

PROFESSIONAL QUALIFICATIONS

**Senior Technician in
Production by Machining**

Mechanical Manufacture

- Training

2000 hours

- Work posts

FIRST YEAR

Definition of machining, shaping and assembly processes	256
Programming numerically controlled machines for mechanical manufacturing	192
Executing processes of machining, shaping and assembly	352
Materials used in mechanical manufacture	96
Safety plans in mechanical manufacturing industries	64

- Technician in machining processes.
- Technician in planning production.
- Technician in methods and scheduling.
- Machine and systems programmer.
- Quality control technician.
- Shop foreman.

SECOND YEAR

Programming automatic systems of mechanical manufacturing	132
Programming production in mechanical manufacturing	176
Quality control in mechanical manufacturing	154
Relations in the working environment	66
Training and work orientation	66
Integrated project	66
Training in work centre	380

PROFESSIONAL QUALIFICATIONS

Senior Technician in Production by Machining

- General qualification

Programme, organise and cooperate in the productive machining process (stock removal, shaping and special machining), as well as in the production and assembly of mechanical equipment, attending to the manufacture and carrying out programming of automatic systems, starting with technical documentation, and giving the necessary support to lower level technicians.

- Units of competence

- Develop operational machining, shaping and assembly processes.
- Develop programming of automated machining, shaping and assembly processes.
- Programme and control production in mechanical manufacturing.
- Manage and supervise production in mechanical manufacturing.
- Control quality in mechanical manufacturing.

PROFESSIONAL QUALIFICATIONS

Administration/Higher Diploma in Administration and Finances

Qualified to

Organise, administrate and manage personnel, economic/ financial operations and information and advice to clients or users, both in the public and private sectors according to the size and activity of the company and organisation and in accordance with the set objectives, internal regulations and current statutory regulations.

- ◆ Administrate and manage the provision of stock.
- ◆ Administrate and manage finance, budget and treasury.
- ◆ Administrate and manage human resources.
- ◆ Perform and analyse accounting and taxation operations.
- ◆ Perform and supervise consultancy operations, complaints and sale of products and services.
- ◆ Administrate and manage public administration.
- ◆ Inform and advise on financial and insurance products and services.
- ◆ Carry out audit service administration.

Training

First year	hours
• Purchases management.	128
• Financial administration.	160
• Human resources.	128
• Accountancy and taxation.	288
• Computer applications and keyboarding.	256
Second year	
• Commercial management and customer care service.	88
• Public administration.	110
• Financial and insurance products and services.	110
• Audit.	88
• Management project.	198
• Training and career guidance.	66
• Training in a work environment.	380

Employment Positions

- ◆ Administrative clerk in an office or professional organisation.
- ◆ Commercial administrative agent.
- ◆ Management and personnel, accountancy administrative.
- ◆ Bank and financial institutions clerk.
- ◆ Head of treasury.
- ◆ Head of payment options.
- ◆ Portfolio Head.
- ◆ Head of securities.
- ◆ Head of foreign affairs.
- ◆ Public Administration administrative clerk.
- ◆ Specialist in debt collection management.
- ◆ Audit assistant.
- ◆ Sales representative for insurance and banks and financial institutions.
- ◆ Administrative agent.

PROFESSIONAL QUALIFICATIONS

**Senior Technician in
Electro-technical Installations**

ELECTRICITY / ELECTRONICS	Training	2000 hours	Work posts
	FIRST YEAR		
	Techniques and processes in electric installations	256	<ul style="list-style-type: none"> • Designer of: <ul style="list-style-type: none"> - Electric lines. - Electrification installations for homes and buildings. - Singular installations (aerials, telephones, entryphones, public-address systems, safety, photovoltaic solar energy). - Automated installations, “domotic” and technical management. • Technician for supervision, verification and control of electro-technical equipment and installations.
	Techniques and processes in singular installations in buildings	256	
	Intelligent computing	192	
	Relations in the working environment	64	
	Quality	64	
	Safety in electro-technical installations.	64	
	Training and work orientation	64	
	SECOND YEAR		
	Techniques and processes in automated installations In buildings	176	
	Management of development of Electro-technical installations	88	
	Management and commercialisation in a small sized company	88	
	Development of electric distribution installations	132	
	Development of electro-technical installations in buildings	176	
	Training in work centre	380	

PROFESSIONAL QUALIFICATIONS

Senior Technician in Electro-technical installations

General qualification

Develop equipment and installations of medium and low voltage electric energy distribution and transformation centres, singular and automation installations for buildings intended for housing, commercial and industrial uses, starting with technical and economic specifications agreed with the client, as well as co-ordinating and supervising the execution, setting into operation, checking and maintenance of such installations, maximising on human resources and means available, with the required quality and under safety conditions and legislation currently in force.

Units of competence

- Develop and maintain equipment and installations of medium and low voltage electric energy and transformation centres.
- Develop and maintain singular installations in and around buildings.
- Develop and maintain automatic control equipment and automated installations for housing.
- Manage and control the execution and maintenance of electro-technical installations.
- Carry out the management and commercialisation in a small company or workshop.

Electricity-Electronics

Technician in Electro-technical Equipment and Installations

MIDDLE GRADE

PROFESSIONAL QUALIFICATIONS

GENERAL SKILLS

These Technicians are qualified to build, use and maintain medium/low voltage electric energy distribution lines and installations and transformer stations, specific and building automation installations. To build electro-technical equipment for electric energy distribution and protect and control electrical machinery. To maintain and test electrical machinery using established procedures. To perform preventive and corrective maintenance on installations in their field.

SKILLS UNITS

- ◆ To build and maintain medium/low voltage electric energy distribution and supply equipment and installations.
- ◆ To build and maintain specific installations in buildings.
- ◆ To build and maintain automated electro-technical equipment and installations.
- ◆ To build, maintain and test static and rotating electrical machinery.
- ◆ To administrate, manage and promote a small business or workshop.

PROFESSIONAL MODULES/LENGTH

first year	hours
Work team relations.	64
Quality.	64
Safety on electrical installations.	64
Electrotechnics.	192
Interior electrical installations.	256
Automatisms and electrical switchboards.	256
Work training and guidance.	64
second year	
Electrical trunk installations and transformer stations.	132
Specific installations for houses and buildings.	176
Automated installations for houses and buildings.	132
Electrical machinery maintenance.	32
Administration, management and promotion of a small company.	88
In situ work practice.	80

FUNCTIONAL, TECHNOLOGICAL ENVIRONMENT

Depending on the type of company in which they are employed, these Professionals are qualified to perform maintenance and work on medium/low voltage electrical distribution lines, electrification installations, specific installations and automation installations for buildings, perhaps carrying out small projects within their field of competence. They can maintain electrical machinery, both static and rotating, and build electro-technical switchboards and electro-technical equipment, performing their tasks as field technicians, workshop technicians, working self-employed or administrating and managing a small company or workshop.

The techniques and technologies involved in the work of these Professionals are those concerning medium/low voltage electrical installations, specific installations in buildings, mainly those relevant to sound, telephone systems, land TV aerials and satellite dishes, security systems, automation installations for buildings, photovoltaic systems, relevant distribution and control switchboards and electrical machinery.

PROFESSIONAL ENVIRONMENT

These Technicians are qualified to work in the sub-sectors of electro-technical installations and, basically, companies involved in:

- Electrical energy production stations.
- Low/medium voltage electrical distribution installations.
- Electrification installations for buildings.
- Specific installations for buildings (intercommunication, telephone systems, aerials, security).
- Automated installations for buildings.
- Photovoltaic solar energy and wind energy installations.
- Building of electro-technical switchboards and equipment.
- Repair of electrical machinery.
- Maintenance of household appliances.

MOST RELEVANT JOBS:

- ◆ Electric cable installer.
- ◆ Production station assembler.
- ◆ General electrician.
- ◆ Installation electrician for buildings.
- ◆ Industrial electrician.
- ◆ Assembler of electrical switchboards.
- ◆ Coiler.
- ◆ Electronic installer for buildings.
- ◆ Aerial installer.
- ◆ Telephone system installer.
- ◆ Repairer of household appliances.

PROFESSIONAL QUALIFICIATIONS

Administration/Diploma in Administrative Management

Qualified to

Perform administrative management operations in the public and private sectors, in accordance with internal organisation regulations and current legislation, in an efficient manner and providing a quality service.

- ◆ Record, process and transmit information.
- ◆ Administrative management of purchase/ sale of products and/ or services.
- ◆ Administrative management of personnel.
- ◆ Administrative management of treasury and accounting records.
- ◆ Inform and serve the client in matters concerning financial and insurance products and/ or services.
- ◆ Administrative management in Public Administration.

Training

First year	hours
Communications, information filing and keyboarding.	160
Administrative management of purchases/ sales.	96
Administrative management of personnel.	96
General accounting and treasury.	160
Basic financial and insurance products and services.	128
Principles of public administrative management.	96
Computer Applications.	160
Training and career guidance.	64
Second year	
Training in a work environment.	340

Employment Positions

- ◆ Administrative assistant,
- ◆ Office assistant,
- ◆ Documentation and filing clerk,
- ◆ Collection and payment agent,
- ◆ Cashier,
- ◆ Bank and financial institution clerk,
- ◆ Treasury employee,
- ◆ Payment methods employee,
- ◆ Portfolio, securities or "foreign" employee,
- ◆ Administrative assistant in Public Administration,
- ◆ Production insurance, accidents and reinsurance employee,
- ◆ Commercial clerk,
- ◆ Management and personnel administrative agent.

Mechanical Manufacturing
MIDDLE GRADE
Machining Technician
PROFESSIONAL QUALIFICATIONS

GENERAL SKILLS

These Technicians are qualified to perform different operations in machining processes, controlling the products obtained and the working order, commissioning and stopping of the machinery, taking responsibility for first level machinery maintenance, obtaining production in conditions of quality and safety within the deadlines required.

SKILLS UNITS

- ◆ To define the machining processes of unit parts.
- ◆ To prepare and programme machines and systems for machining.
- ◆ To machine products by stock removal.
- ◆ To machine products by abrasion, forming and special procedures.
- ◆ To check product characteristics.
- ◆ To administrate, manage and promote a small business or workshop.

PROFESSIONAL MODULES/LENGTH

first year	hours
Machining procedures.	192
Manufacture by stock removal.	384
Manufacture by abrasion, forming and special procedures.	192
Control of machined product characteristics.	128
Safety in mechanical manufacturing industries.	64
second year	
Preparing and programming mechanical manufacturing machinery.	308
Auxiliary mechanical manufacturing systems.	132
Administration, management and promotion of a small company.	88
Work team relations.	66
Work training and guidance.	66
In situ work practice.	380

FUNCTIONAL, TECHNOLOGICAL ENVIRONMENT

These professionals are qualified to operate manufacturing tool machinery: by stock removal, forming or special processes. They are also qualified to prepare automatic machines, machining cells, flexible systems or transfer lines.

Depending on the size, type of company and series to be machined, they can execute CNC programmes on the shop floor.

They are functionally dependent on those in charge of machinery, equipment and system maintenance work.

They perform product Quality verifications on reception, during the process and after the process.

They work in conjunction with technicians of their own level in continuous production processes.

PROFESSIONAL ENVIRONMENT

Their qualifications allow them to form part of production departments under the charge of an intermediate superior. In certain cases, they may be in charge of operators and under the direct charge of the head of production.

These Professionals can work in the Metal Transformation industry in companies involved in: Metal product manufacturing. Machinery and mechanical equipment building. Automobile and automobile part manufacture. Shipbuilding. Transport material manufacture. Manufacture of optical precision equipment and similar.

MOST RELEVANT JOBS:

These Technicians can work in many jobs with different names. In general, the following can be listed:

- ◆ Machine preparer (automatic lathes, transfer lines, flexible systems, metal sheet processing lines).
- ◆ Lathe operator.
- ◆ Milling-machine operator.
- ◆ Borer operator.
- ◆ Rectification machine operator.
- ◆ Operator of stock removal, forming or special process line.
- ◆ Modeller.
- ◆ Mould-matrix operator.
- ◆ On-floor CNC tool machinery programmer.

Mechanical Manufacture
Technician in Welding and Boilermaking
MIDDLE GRADE
PROFESSIONAL QUALIFICATIONS

GENERAL SKILLS

These technicians are qualified to manufacture, assemble and repair fixed and mobile metal construction elements in conditions of safety, performing the basic maintenance of the equipment and auxiliary tools used and applying the established quality control procedures.

SKILLS UNITS

- ◆ To mark out, cut, machine and shape plates, profiles and tubes for metal constructions.
- ◆ To weld parts and assemblies for the manufacture, assembly or repair of metal constructions.
- ◆ To assemble metal construction elements and sub-assemblies.
- ◆ To perform metal construction quality control operations.
- ◆ To perform administration, management and sales tasks in a small company or workshop.

PROFESSIONAL MODULES/LENGTH

first year	hours
Geometrical development for metal constructions.	192
Metal construction machining.	160
Marking out and shaping for metal constructions.	128
Welding in natural environment.	352
Safety in the metal construction industry.	64
Work training and guidance.	64
second year	
Welding in protected environment.	264
Metal construction assembly.	176
Metal construction quality.	66
Administration, management and sales in a small company.	88
Work team relations.	66
In situ work practice.	380

FUNCTIONAL, TECHNOLOGICAL ENVIRONMENT

These professionals are qualified to work in manufacture, assembly, repair and quality control.

The techniques and technological knowledge of these professionals cover the field of metal constructions in general and are directly related to:

Manufacturing processes: equipment and techniques of geometrical development, cutting, machining, shaping, joining, measuring, assembly and quality control.

Knowledge of the technical characteristics of metal construction, reading plans and technical specifications, and general knowledge of materials used in metal constructions.

Basic knowledge of the metallurgic phenomena occurring during the welding process and non-destructive weld testing.

PROFESSIONAL ENVIRONMENT

Mechanical sector of Metal Constructions in manufacture, assembly or repair.

The main sub-sectors these technicians can work in are:

Manufacture of structural metal products, construction of large tanks and heavy boilermaking, private mechanical workshops, structures for machine manufacture, chassis, trailer and dumper construction, shipbuilding and repair, railway construction and repair, aircraft construction and repair, bicycle, motorbike and other vehicle construction.

In work related to equipment maintenance and quality control, these technicians maintain a functional relationship with those responsible.

MOST RELEVANT JOBS:

These technicians can work in any of the following jobs, considered the most representative within the sector:

- ◆ tubing assembler,
- ◆ structural metal product assembler,
- ◆ marker-out,
- ◆ steel-structure repairman in workshop and in situ,
- ◆ metalworker,
- ◆ welder,
- ◆ boilermaker.