



Consejo General
de Colegios Oficiales de Aparejadores
y Arquitectos Técnicos

Degree in Arquitectura Técnica

Academic Training

The university diploma of “Graduado en Arquitectura Técnica” (*Degree in Arquitectura Técnica*¹) is obtained after following the appropriate university course, which is taken in one of the public or private University Schools or equivalent establishments that exist in Spain.

It is a four years long degree (240 ECTS). Therefore, it is a degree that reaches the maximum level of qualification as provided in the article 11.e) of the *Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications*, as it is “a diploma certifying that the holder has successfully completed a post-secondary course of at least four years' duration, or of an equivalent duration on a part-time basis, at a university or establishment of higher education or another establishment of equivalent level and, where appropriate, that he has successfully completed the professional training required in addition to the post-secondary course”.

It is “regulated education”, in the sense expressed in the article 3.1.e) of the *Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications*, and the regulated profession it gives access to is that of “Arquitecto Técnico”.

The university diploma of “Graduado en Arquitectura Técnica” (*Degree in Arquitectura Técnica*), that entitles the holder to pursue the regulated profession of “Arquitecto Técnico”, shall conform to the preventions contained on the Order ECI/3855/2007 of 27 December, by which the requirements of verification of the official university diplomas that entitles to pursue the profession of Arquitecto Técnico are establish.

Competences that the students should acquire

1. To direct the execution of building works, its facilities and elements, conducting qualitative and quantitative control of the constructed buildings through the establishment and management of material control plans, systems and execution of building works, developing the appropriate registers for its inclusion in the Building's Book. To manage the economic control of the works, developing certifications and the settlement of the performed buildings.
2. To write health and safety studies and plans and to coordinate the activity of the companies relating to health and safety in construction works, and studies, at the planning stage and during execution.

¹ Please note: the only authentic name of a regulated profession is that of the language of the country in which the profession is regulated. Consequently, the name of the profession has not been translated in this document.



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3. To carry out estimation techniques, measurements, valuations, appraisals and economic feasibility studies, to perform expert opinion documents, inspections, analysis of pathology and the like and to draft reports, opinions and technical documents, and carry out land surveys in lots and buildings.
4. To develop technical projects and perform management of building works inside the frame of the legal powers attributed to them.
5. To manage new building construction technologies and to take part in the management processes of building quality; to perform analysis, evaluations and certifications of energy efficiency as well as building's sustainability studies.
6. To direct and manage the use, conservation and maintenance of buildings, writing the necessary technical documents to do so. To elaborate studies about the materials' construction systems and buildings life cycle. To manage the processing of construction and demolition waste.
7. To advise technically in the manufacturing processes of materials and components used in building construction.
8. To manage the real estate process as a whole. To represent as a technician the construction companies in the building works.

Planning of the curriculum

As it has been stated, “Graduado en Arquitectura Técnica” (Degree in Arquitectura Técnica) is an official university degree and its curriculum lasts 240 European credits, as it is referred in the Royal Decree 822/2021 of 28 September.

The curriculum must include, at least, the modules contained in the attached document (copy of pages 53741 and 53742 of the Boletín Oficial del Estado -Government Gazette- number 312 of 29 December 2007).

Professional functions of the “Arquitecto Técnico”

“Arquitecto Técnico” is a “regulated profession” which legally qualifies a person to carry out regulated professional activities within the meaning of article 1 and 3.1.a) of the *Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualification*.

The exercise of the profession is supervised by the *Colegio Oficial de Arquitectos Técnicos* (Official Professional Order of Arquitectos Técnicos) for the place where the professional has his business address, and every professional is legally obliged to be a member of the Order in order to be able to practice on his own account.



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As a generalist who is familiar with the techniques and applies them to the construction process, the “Arquitecto Técnico” is a figure closely related to the Civil Engineer and/or Construction-Building Engineer who carry out this function in other countries.

The accredited training enables the “Arquitecto Técnico” to carry out a wide variety of activities in the construction of all kinds of buildings, headed by the Site Management, which involves the qualitative and quantitative control of the construction and economic aspects of the process. In addition, the “Arquitecto Técnico” may draft plans or projects for certain types of buildings, plans and quality control registers, for construction systems and for their installations. He is also authorized to manage the use and maintenance of buildings during their useful life and, where appropriate, their restoration.

The “Arquitecto Técnico” also carries out tasks such as advising on contracting and on the selection and purchase of products, materials and installations; or the obtaining of administrative authorisations and licences; or the carrying out of studies and the financial planning for the development; or the monitoring of compliance with the works contract and the supply contracts. This is the project management function.

In terms of health and safety at work, he may prepare health and safety studies and be responsible for occupational health and safety coordination in the planning and execution.

When it comes to environmental management, the “Arquitecto Técnico” is qualified to manage the waste generated by the process.

As a construction expert, he may prepare all kinds of expert reports and documents, either for individuals or for the courts of justice. He may carry out his activities as a liberal professional in businesses and in all areas of the public administration (local, regional and state).

And we must not forget the Construction Manager function, which is another very important field of professional practice, particularly on major developments.

Aside from all this we have the project activity, which is particularly important in the sphere of the works of restoration, reparation and consolidation of already built buildings and in the works of adaptation and decoration of commercial premises, which also tends to involve the management of the works themselves.

The field of teaching and the exercise of the public function is a very important area of professional involvement. We must not forget that in a large number of the 8,000-plus Spanish Town Councils, the technical services (civil servants) are performed by “Arquitectos Técnicos”. They are widely found in the regional administrations and also in the central administration.



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**FUNCTIONS OF THE ARQUITECTO TÉCNICO AS SITE MANAGER (Director of the execution of the building)
(regulated professional activity)**

As part of the Technical Directors Team (consisting of the Director of the Building, the Director of the Execution of the Building and, where appropriate, the Health and Safety Coordinator during the execution phase), the “Arquitecto Técnico”:

- Assumes the technical function of managing the physical execution of the work and of carrying out qualitative and quantitative checks on the construction and the quality of what has been built (quality control).
- Verifies the reception of the construction products on site, organising the carrying out of trials and tests.
- Manages the material execution of the works, verifying ground plans, materials and the correct execution and arrangement of the constructive elements and services according to the project and the instructions of the Director of the Works.
- Records the necessary instructions in the Book of Orders and Attendance.
- Signs the Site Preparation Certificate or beginning of the works certificate and the Final Certificate (which has to be produced to the Minutes of Acceptance of the project).
- Prepares and signs the partial economic certifications and the final settlement of the units of work performed.
- Receives the results of the service trials or tests on materials, systems or installations, which have to be delivered to him by the building quality control entities and laboratories, which also have to provide technical assistance to him.
- Collaborates on the preparation of the documentation for works performed (Building Book) and facilitates the results of the check carried out.

INVOLVEMENT OF THE “ARQUITECTO TÉCNICO” IN BUILDING WORKS

- Mandatory, as “Site Manager” (Director of the Execution of the Building) and component of the Technical Directors Team (**regulated professional activity**):
 - In all new-builds that are principally for residential use in all its forms, or for administrative, healthcare, religious, educational or cultural use. Similarly, and where the Director of the Building is an Architect, in the construction of buildings whose principal use is aeronautical; agricultural; energy-related; water-related; mining; telecommunications; land, sea, river and air transport; forestry; industrial; naval, drainage and hygiene engineering; and ancillary to engineering works and their exploitation.



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- In all projects planned and managed by an Architect that relate to existing buildings which correspond to the uses indicated in the preceding paragraph where there is total intervention or, in the case of partial intervention, where there is an essential variation in the general external composition, the volumetry or the structural system as a whole or where the purpose is to change the characteristic uses of the building, all of which situations are deemed to alter the “architectural configuration” of the building.
- In listed buildings or buildings that have some form of environmental or historical-artistic character which are planned and managed by an Architect, as well as in works to parts of buildings which affect the elements or parts that are the subject of protection.
- Optional, as “Site Manager” (Director of the Execution of the Building) and component of the Technical Directors Team, in all projects planned or managed by Engineers.
- Optional in the planning and management (of the project and site) in:
 - New-build projects or works to existing buildings whose uses are not listed above, in accordance with the legal provisions that apply to the profession and depending on his speciality and specific competences.
 - Projects involving a new building which is technically simple, where the building is not for residential or public use, either temporarily or permanently, and where only one floor is performed.
 - Projects involving the extension, modification, remodelling or restoration of existing buildings which do not involve total intervention, which do not give rise to an essential change in their general external composition, their volumetry or the structural system as a whole and do not change the characteristic use of the building.
 - Demolition works.
 - Decoration works.
 - Other projects and constructions which do not amount to building works, in accordance with his speciality.
- Other interventions:
 - Drafting and signing health and safety studies and drafting health and safety plans. Technical assistance prior to such actions.
 - Coordination, at the planning and execution stage, of health and safety in relation to the construction projects, being incorporated into the Executive Project Management Team.



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- Drafting of partial projects or technical documents with his/her own signature and responsibility in concrete aspects corresponding to the specialities and specific competences of the profession.
- Carrying out, with his/her own signature and responsibility, measuring, calculations, valuations, assessments, appraisals, studies, reports, work plans and other similar tasks.



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Módulo	Nº de créditos europeos	Competencias que deben adquirirse
De formación básica	60	
Fundamentos Científicos		Aptitud para utilizar los conocimientos aplicados relacionados con el cálculo numérico e infinitesimal, el álgebra lineal, la geometría analítica y diferencial, y las técnicas y métodos probabilísticos y de análisis estadístico Conocimiento aplicado de los principios de mecánica general, la estática de sistemas estructurales, la geometría de masas, los principios y métodos de análisis del comportamiento elástico del sólido.
Expresión Gráfica		Capacidad para aplicar los sistemas de representación espacial, el desarrollo del croquis, la proporcionalidad, el lenguaje y las técnicas de la representación gráfica de los elementos y procesos constructivos.
Química y Geología		Conocimiento de las características químicas de los materiales empleados en la construcción, sus procesos de elaboración, la metodología de los ensayos de determinación de sus características, su origen geológico, del impacto ambiental, el reciclado y la gestión de residuos.
Instalaciones		Conocimiento de los fundamentos teóricos y principios básicos aplicados a la edificación, de la mecánica de fluidos, la hidráulica, la electricidad y el electromagnetismo, la calorimetría e higrotermia, y la acústica.
Empresa		Conocimiento adecuado del concepto de empresa, su marco institucional, modelos de organización, planificación, control y toma de decisiones estratégicas en ambientes de certeza, riesgo e incertidumbre; sistemas de producción, costes, planificación, fuentes de financiación y elaboración de planes financieros y presupuestos. Capacidad para organizar pequeñas empresas, y de participar como miembro de equipos multidisciplinares en grandes empresas.
Derecho		Conocimientos básicos del régimen jurídico de las Administraciones Públicas y de los procedimientos de contratación administrativa y privada.
Específico	108	
Expresión Gráfica		Capacidad para interpretar y elaborar la documentación gráfica de un proyecto, realizar toma de datos, levantamientos de planos y el control geométrico de unidades de obra. Conocimiento de los procedimientos y métodos infográficos y cartográficos en el campo de la edificación. Aptitud para trabajar con la instrumentación topográfica y proceder al levantamiento gráfico de solares y edificios, y su replanteo en el terreno.
Técnicas y Tecnología de la Edificación		Conocimiento de los materiales y sistemas constructivos tradicionales o prefabricados empleados en la edificación, sus variedades y las características físicas y mecánicas que los definen. Capacidad para adecuar los materiales de construcción a la tipología y uso del edificio, gestionar y dirigir la recepción y el control de calidad de los materiales, su puesta en obra, el control de ejecución de las unidades de obra y la realización de ensayos y pruebas finales. Conocimiento de la evolución histórica de las técnicas y elementos constructivos y los sistemas estructurales que han dado origen a las formas estilísticas. Aptitud para identificar los elementos y sistemas constructivos, definir su función y compatibilidad, y su puesta en obra en el proceso constructivo. Plantear y resolver detalles constructivos. Conocimiento de los procedimientos específicos de control de la ejecución material de la obra de edificación. Capacidad para dictaminar sobre las causas y manifestaciones de las lesiones en los edificios, proponer soluciones para evitar o subsanar las patologías, y analizar el ciclo de vida útil de los elementos y sistemas constructivos. Aptitud para intervenir en la rehabilitación de edificios y en la restauración y conservación del patrimonio construido. Capacidad para elaborar manuales y planes de mantenimiento y gestionar su implantación en el edificio Conocimiento de la evaluación del impacto medioambiental de los procesos de edificación y demolición, de la sostenibilidad en la edificación, y de los procedimientos y técnicas para evaluar la eficiencia energética de los edificios.

The modules listed above are the compulsory ones. From there on, each university adds the free elective courses and the optional ones that it considers appropriate, within the parameters defined by the applicable standards

Módulo	Nº de créditos europeos	Competencias que deben adquirirse
Estructuras e Instalaciones de la Edificación Gestión del Proceso		<p>Capacidad para aplicar la normativa técnica al proceso de la edificación, y generar documentos de especificación técnica de los procedimientos y métodos constructivos de edificios.</p> <p>Aptitud para aplicar la normativa específica sobre instalaciones al proceso de la edificación.</p> <p>Aptitud para el predimensionado, diseño, cálculo y comprobación de estructuras y para dirigir su ejecución material.</p> <p>Capacidad para desarrollar constructivamente las instalaciones del edificio, controlar y planificar su ejecución y verificar las pruebas de servicio y de recepción, así como su mantenimiento.</p> <p>Capacidad para programar y organizar los procesos constructivos, los equipos de obra, y los medios técnicos y humanos para su ejecución y mantenimiento.</p> <p>Conocimiento del derecho de la construcción y de las relaciones contractuales que se producen en las distintas fases del proceso de edificación, así como de la legislación, reglamentación y normativas específicas de la prevención y coordinación en materia de seguridad y salud laboral en la edificación.</p> <p>Aptitud para redactar estudios, estudios básicos y planes de seguridad y salud laboral, y coordinar la seguridad en fase de proyecto o en fase de ejecución de obra.</p> <p>Capacidad para la gestión del control de calidad en las obras, la redacción, aplicación, implantación y actualización de manuales y planes de calidad, realización de auditorías de gestión de la calidad en las empresas, así como para la elaboración del libro del edificio.</p> <p>Aptitud para analizar, diseñar y ejecutar soluciones que faciliten la accesibilidad universal en los edificios y su entorno.</p> <p>Conocimientos de la organización del trabajo profesional y de los estudios, oficinas y sociedades profesionales, la reglamentación y la legislación relacionada con las funciones que desarrolla el Ingeniero de Edificación y el marco de responsabilidad asociado a la actividad.</p>
Gestión Urbanística y Economía aplicadas Proyectos Técnicos		<p>Capacidad para confeccionar y calcular precios básicos, auxiliares, unitarios y descompuestos de las unidades de obra; analizar y controlar los costes durante el proceso constructivo; elaborar presupuestos.</p> <p>Aptitud para el desarrollo de estudios de mercado, valoraciones y tasaciones, estudios de viabilidad inmobiliaria, peritación y tasación económica de riesgos y daños en la edificación.</p> <p>Capacidad para analizar y realizar proyectos de evacuación de edificios.</p> <p>Conocimiento del marco de regulación de la gestión y la disciplina urbanística.</p> <p>Capacidad para aplicar las herramientas avanzadas necesarias para la resolución de las partes que comporta el proyecto técnico y su gestión.</p> <p>Aptitud para redactar proyectos técnicos de obras y construcciones, que no requieran proyecto arquitectónico, así como proyectos de demolición y decoración.</p> <p>Aptitud para redactar documentos que forman parte de proyectos de ejecución elaborados en forma multidisciplinar.</p> <p>Capacidad de análisis de los proyectos de ejecución y su traslación a la ejecución de las obras.</p> <p>Conocimiento de las funciones y responsabilidades de los agentes que intervienen en la edificación y de su organización profesional o empresarial. Los procedimientos administrativos, de gestión y tramitación.</p> <p>Conocimiento de la organización profesional y las tramitaciones básicas en el campo de la edificación y la promoción.</p>
Proyecto Fin de Grado	12	Presentación y defensa ante un tribunal universitario de un proyecto fin de grado, consistente en un ejercicio de integración de los contenidos formativos recibidos y las competencias adquiridas.