

COMMET

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Current national description of competence in the M+E sector within the selected vocations of Electro-Mechanical Technician and Metal Cutting Technician

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Unió Patronal Metal·lúrgica, Josep Anselm Clave n° 2- 2 º- 08002 -Barcelona
<http://www.upm.org> -direccion@upm.org Tel.: 34 93.318 08.28 fax: 34 93.318.49.81

Review of context in Spain

Spanish Educational System

GENERAL EDUCATION IS ORGANIZED AS FOLLOWS:

- NURSERY (0-3)
- INFANT EDUCATION (3 TO 6 YEARS)
- PRIMARY EDUCATION (6 TO 12 YEARS)
- COMPULSORY SECONDARY EDUCATION (12 TO 16 YEARS)
- POST-COMPULSORY SECONDARY EDUCATION (16 TO 18 YEARS)
 - BACCALAUREATE OR
 - **MIDDLE GRADE OF VOCATIONAL TRAINING**
- POST-COMPULSORY EDUCATION (OVER 18 YEARS)
 - **UPPER GRADE VOCATIONAL TRAINING**
 - UNIVERSITY EDUCATION

Vocations selected in COMMET

- Electro-Mechanical Technician
- &
- Metal Cutting Technician


Diplomas in Spain

- Diplomas Vocational Training for **Electro-Mechanical Technician**
 - *Installation and Electromechanical Maintenance of Machinery and Conduction of Lines* → Middle Level
 - *Electrotechnic facilities* → Upper Level

Diplomas in Spain

- Diplomas Vocational Training for **Metal Cutting Technitian**
 - *Mechanized* → Middle Level
 - *Production by mechanized* → Upper Level

Let's see an example

Manteniment i serveis a la producció		 Pàgina Principal
Grau mitjà	Middle grade	
CICLES		DURADA
<u>- Instal.lació i Manteniment electromecànic de maquinària i conducció de línies</u>		2.000 hores
<u>- Manteniment ferroviari</u>		2.000 hores
<u>- Muntatge i Manteniment d'instal.lacions de fred, climatització i producció de calor</u>		2.000 hores
Grau superior	Upper grade	
CICLES		DURADA
<u>- Desenvolupament de projectes d'instal.lacions de fluids, tèrmiques i de manutenció</u>		2.000 hores
<u>- Manteniment d'equips industrials</u>		2.000 hores
<u>- Manteniment i muntatge d'instal.lacions d'edifici i procés</u>		2.000 hores
<u>- Prevenció de riscos professionals</u>		2.000 hores

Electro-Mechanical Technician

Source: <http://www.xtec.es/fp/> depending from Catalan Government

Special thanks to CENTRE DESTUDIS POLITECNICS (Polytechnic Studies Centre)

Vocations in Spain

What do students learn?

1. Installation and Electromechanical Maintenance of Machinery and Conduction of Lines
2. Electrotechnic facilities
3. Mechanized
4. Production by mechanized

Following Descriptions:

- Contents
- Competences
- Jobs they can apply

Training is completed by practical stage in a company

Source: <http://www.mepsyd.es/educa/jsp/plantilla.jsp?id=31&area=formacion-profesional> Ministry of Education, Social Politic and Sports

Installation and Electromechanical Maintenance of Machinery and Conduction of Lines

- Contents (2000 hours)
 - Assembly and mechanical maintenance
 - Assembly and electrical maintenance
 - Conduction and maintenance of automated lines
 - Quality in the assembly and process
 - Techniques of maintenance for the maintenance and assembly
 - Administration, management and commercialization in the small company
 - Electrical engineering
 - Electrical, pneumatic and hydraulic automatism
 - Security in the assembly and maintenance of equipment and facilities
 - Relations in the Surroundings of Work

Installation and Electromechanical Maintenance of Machinery and Conduction of Lines

- Competences: they are able to
 - To assembly and to maintain machinery and electromechanical equipment
 - To assembly and to maintain the systems electrical and electronic of machinery and industrial equipment
 - To lead and to maintain the equipment industrial of automated lines of production
 - To lead the Administration, management and commercialization in a small company or factory

Installation and Electromechanical Maintenance of Machinery and Conduction of Lines

- Jobs they can apply
 - Mechanic of maintenance
 - Electrician of maintenance
 - Electromechanical of maintenance
 - Industrial assembler
 - Maintenance responsible or leader of an automated line

Electrotechnic facilities

- Contents (2000 h)
 - Processes and management of the maintenance
 - Assembly and maintenance of the mechanical system
 - Assembly and maintenance of the hydraulic systems
 - Assembly and maintenance of the electrical systems and electronic
 - Assembly and maintenance of automatic systems of production
 - Projects of modification of the industrial equipment
 - Manufacturing techniques for the maintenance and assembly
 - Graphical representation in machinery
 - Quality in the maintenance and assembly of equipment and facilities
 - Plans of security in the maintenance and assembly of equipment and facilities
 - Elements of machines
 - Relations in the Surroundings of Work
 - Formation and Labour Orientation

Electrotechnic facilities

- Competences: they are able to
 - To develop to processes and methods of maintenance and repair and to organize its execution
 - To manage and to supervise to the processes of installation and maintenance and repair of the industrial equipment, realizing its completion
 - To develop to projects of modification and improvement of the industrial equipment.

Electrotechnic facilities

- Jobs they can apply
 - Technician in facilities and assemblies of industrial equipment
 - Technician in organization of the maintenance

Mechanized

- Contents (2000 h)
 - Procedures of mechanized
 - Preparation and programming of machines of mechanical manufacture
 - Auxiliary systems of mechanical manufacture
 - Manufacture by shaving starting
 - Special formation by abrasion, conformed and procedures
 - Control of the characteristics of the mechanized product
 - Administration management and commercialization in the small company
 - Security in the industries of mechanical manufacture. • Relations in the Surroundings of Work.
 - Formation and Labour Direction

Mechanized

- Competences: they are able to
 - To determine the processes of mechanized of unitary pieces
 - To prepare and to program machines and systems to proceed to mechanize
 - To mechanize products by metal cutting procedures
 - To mechanize special products by abrasion, conformed and other special procedures
 - To verify the characteristics of the product
 - To lead the administration, management and commercialization in a small company or factory.

Mechanized

- Jobs they can apply
 - Trainer of machines (automatic winches, transfers, flexible systems, line of metal sheet processing).
 - Turner.
 - Fresador.
 - Mandrinador.
 - Line driver by mechanized, conformed and special processes.
 - Patternmakers.
 - Programmer of machine-tool CNC in plant.
 - Moldista Matricero
- Consider revision of translating
 - Preparador de máquinas (tornos automáticos, transfers, sistemas flexibles línea de procesado de chapa).
 - Tornero.
 - Fresador.
 - Mandrinador.
 - Conductor de línea por arranque de viruta, conformado y especiales.
 - Modelistas.
 - Programador de máquina-herramienta CNC en planta.
 - Matricero moldista

Production by mechanized

- Contents (2000 h)
 - Definition of processes of mechanized, conformed and assembly
 - Programming of machines of numerical control for mechanical manufacture
 - Programming of automatic systems of mechanical manufacture
 - Programming of the production in mechanical manufacture
 - Execution of processes of mechanized, conformed and assembly
 - Quality control in mechanical manufacture
 - Materials used in mechanical manufacture
 - Plans of security in industries of mechanical manufacture
 - Relations in the Surroundings of Work.
 - Formation on Labour Orientation

Production by mechanized

- Competences: they are able to
 - To develop operational processes of mechanized, conformed and assembly
 - To develop the programming of systems automated of mechanized, conformed and assembly
 - To program and to control the production in mechanical manufacturing
 - To manage and to supervise the production in mechanical manufacturing
 - To control the quality in mechanical manufacturing

Production by mechanized

- Jobs they can apply
 - Technician in processes of mechanized by mechanized and/or special mechanized (electro erosion, ultrasounds, shape,...)
 - Technician in processes of conformed (forges, stamping, first transformations,...)
 - Technician in assembly
 - Technician in planning of the production.
 - Technician in methods and time control.
 - Technician in quality control
 - Technician of programming of machines and systems.
 - Head of factory
- Consider revision on translating
 - Técnico en procesos de mecanizado por arranque de viruta y/o mecanizados especiales (electroerosión, ultrasonidos, plasma,...).
 - Técnico en procesos de conformado (forja, estampación, primeras transformaciones,...).
 - Técnico en montaje.
 - Técnico en planificación de la producción.
 - Técnico en métodos y tiempos.
 - Técnico en control de calidad.
 - Técnico de programación de máquinas y sistemas.
 - Jefe de taller

Thank you very much for your attention

If you want to know more, you can contact:

Judit Coll

coll@cequip.net

+34 93 401 19 64

Isabel Hernández

ihernandez@upm.org

+34 93 318 08 28



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