supporting products for personal mobility, relating the user needs to the features of the product.
- Adapts supporting products for house hold activities, relating the user needs to the features of the product.
- Adapts the furniture and the housing or other properties, relating the user needs to the features of the supporting product.
- Adapts supporting products for communication and information, relating the user’s needs to the features of the product.
- Adapts supporting products to handle objects and devices, relating the user’s needs to the features of the product.

#### **“Applied biomechanics and pathology”**

The holder:

- Identifies osteoarticular, muscular and neurological structures, identifying their morphology and defining their anatomic and physiologic features.
- Analyses the biomechanics of anatomical segments, identifying clinical parameters by using specific instruments.
- Identifies the orthopaedic pathology, relating it to the ortoprothetic treatments.
- Identifies the radical surgical pathology of the locomotor system, identifying amputations and dislocations and relating them to ortoprothetic treatments.

#### **“Psychosocial care”**

The holder:

- Psychologically supports the user, detecting attitudes and emotional states derived from his/her pathology.
- Guides the user through the process of adaptation to the prosthesis, identifying sociocultural influences.
- Applies communication techniques throughout the process, using different kinds of language.
- Addresses complaints made by users identifying and applying criteria and procedures of action.
- Identifies the sphere of the intervention, giving details of his/her functions within the rehabilitation programmes.

#### **“Physiological Anatomy and basic pathologies”**

The holder:

- Identifies the hierarchical structure and the general organization of the organisms, describing its structural units and relations, depending on the specialization.
- Locates anatomic structures, differentiating conventional systems of body topography.
- Identifies the general aspects of the pathology, describing the elements of the dynamic process of getting sick and its relation with the clinic.
- Identifies the systems related to movement, perception and the relationship describing the structure, the functioning and the diseases of the nervous system, the senses and the musculoskeletal system.
- Identifies the systems related to oxygenation and distribution, describing the structure, the functioning and the diseases of the cardiovascular system, the respiratory system and the blood.
- Identifies the systems related to the metabolism, describing the structure, the functioning and the illnesses of the digestive system and the renal system.
- Identifies the systems involved in the internal regulation of the body and its relation with the exterior, describing the structure, function and diseases of the endocrine system, the reproductive system and the immune system.

### **“Project on orthopaedic prostheses and supporting products”**

The holder:

- Identifies the needs of the production sector, relating them with the standard projects that may satisfy them.
- Designs projects related to the competences described in the diploma, including and developing their constituting stages.
- Plans the project implementation, determining the intervention plan and associated documentation.
- Defines the procedures for the monitoring and control of the project implementation, justifying the selection of variables and instruments used.
- Defines the legal procedures to be manufacturer of custom-made, medical products, the product placing of the products and the authorization and adaptation, according to the current health legislation.

### **“Professional Training and Guidance”**

The holder:

- Selects job opportunities, identifying the different possibilities of labour integration, and the alternatives of lifelong learning.
- Applies teamwork strategies, assessing their effectiveness and efficiency on the achievement of the company's goals.
- Exercises rights and complies with the duties derived from labour relationships, recognising them in the different job contracts.
- Determines the protective action of the Spanish Health Service in view of the different covered eventualities, identifying the different types of assistance.
- Assesses risks derived from his/her activity, analysing job conditions and risk factors present in his/her labour setting.
- Participates in the development of a risk prevention plan in a small enterprise, identifying the responsibilities of all agents involved.
- Applies protection and prevention measures, analysing risk situations in the labour setting of the Higher Technician in Ortho-prostheses and Supporting Products.

### **“Business and Entrepreneurial Initiative”**

The holder:

- Recognises skills related to entrepreneurial initiative, analysing the requirements derived from job positions and business activities.
- Defines the opportunity of creating a small enterprise, assessing the impact on the performance setting and incorporating ethic values.
- Carries out the activities for the setting-up and implementation of a company, choosing the legal structure and identifying the associated legal obligations.
- Carries out basic administrative and financial management activities of an SME, identifying the main accounting and tax obligations and filling in documentation.

### **“On the Job Training”**

The holder:

- Identifies the structure and the organization of the company, relating both to the type of service provided.
- Applies labour and ethic habits in the development of his/her professional activity, according to the features of the job and to the procedures established by the company.
- Manages the orthopaedic facilities, carrying out operations referred to the sanitary and administrative documentation.
- Makes parts, identifying materials, selecting tools and equipment and handling machines.
- Identifies correction or functional substitution mechanism, relating them to the results of the user's functional assessment.
- Designs orthopaedic product, applying computer-aided techniques and obtaining moulds of the anatomical areas.
- Serially adapts orthoses, adjusting them to the prescription and to the anatomic and psychosocial features of the user
- Makes orthotics and prosthetics, applying the protocols established by the factory.
- Adapts and, where appropriate, makes supporting products, handling the appropriate tools and equipment and relating the user's need to the features of the product.

## **RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA**

The Higher Technician in Ortho-prostheses and Supporting Products works in the social and health sector, sub-sector of the technical orthotics, as technician or technical officer responsible of the facilities with manufacturing service or customized adaptation of the orthoprotheses and supporting products He/she works as well in the industrial sector as manufacturing technician, under the supervision of the technical manager, in companies of serial manufacture of medical devices, both orthoprothetic and supporting products. He/she works as well as technician in serial manufacturing companies of supporting products, which are not considered as medical products, as part of multidisciplinary teams in investigation, development and innovation institutions, or as non-health personnel in public and private health centres and institutions. He/she works also in social-sanitary centres and institutions. Moreover he/she can work as manufacturer

for orthoprothetic products, as an independent worker or as a company, by having previously obtained the corresponding license.

The most relevant occupations or jobs are the following:

- Higher technician in orthoprosthetic
- Orthopaedic technician
- Technician in supporting products
- Technician in accessibility and adaptation of the environment
- Technician responsible for adaptation facilities and/or orthoprothetic product distribution.
- Technician in mass production of supporting and orthoprothetic products.
- Technician responsible for the customized manufacture of orthoprothetic and supporting products.
- Technical responsible for the orthopaedic workshop in the hospital.
- Visitor/health promoter.
- Advisor for products and services of the sector.

### **AWARD, ACCREDITATION AND LEVEL OF THE DIPLOMA**

**Name of the body awarding the diploma on behalf of the King of Spain:** Spanish Ministry of Education or the different Autonomous Communities according to their areas of competence. The title has academic and professional validity throughout Spain.

**Official duration of the education/ training leading to the diploma:** 2000 hours.

**Level of the diploma (national or international)**

- NATIONAL: Non-University Higher Education
- INTERNATIONAL:
  - Level 5 of the International Standard Classification of Education (ISCED5).
  - Level 5 of the European Qualifications Framework (EQF5).

**Entry requirements:** Holding the Certificate in Post-Compulsory Secondary Education (Bachillerato) or holding the corresponding access test.

**Access to next level of education/training:** This diploma provides access to university studies.

**Legal basis:** Basic regulation according to which the diploma is established:

- Minimum teaching requirements established by the State: Royal Decree 905/2013, of 22 November 2013, according to which the diploma of Higher Technician in Ortho-protheses and Supporting Products and its corresponding minimum teaching requirements are established.

**Explanatory note:** This document is designed to provide additional information about the specified diploma and does not have any legal status in itself.

**COURSE STRUCTURE OF THE OFFICIALLY RECOGNISED DIPLOMA**

<b>PROFESSIONAL MODULES IN THE DIPLOMA ROYAL DECREE</b>	<b>CREDITS ECTS</b>
<b>Industrial technology applied to the orthopaedic activity</b>	10
<b>Anatomical design</b>	10
<b>Adaptation of prefabricated orthoses</b>	6
<b>Elaboration and adaptation of custom-made orthotic products.</b>	12
<b>Elaboration and adaptation of external prostheses</b>	12
<b>Adaptation of support products</b>	10
<b>Applied biomechanics and pathology</b>	12
<b>Psychosocial care</b>	6
<b>Physiological Anatomy and basic pathologies</b>	6
<b>Project on orthoprotheses and supporting products</b>	5
<b>Vocational Training and Guidance</b>	5
<b>Business and Entrepreneurial Initiative</b>	4
<b>On the Job Training</b>	22
	TOTAL CREDITS
	<b>120</b>
<b>OFFICIAL DURATION (HOURS)</b>	<b>2000</b>

\* The minimum teaching requirements shown in the table above comprise 55% official credit points valid throughout Spain. The remaining 45% corresponds to each Autonomous Community and can be described in the **Annex I** of this supplement.

# INFORMATION ON THE EDUCATION SYSTEM

