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EUROPASS CERTIFICATE SUPPLEMENT

TITLE OF THE DIPLOMA (ES)

Técnico en Operaciones Subacuáticas e Hiperbáricas

TRANSLATED TITLE OF THE DIPLOMA (EN) (1)

Technician in Underwater and Hyperbaric Operations

(1) This translation has no legal status.

DIPLOMA DESCRIPTION

The holder of this diploma will have acquired the General Competence with regard to:
Performing underwater and hyperbaric works, breathing air and nitrox up to the maximum pressure and depth allowed by the existing safety regulations and maintaining equipment, tools and/or auxiliary material in proper conditions for their use, with the required capacity and efficiency, applying the immersion techniques associated to this qualification and governing vessels in coastal and near-shore waters, complying with the environmental regulations and the security rules.

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

"Hyperbaric intervention with air and nitrox"
The holder:
- Characterizes the immersion techniques and equipment, relating them with their application and describing their functions and limitations according to the implementing legislation and to the physics applied to immersion.
- Plans the immersion, describing its phases and defining its security parameters.
- Handles free-diving immersion equipment, describing the techniques to use and applying them in the aquatic environment.
- Assembles equipment of independent diving of open system with air and nitrox, applying the established techniques and describing the elements making it up.
- Handles equipment of independent diving of pen system with air and nitrox and describing the techniques to use and applying the security legislation.
- Assembles equipment of semi-independent diving with surface supply with air and nitrox, applying the established techniques and describing the elements making it up.
- Handles equipment of semi-independent diving with surface supply with air and nitrox, describing the techniques to be used and applying them in the aquatic environment, according to the security legislation.

"Hyperbaric facilities and equipment"
The holder:
- Carries out the maintenance of the independent diving equipment of open system of air and nitrox, describing the most common failures and breakdowns and applying repair techniques.
- Maintains the systems associated to the semi-automatic diving equipment with surface supply with air and nitrox, describing the most common failures and breakdowns and applying repair techniques.
- Controls supply/provision systems, describing their features and executing the operation planned.
- Carries out the preventive maintenance of the hyperbaric plant, its elements and accessories, identifying the operating parameters and performing the maintenance and loading operations.
- Handles air charging station and nitrox mixtures, identifying the different elements and parts making it up and executing the operations of maintenance and load.
- Handles the hyperbaric chamber, identifying its features and control parts and executing the pressurizations and decompression associated to the treatments.

"Reparations and bailouts"
The holder:
- Prepares underwater repair equipment of boat hull, identifying them according to the techniques to be used and the operation to be carried out, checking its functioning.
- Handles underwater inspection equipment for immerse structures, describing the techniques to apply and applying them in the different cases.
- Carries out underwater operations, relating the systems and equipment to the procedures to be used and applying the suitable techniques.
- Carries out operation relating the systems and equipments to the procedures to be employed and applying the corresponding techniques.

- Carries out the maintenance of the equipment and tools used for underwater reparations and bailouts, identifying their parts and describing the operations to be executed.
- Complies with the rules on labour risk prevention and environmental protection, identifying the associated risks, the measures and the equipment to prevent them.

"Cutting and welding"

The holder:

- Applies cutting techniques in normobaric environments, selecting the techniques (manual, mechanical, oxycutting, oxyarc and steel arch) according to the materials to be cut and handling specific equipment.
- Applies cutting techniques in underwater environments, selecting the techniques (manual, mechanical, oxycutting, oxyarc and steel arch) according to the materials to be cut and handling specific equipment.
- Applies welding techniques on the surface (normobaric environment), describing the equipment and applying associated techniques.
- Applies welding techniques in underwater environments, identifying the peculiarities of the intervention and handling specific equipment.
- Complies with the rules on labour risk prevention and environmental protection, identifying the associated risks and the measures and equipment to prevent them.

"Construction and hydraulic works"

The holder:

- Makes the necessary arrangements to carry out construction and hydraulic works, interpreting their technical planning and arranging the necessary equipment and tools to carry them out.
- Handles technical and graphic inspection equipment, identifying its applications and registering the required information.
- Carries out building interventions and hydraulic work in hyperbaric environment, describing the procedures to follow in order to achieve the identified quality goals and handling equipment, tools and materials in a safe and effective way.
- Carries out the operations of assembly, cable landing for outfalls and underwater construction, describing the procedures to follow in order to achieve the identified quality goals and handling equipment, tools and materials in a safe and effective way.
- Applies techniques to execute maintenance operations of underwater or underground structures and installations, describing the procedures to follow to reach the objectives stated and handling equipment, tools and materials in a safe and efficient way
- Characterises those underwater blasting procedures associated to underwater building and hydraulic work operations, describing the techniques to follow and identifying the equipment, tools and materials used and the measures on security and environmental protection to apply.
- Complies with the rules on labour risk prevention and environmental protection, identifying the associated risks and the measures and equipment to prevent them.

"Pathophysiology of diving and emergencies"

The holder:

- Identifies the effects of the immersion and of the alterations on the organism, interpreting its functioning in the hyperbaric environment and the risks associated.
- Practices basic life support (BLS) measures and first aid to victims of accidents or incidents in underwater and hyperbaric environments, interpreting the signs and the symptoms of the person affected and applying them according to the protocols for action.
- Applies measures of survival in the sea, determining the most convenient and arranging the means according to the emergency plans.
- Uses the necessary means in order to prevent and to extinguish fires on board, assessing risk situations and safely applying the procedures established in emergency plans
- Applies first-aid techniques, assessing the sign and symptoms and using the means available on board and the protocols for radio-medical consultation.
- Complies with the rules on labour risk prevention and environmental protection on board, identification risk situations and defining the prevention means to be applied according to the regulations.

"Diving from wet bell"

The holder:

- Characterises the immersion technique from diving wet bell, relating it to its applications and analyzing its function and limitations according to the implementing legislation.
- Handles the diving wet bell gases switchboard, according to the action protocols and the safety regulations, controlling the functioning parameters and assessing the consequences of the intervention.
- Carries out immersions from diving wet bell, complying with the established procedures and techniques.
- Applies protocols of action in case of emergency during the immersion from diving wet bell.
- Handles the system for the lower and the raise of the diving wet bell.

"Navigation"

The holder:

- Characterises the documents associated to the activity of the ship, interpreting its effects and guarantees and describing its management according to the rules in force.
- Plans the provision of supplies, defining the needs and preventing contamination risks.
- Draws up the course, updating charts and nautical publications and using hand and electronic instrumentation.
- Controls the course of the ship, obtaining its position by observing the coast and by means of electronic systems and carrying out alterations on the course and speed in order to maintain it.
- Estimates the impact represented by the weather condition for the safety of the navigation, interpreting forecast reports and assessing the evolution of the variables observed.
- Uses the radar, optimizing the equipment's adjustment and interpreting the information conveyed in order to prevent dangerous situations.
- Sends and receives security communications and routine traffic operating with the equipment of the GMDSS and using the procedures established by the regulations.

"Manoeuvre and propulsion"

The holder:

- Identifies the machinery and equipment used for loading and unloading operations and for the vessel's manoeuvres, identifying its technical features and relating its functioning to the conductions of the process and to the security.
- Plans loading, unloading and stirrup assessing the influence of the initial stability and interpreting the vessel's technical documentation.
- Safely manoeuvres the vessel in the harbour and in the sea, applying techniques adapted to its evolving characteristics, the limitations of the zone and the prevailing oceanographic conditions.
- Performs manoeuvring in order to prevent boarding or dangerous situations in respect of other vessels, interpreting the international regulations and using the available propulsion and administration means.
- Performs search manoeuvring and persons from the shipwreck, assessing the vessel's features and the weather conditions and complying with the specific regulations and also with those governing security.
- Carries out preventive maintenance operations in the engine and controls the consumptions, interpreting the technical documentation and applying the established techniques.
- Carries out the control of the propulsion engine and of the auxiliary systems, detecting faults and carrying out preventive maintenance operations, basic reparation and replacement of different elements.
- Controls the hydro-pneumatic installations of the vessel, verifying their functioning and making sure that the parameters maintain the established values.

"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 Technician in Underwater Hyperbaric Operations.

"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 company's structure and organization, relating both to the kind of services provided.
- Applies ethical and labour habits in the development of his/her professional activity, according to the features of the job and to the procedures established by the company.
- Applies immersion techniques up to the maximum pressure and depth allowed by the existing safety regulations, using air and nitrox, in companies devoted to building and hydraulic work, collaborating in the duties established in the planning and pursuant to the quality, security and environmental protection established by the company.
- Applies immersion techniques up to the maximum pressure and depth allowed by the existing safety regulations, using air and nitrox, in companies devoted to the maintenance of afloat structures and refloats, collaborating in the duties established in the planning and pursuant to the quality, security and environmental protection protocols established by the company.
- Carries out the duties related to the preparation, manoeuvre, navigation and maintenance of the vessel, effectively following the skipper's directions and complying with the established rules.

RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA

The technician in Underwater and Hyperbaric Operations executes underwater and hyperbaric works, breathing air and nitrox up to the maximum pressure and depth allowed by the security rules in force and maintains in operating conditions the equipment, tools and/or auxiliary material with the required quality and efficiency, applying the immersion techniques associated to this qualification and skippering ships in inland and offshore waters, complying with the environmental regulations and with the safety standards.

The most relevant occupations or jobs are the following:

- Aquaculture tasks.
- Underwater blasting tasks.
- Works on the high seas, such as support to professional divers of great depth to saturation
- Underwater archaeology works.
- Biological sampling and investigation.
- Non-destructive testing.
- Underwater filming and photography works.
- Exceptional collaborative works with State security forces.
- Exceptional collaborative works with emergency forces, such as Maritime Rescue, The Military Emergencies Unit (UME in Spanish), Civil Protection and fire-fighters.
- Operator specialist in hyperbaric installations and plants.
- Operator specialist in hyperbaric chambers.
- Professional diver specialised in afloat repairs and refloating .
- Professional diver specialised in underwater welding and cut.
- Assistant operator for hyperbaric works up to the to the maximum pressure and depth allowed by the existing safety regulations , using air and nitrox in underground environments under confinement, in dry habitats or with fluids other than water, to drill boreholes with tunnel boring machines or other drilling equipment.
- Professional diver specialised in building and hydraulic work.
- Professional diver specialised in diving from wet bell.
- Operator specialist in the maintenance of hyperbaric equipment in authorised companies.
- Skipper devoted to maritime transport of goods or passengers, services of pilotage, security, maritime recue, diving and investigation, amongst other activities, with the attributions established for the by article 10 of the Royal Decree 973/2009, of 12 June, governing the professional qualifications of the Merchant Shipping.
- Sailor specialised in decks.
- Sailor specialised in machines.

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: Post-Compulsory Secondary Education
- INTERNATIONAL:
  - Level 3 of the International Standard Classification of Education (ISCED 3).
  - Level 4A of the European Qualifications Framework (EQF4).

Entry requirements: Holding the Certificate in Compulsory Secondary Education or holding the corresponding access test.

Access to next level of education/training: This diploma may provide access to Higher Technical Cycles provided that an entrance exam is passed.

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

- Minimum teaching requirements established by the State: Royal Decree 1073/2012, of 13 July according to which the diploma of Technician in Underwater Hyperbaric Operations 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. An Annex I may be added and will be filled in by the corresponding Autonomous Community

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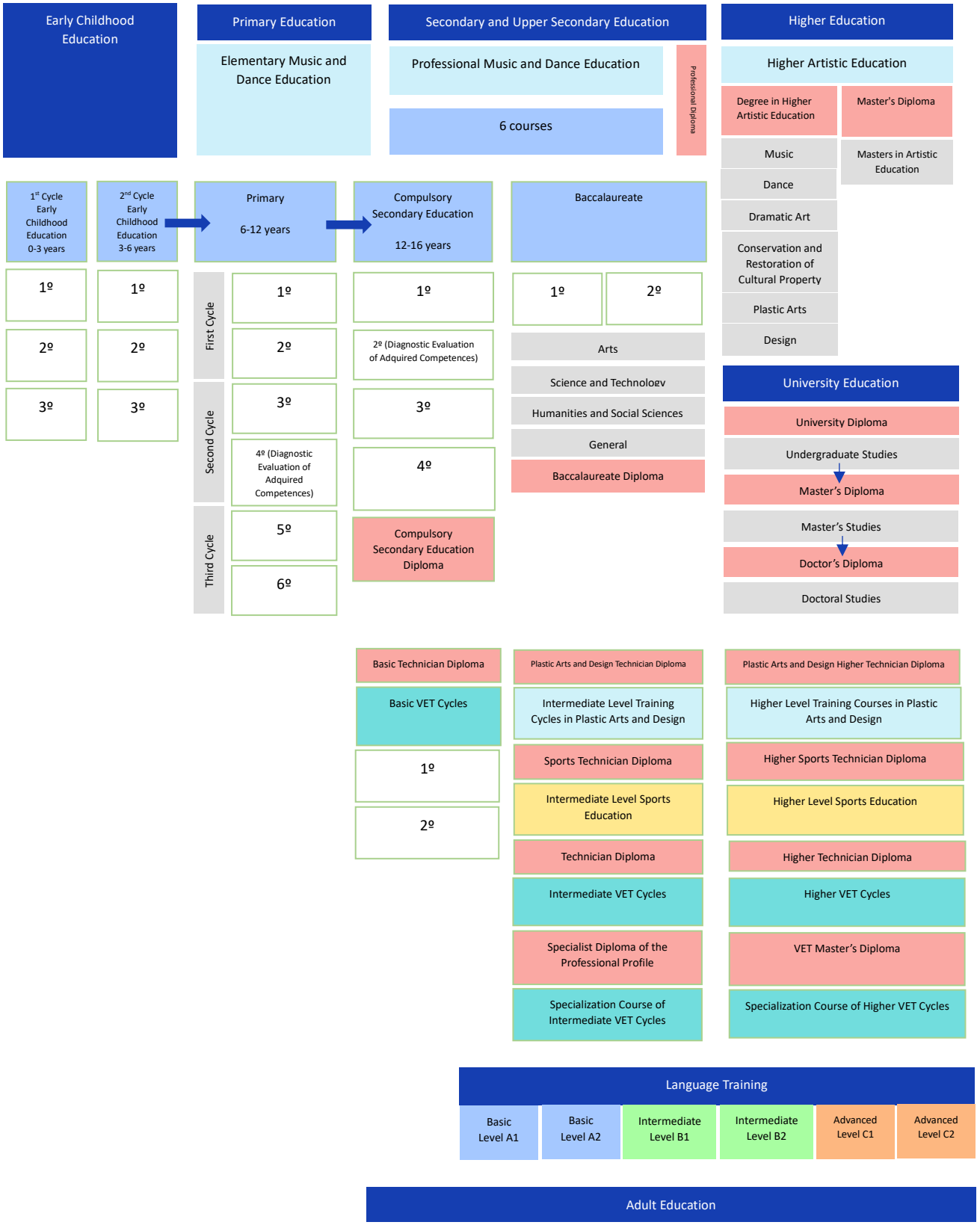
INFORMATION ABOUT THE EDUCATION SYSTEM