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EUROPASS DIPLOMA SUPPLEMENT

TITLE OF THE DIPLOMA (ES)

Técnico Superior en Laboratorio de análisis y de control de calidad

TRANSLATED TITLE OF THE DIPLOMA (EN) (1)

Higher Technician in Analysis and Quality Control Laboratory

(1) This translation has no legal status.

DIPLOMA DESCRIPTION

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

Organising and coordinating laboratory activities and the sampling plan, making any type of tests and analyses on materials and products in process or finished, focused on research and quality control, interpreting the results obtained, and acting under good laboratory practice rules.

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

"Sampling and Sample Preparation"

The holder:

– Organises the sampling plan, justifying the procedures and resources of each one of its sequential stages.
– Takes samples, applying different techniques according to their nature and state.
– Prepares equipment for sample treatment and auxiliary facilities of laboratories, applying technical competence rules.
– Prepares samples relating the technique with the analysis or test to be carried out.

"Chemical Analyses"

The holder:

– Classifies materials and reagents for chemical analyses recognising their properties and chemical behaviour.
– Prepares solutions justifying mass calculations and concentrations.
– Applies quantitative analysis techniques, justifying the type of reactions that take place and their applications in the analysis.
– Analyses organic functions, describing the type of reaction taking place.
– Assesses results obtained from the analysis, determining their coherence and validity.

"Instrumental Analyses"

The holder:

– Selects instrumental techniques relating them with the parameters and range to be measured.
– Prepares instrumental equipment, materials, samples and reagents relating them with the parameters to be measured.
– Analyses samples applying analytical instrumental techniques.
– Interprets results, comparing the obtained values with the applicable regulations and other established criteria.

"Physical Tests"

The holder:

– Prepares the conditions of the analysis relating the nature of the sample with the type of test.
– Prepares equipment, interpreting their constructive elements and how they work.
– Analyses samples applying the techniques of physical testing.
– Analyses results, comparing them with the established standards.

"Physicochemical Tests"

The holder:

– Prepares the conditions of the analysis relating the nature of the sample with the type of test.
– Prepares equipment for physicochemical tests relating them with the parameters to be measured.
– Analyses samples applying physicochemical tests.
– Assesses results, comparing them with the established standards.

"Microbiological Tests"

The holder:

– Prepares samples and culture means relating them with microbiological analysis techniques.
– Prepares equipment identifying their components and how they work.
– Carries out microbiological tests applying the appropriate analytical techniques.
– Assesses results, comparing them with the established standards.

"Biotechnological Tests"

The holder:

– Extracts proteins and nucleic acids, relating the chosen technique with the sample matrix.
– Clones nucleic acids, applying the procedures of molecular biology.
– Identifies microorganisms and proteins applying immunological and genetic tests.
– Identifies toxic and mutagenic agents applying toxicity testing and mutagenesis.

"Quality and Safety in Laboratories"

The holder:

– Applies quality management systems in laboratories recognising the different quality standards.
– Manages results from analyses applying statistical tools.
– Applies technical competence standards in analysis and test laboratories relating them with the results reliability.
– Applies safety measures analysing risk factors in laboratories.
– Applies environmental management systems, analysing risk factors and environmental impact.

"Project in Analysis and Quality Control Laboratory"

The holder:

– Identifies the needs of the productive 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.

"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 Analysis and Quality Control Laboratory.

"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 it to the production and marketing of the products obtained.
– Applies labour and ethic habits in his/her professional activity according to the characteristics of the job position and the procedures established by the company.
– Organises the work procedure to be followed, interpreting specific documentation.

– Prepares equipment and auxiliary services, in accordance with the established procedures, applying the rules on labour risk prevention and environmental protection.
– Carries out analyses and texts in accordance with laboratory specifications, applying the rules on labour risk prevention and environmental protection.
– Analyses results, comparing them with the established standards.

RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA

The Higher Technician in Analysis and Quality Control Laboratory works in companies or laboratories within different sectors in which carrying out physical, physicochemical, chemical and instrumental analyses on materials and products used for quality control and research are necessary, as well as sectors in which microbiological and biotechnological tests within environmental or food areas, among others, are needed.

The most relevant occupations or jobs are the following:

- Laboratory analyst within public and private companies
- Chemical laboratory analyst
- Microbiological laboratory analyst
- Materials laboratory analyst
- Food and agriculture industries laboratory analyst
- Processing industry laboratory analyst
- Analyst of training, research and development centres
- Microbiological analyst in food, environmental and biotechnological companies
- Microbiological analyst of drinking and waste water
- Analyst of microbiological control within the pharmaceutical industry
- Raw materials and finished products analyst
- Industrial chemistry laboratory technician
- Quality control technician in different manufacturing companies
- Technician in mechanically manufactured products test
- Construction materials testing technician

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 1395/2007, of 29 October, according to which the diploma of Higher Technician in Analysis and Quality Control Laboratory 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

PROFESSIONAL MODULES IN THE DIPLOMA ROYAL DECREE	CREDITS ECTS
Sampling and Sample Preparation.	13
Chemical Analyses.	15
Instrumental Analyses.	13
Physical Tests.	9
Physicochemical Tests.	9
Microbiological Tests.	10
Biotechnological Tests.	9
Quality and Safety in Laboratories.	6
Project in Analysis and Quality Control Laboratory.	5
Vocational Training and Guidance.	5
Business and Entrepreneurial Initiative.	4
On the Job Training.	22
	TOTAL CREDITS
	120
OFFICIAL DURATION (HOURS)	***2000***

* 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.

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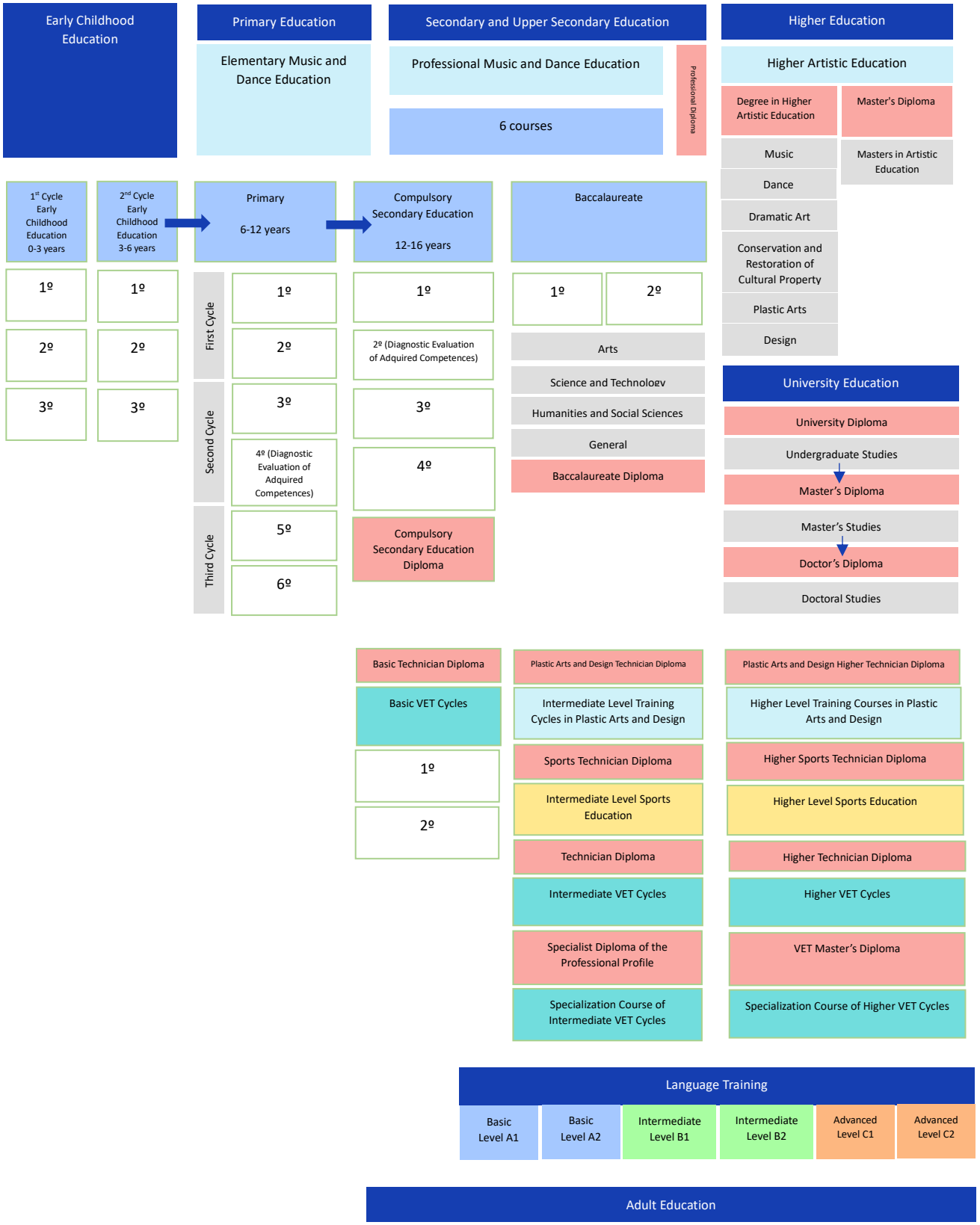
INFORMATION ABOUT THE EDUCATION SYSTEM



Early Childhood Education

- 1st Cycle Early Childhood Education 0-3 years
  - 1º
  - 2º
  - 3º
- 2nd Cycle Early Childhood Education 3-6 years
  - 1º
  - 2º
  - 3º

Primary Education

Elementary Music and Dance Education

Secondary and Upper Secondary Education

Professional Music and Dance Education

6 courses

Professional Diploma

Higher Education

Higher Artistic Education

- Degree in Higher Artistic Education
  - Music
  - Dance
  - Dramatic Art
  - Conservation and Restoration of Cultural Property
  - Plastic Arts
  - Design
- Master's Diploma
  - Masters in Artistic Education

Primary

6-12 years

- First Cycle
  - 1º
  - 2º
- Second Cycle
  - 3º
  - 4º (Diagnostic Evaluation of Adquired Competences)
- Third Cycle
  - 5º
  - 6º

Compulsory Secondary Education

12-16 years

- 1º
- 2º (Diagnostic Evaluation of Adquired Competences)
- 3º
- 4º

Compulsory Secondary Education Diploma

Baccalaureate

- 1º
- 2º

Arts

Science and Technology

Humanities and Social Sciences

General

Baccalaureate Diploma

University Education

University Diploma

Undergraduate Studies

Master's Diploma

Master's Studies

Doctor's Diploma

Doctoral Studies

Basic Technician Diploma

Basic VET Cycles

- 1º
- 2º

Plastic Arts and Design Technician Diploma

Intermediate Level Training Cycles in Plastic Arts and Design

Sports Technician Diploma

Intermediate Level Sports Education

Technician Diploma

Intermediate VET Cycles

Specialist Diploma of the Professional Profile

Specialization Course of Intermediate VET Cycles

Plastic Arts and Design Higher Technician Diploma

Higher Level Training Courses in Plastic Arts and Design

Higher Sports Technician Diploma

Higher Level Sports Education

Higher Technician Diploma

Higher VET Cycles

VET Master's Diploma

Specialization Course of Higher VET Cycles

Language Training

- Basic Level A1
- Basic Level A2
- Intermediate Level B1
- Intermediate Level B2
- Advanced Level C1
- Advanced Level C2

Adult Education