

EUROPASS DIPLOMA SUPPLEMENT

TITLE OF THE DIPLOMA (ES)

Técnico Superior en Proyectos de Obra Civil

TRANSLATED TITLE OF THE DIPLOMA (EN)⁽¹⁾

Higher Technician in Civil Works Projects

(1) This translation has no legal status

DIPLOMA DESCRIPTION

The holder of this diploma will have acquired the general competence with regard to:

Preparing the technical documentation for civil works and land use planning projects, carrying out surveys and construction work setting out processes and managing the documentation control for its execution, complying with the current legislation and the established quality, safety and environmental conditions.

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

“Construction Structures”

The holder:

- Makes calculations for the pre-dimension of construction elements solving problems of statics and applying composition, decomposition and equilibrium of forces and their moments.
- Prepares internal forces diagrams, analysing structural elements of construction and determining the effects produced by the action of loads.
- Proposes construction solutions for construction structures, relating their typology to the properties of the materials used and building process.
- Measures elements and simple structural systems made of reinforced concrete, steel, wood or mortar, applying regulations and using calculation procedures.
- Recognises the methods and the operating processes for land survey, relating them to the determination of soil properties, its classification with regard to foundation and the geotechnical information drawn from the study.
- Characterises earth movement operations, analysing the associated execution processes and relating them to the machinery used.
- Proposes construction solutions for foundations and containment elements, relating their characteristics to the execution processes and works.

“Construction Representations”

The holder:

- Represents construction elements, drawing floor plans, elevations and cross sections using drawing tools on drawing boards.
- Makes construction representations, making freehand drawings of plans and construction details.
- Drafts graphical documentation of construction projects, drawing plans through computer assisted design programs.
- Presents construction projects, showing views and perspectives through the use of computer applications and phototypesetting techniques.
- Makes scale models for the study of construction projects, applying basic techniques of model building.
- Manages graphical documentation of construction projects, reproducing, organising and filing plans either in paper or electronic format.

“Construction Measurements and Assessments”

The holder:

- Prepares lists of construction work units, analysing construction projects and organising the information obtained in chapters.
- Prepares tables of prices for construction work units, selecting resources and yield.
- Measures construction units, applying criteria, calculating quantities and showing results in normalised documents.
- Prepares construction work budgets, relating the measurements of work units to their price.

- Carries out cost controls, preparing comparative studies of offers, certificates and technical documentation.
- Takes measurements, draws up budgets and establishes cost control processes using specific computer tools.

“Construction Work Setting Out”

The holder:

- Collects information in order to make sketches and setting out plans, selecting the relevant data obtained from the analysis of project documentation, from the land survey and from the work site location.
- Makes sketches and setting out plans, selecting setting out methods and noting down relevant data.
- Schedules setting out tasks, establishing the work sequence and specifying the necessary resources.
- Completes technical information for the setting out, incorporating the calculation results of coordinates, distances, angles, height, inclinations and other complementary parameters to sketches, plans and planning.
- Lays out construction work points and elements, materialising their location on the field and/or work site.

“Construction Scheduling”

The holder:

- Identifies project activities and construction works execution, relating them to the stages of the process and to the scheduling procedures.
- Prepares the sequence of project activities and construction works execution, establishing times and resources for the project execution.
- Prepares programmes for design, procurement and control of the construction works, establishing goals and identifying formalities and the agents involved.
- Monitors execution plans of construction works, applying scheduling techniques and proposing corrections for detected deviations.
- Manages the quality of the project documents, analysing documentation systems and applying control techniques.
- Prepares plans for labour risks prevention in construction, relating specific the risks to the stages of the construction process and establishing measures for prevention and protection.

“Urbanism and Civil Works”

The holder:

- Defines road path proposals, establishing their geometrical characteristics and taking into account the topographical and environmental constraints.
- Recognises the determinations established in urban plans, identifying the criteria and the prescriptions of the general approach developed.
- Prepares proposals on urbanisation projects, defining the road system and planning the public space, considering the determinations expressed in the urban plan developed.
- Proposes construction solutions for road surfaces, engineering structures and drainage for road projects, identifying materials, defining construction work elements and describing the execution conditions.
- Characterises civil work projects, collecting applicable regulations and relating their typology to design criteria, constraints and construction processes.
- Sets graphical and written documentation to develop urban and civil work projects, establishing their relationship, content and characteristics.

“Installations and Services for Civil Works”

The holder:

- Configures water supply installations, measuring their elements and applying current regulations.
- Configures rain and waste water sanitation installations, measuring their elements, representing profiles and applying current regulations.
- Configures electricity networks representing schemes, measuring their elements and applying current regulations.
- Configures street lighting installations, representing schemes, measuring their elements and applying current regulations.
- Configures gas supply networks, measuring their elements and applying current regulations.
- Configures telecommunications networks, measuring their elements and applying current regulations.
- Represents special installations and services (urban waste, urban heating, domestic hot water and liquefied petroleum gas distribution installations, amongst others), using the appropriate symbols and applying current regulations.

"Topographical Surveys"

The holder:

- Obtains information for the implementation of surveying tasks, analysing technical documents, the scope of activity and the significant elements, and selecting the required data.

- Organises the tasks to be performed before the data gathering process, preparing sketches, selecting the most suitable surveying method and carrying out the planning process of these tasks.
- Gathers data from lands and constructions, using topographical tools and instruments and signalling precise points.
- Obtains parameters in order to represent land and constructions, processing the on-site data recorded and calculating coordinates, height, distances, angles, and inclinations.
- Represents lands and constructions, drawing topographical and architectural plans by using specific computer applications.

“Development of Urban Projects”

The holder:

- Organises the development of urban planning projects, analysing documentation and regulations and planning activities.
- Develops urban planning projects, applying the specifications from the general approach and distributing uses, plots, allocations, public spaces and roads, amongst others.
- Draws plans for urban planning projects, using specific and computer-aided design applications.
- Organises the development of urbanisation projects, analysing urban and technical documentation and planning activities.
- Develops urban projects, specifying solutions and establishing the characteristics of the elements and services.
- Prepares graphical documentation for urban projects, using specific and computer-aided design applications.
- Manages the documentation of urban and urbanisation planning projects, reproducing, filing and preparing graphical and written documentation for its distribution.

“Development of Linear Projects”

The holder:

- Organises the development of linear projects, planning activities and collecting the necessary information.
- Prepares path proposals or alternatives, using specific computer applications and justifying the solution adopted.
- Writes documents of linear projects, preparing reports, supplements, measurements, budgets, tender specifications and other required studies.
- Drafts graphical documentation of linear projects, drawing plans through specific path computer applications.
- Manages the documentation of linear projects, reproducing, filing and preparing reports, plans, tender specifications and estimates and other required studies to be distributed.

"Project on Civil Works"

The holder:

- Identifies the needs of the production sector, relating them to 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 implementation of the project, determining the intervention plan and the attached documentation
- Defines the procedures for monitoring and controlling the implementation of the project, justifying the selection of variables and the tools 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 the risks derived from his/her activity, analysing the job conditions and the risk factors present in his/her labour setting.
- Participates in the development of a risk prevention plan for a small enterprise, identifying the responsibilities of all the agents involved.
- Applies protection and prevention measures, analysing the risk situations in the labour setting of the Higher Technician in Civil Works Projects.

“Business and Entrepreneurial Initiative”

The holder:

- Recognises the skills related to entrepreneurial initiative, analysing the requirements derived from different job positions and business activities.
- Defines the opportunity of creating a small enterprise, assessing the impact on the sphere of action and incorporating ethic values.
- Carries out the activities for the setting-up and implementation of a company, choosing its 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 type of service provided.
- 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.
- Gathers information to develop urban and civil works projects, analysing technical information, recognising the performance setting and other significant elements, and carrying out the data-gathering process.
- Develops construction and civil works projects, proposing solutions and preparing the graphical and written documentation.
- Performs on-site and office tasks leading to land construction, surveying and/or setting out processes, using direct and indirect methods and handling topographical tools.
- Assesses projects and construction works taking measurements of work units and preparing estimates and certificates.
- Collaborates in the planning of urban and civil works projects, preparing, adapting or updating plans and programmes.
- Manages documentation of urban and civil works projects, reproducing it and filing it in accordance with the established quality criteria.

RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA

The Higher Technician in Civil Works Projects works as an employee or self-employed person in offices related to drafting, architecture or engineering, real estate development companies, companies providing technical services and consultancy, construction, concession and operating companies, companies from other sectors whose activities have a significant incidence on the land, given their exploitation of natural resources, and Public Administrations. His/her work is regulated by law.

The most relevant occupations or jobs are the following:

- Road design draughtsperson
- Urbanisation design draughtsperson
- Civil works draughtsperson
- Urban services draughtsperson
- Assistant topographical surveyor
- Land surveying expert
- Construction surveying expert
- Construction work setting out expert
- Topography draughtsperson
- Assistant to technical office manager
- Scheduler assistant
- Assistant to cost control technician
- Documentation control technician
- Construction model-maker
- Fluids distribution systems and networks design draughtsperson

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 5b of the International Standard Classification of Education (ISCED5b)
 - -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 386/2011, of 18 March, according to which the diploma of Higher Technician in Civil Works Projects 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
Construction Structures	6
Construction Representations	18
Construction Measurements and Assessments	6
Construction Work Setting Out	7
Construction Scheduling	6
Urbanism and Civil Works	8
Installations and Services for Civil Works	8
Topographical Surveys	11
Development of Urban Projects	8
Development of Linear Projects	6
Project on Civil Works	5
Professional 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.

INFORMATION ON THE EDUCATION SYSTEM

