

EUROPASS DIPLOMA SUPPLEMENT TO HIGHER TECHNICAL VOCATIONAL TRAINING

TITLE OF THE DIPLOMA (ES)

Técnico Superior en Administración de Sistemas Informáticos en Red

TRANSLATED TITLE OF THE DIPLOMA (EN)⁽¹⁾

Higher Technician in Computer Network Systems Management

(1) This translation has no legal status.

DIPLOMA DESCRIPTION

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

Configuration, administrating and maintaining computer systems, guaranteeing system functionality, integrity of resources and services, with the required quality and complying with the current legislation.

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

“Operating Systems Implementation”

The holder:

- Installs operating systems, analysing their characteristics and interpreting technical documentation.
- Configures standard software, analysing the operation needs of the computer system.
- Secures the system information, describing procedures and using backups and systems resistant to failures.
- Gathers information in servers managing domain structures and analysing their advantages.
- Manages access to domains analysing and respecting security requirements.
- Detects throughput problems, monitoring the system with the appropriate tools and documenting the procedure.
- Analyses the use and access to resources, identifying and respecting the system security requirements.
- Implements specific software with the structure client/server responding to functional requirements.

“Network Planning and Management”

The holder:

- Recognises the structure of data networks identifying their elements and operation principles.
- Integrates computers and peripherals within wired and wireless networks, assessing their functionality and features.
- Manages network switches establishing configuration options for their integration into the network.
- Manages the basic functions of a “router” establishing configuration options for their integration into the network.
- Configures virtual local networks identifying their range of application.
- Carries out advanced network management tasks, analysing and using dynamic routing protocols.
- Connects private networks to public networks identifying and applying different technologies.

“Hardware Fundamentals”

The holder:

- Configures microcomputer equipment, components and peripherals, analysing their characteristics and relationship with the group as a whole.
- Installs general-purpose software assessing their characteristics and application environments.
- Carries out procedures in order to retrieve the standard software in a computer, analysing the same and using stored images in an external memory.
- Installs specific hardware in data centres, analysing their characteristics and applications.

“Database Management”

The holder:

- Recognises the elements of databases analysing their functions and assessing the usefulness of management systems.
- Designs normalised logic models interpreting entity/relationship diagrams.

- Carries out the physical design of databases using wizards, graphic tools and data definition language.
- Checks the stored information using wizards, graphic tools and data definition language.
- Changes the stored information using wizards, graphic tools and data definition language.
- Carries out tasks of information assurance, analysing them and applying protection and transfer mechanisms.

“Markup Language and Information Management Systems”

The holder:

- Recognises the characteristics of the markup language analysing and interpreting code fragments.
- Uses markup languages for the transmission of information through the web analysing the structure of documents and identifying their elements.
- Creates content channels analysing and using syndication technologies.
- Establishes validation mechanisms for XML documents using methods to define their syntax and structure.
- Carries out conversions of XML documents using processing techniques and tools.
- Manages information in XML format analysing and using storage technologies and query languages.
- Works with business information management systems carrying out tasks of import, integration, assurance and extraction of information.

“Operating Systems Management”

The holder:

- Administers the directory service interpreting specifications and integrating the same into a network.
- Administers system processes describing them and applying security criteria and efficiency.
- Manages the system tasks automation, applying efficiency criteria and using commands and graphics tools.
- Administers network operating systems remotely, assessing its importance and applying security criteria.
- Administers printing services describing their functions and integrating them into a network.
- Integrates free and proprietary operating systems, justifying and guaranteeing their interoperability.
- Uses script languages in operating systems, describing their application and managing services of the operating system.

“Network Services and Internet”

The holder:

- Administers name resolution services, analysing them and guaranteeing the security of the service.
- Administers automatic configuration services, identifying them and verifying the correct correspondence of parameters.
- Administers web servers applying configuration criteria and ensuring service operation.
- Administers file transfer services ensuring and limiting access to information.
- Administers email servers, applying configuration criteria and guaranteeing the security of the service.
- Administers instant messaging services, newsletters and distribution lists, verifying and ensuring users' access.
- Administers audio services identifying distribution needs and adapting formats.
- Administers video services identifying distribution needs and adapting formats.

“Web Applications Implementation”

The holder:

- Prepares the development environment and web application servers installing and integrating the necessary functionalities.
- Implements content managers selecting them and establishing their parameters configuration.
- Administers content managers adapting them to requirements and guaranteeing information integrity.
- Manages web office automation applications integrating functionalities and ensuring access to information.
- Creates web documents using server script languages.
- Creates web documents with access to databases using server script languages.
- Makes changes to content managers adapting their layout and functionalities.

“Database Management Systems Administration”

The holder:

- Installs database management systems analysing their characteristics and adapting the same to the requirements of the system.
- Configures database management systems interpreting technical specifications and operation requirements.
- Implements access control methods using wizards, graphic tools and command language of the management system.
- Automates administration tasks of the management system describing them and using script statements.
- Optimises the system throughput applying monitoring techniques and making adaptations.

- Applies availability criteria analysing them and adapting the management system configuration.

“Safety and High Availability”

The holder:

- Adopts guidelines and practices for a secure treatment of information, recognising the vulnerabilities of a computer system and the need to secure the same.
- Implements active security mechanisms, selecting and using countermeasures in case of threats of attacks on the system.
- Implements secure techniques in order to have remote access to a computer system, interpreting and applying the security plan.
- Implements firewalls in order to secure a computer system, analysing their features and controlling internal network traffic.
- Implements “proxy” servers, applying configuration criteria guaranteeing the secure operation of the service.
- Implements high availability solutions using virtualization techniques and configuring test environments.
- Recognises the legislation and regulations on data security and protection assessing their importance.

“Project on Computer Network Systems Management”

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.

“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 protection action of the Spanish Health Service in view of the different eventualities covered, 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 Computer Network Systems Management.

“Business and Entrepreneurial Initiatives”

The holder:

- Recognises skills related to entrepreneurial initiatives, 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 them with the type of service provided.
- Applies labour and ethic habits in the carrying out of his/her professional activity according to the characteristics of the job position and the procedures established by the company.
- Organises the work procedure that s/he must carry out, interpreting specific documentation.
- Determines the technical characteristics of the installation from the established functionalities and needs.
- Participates in the design, implementation and maintenance of local network services installations and internet, documenting the carried out intervention.
- Helps customers solving problems related to the running of the system, according to rules and times.

RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA

The Higher Technician in Computer Network Systems Management works in the area of computer science within companies that have data management systems and network infrastructures (intranet, internet and/or extranet).

The most relevant occupations or jobs are the following:

- Systems management technician
- Person in charge of computer science
- Internet services technician
- Electronic messaging services technician
- Help and technical support staff
- Teleassistance technician
- Database management technician
- Network technician
- Systems supervisor
- Telecommunication services technician
- Web environments 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 _____ of the European Qualifications Framework (EQF__).

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 1629/2009, of 30 October, according to which the diploma of Higher Technician in Computer Network Systems Management 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	MINIMUM HOURS*	CREDITS ECTS
Operating Systems Implementation.	140	15
Network Planning and Management.	110	12
Hardware Fundamentals.	55	6
Database Management.	105	11
Markup Language and Information Management Systems.	70	7
Operating Systems Management.	75	8
Network Services and Internet.	75	8
Web Applications Implementation.	55	6
Project on Computer Network Systems Management.	25	5
Vocational Training and Guidance.	50	5
Business and Entrepreneurial Initiative.	35	4
On the Job Training.	220	22
	TOTAL HOURS	TOTAL CREDITS
	1100	120
OFFICIAL DURATION	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 EDUCATIONAL SYSTEM