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EUROPASS DIPLOMA SUPPLEMENT

TITLE OF THE DIPLOMA (ES)

Técnico Superior en Programación de la Producción en Moldeo de Metales y Polímeros

TRANSLATED TITLE OF THE DIPLOMA (EN) (1)

Higher Technician in Production Scheduling of Metals and Polymers Moulding

(1) This translation has no legal status.

DIPLOMA DESCRIPTION

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

Planning, scheduling and controlling the manufacture by foundry, powder metallurgy, plastics and composite materials transformation, based on the process documentation and the specifications of the products to be manufactured, ensuring the management and products quality, as well as the maintenance of systems of occupational safety and environmental protection.

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

"Graphical Interpretation"

The holder:

- Determines the shape and the dimensions of the products to be manufactured, interpreting the symbols represented on the plans.
- Identifies the tolerances of shapes, dimensions and other characteristics of the products to be manufactured, analyzing and interpreting the technical information comprised in the manufacturing drawings.
- Draws equipment and tool sketches to implement the processes, defining the appropriate construction solutions.
- Interprets automation schemes of machinery and equipment, identifying the elements represented in pneumatic, hydraulic, electric, programmable and non-programmable installations.

"Characterization of Materials"

The holder:

- Characterizes the influence of raw materials and polymeric nature processes in obtaining moulding parts, relating their properties to transformation processes parameters.
- Determines the influence of raw materials and metallic processes in obtaining moulded parts, relating their properties to the parameters of the casting process.
- Defines the influence of raw materials and ceramic processes in obtaining ceramic moulded parts, relating their properties to the transformation processes parameters.
- Identifies the influence of raw materials and processes of composite materials in obtaining moulded parts, relating their properties to the transformation processes parameters.

"Closed Moulding"

The holder:

- Determines the resources required to obtain closed moulding products, analyzing the operation of machinery, moulds, tools, facilities and auxiliary services.
- Defines manufacturing processes with closed moulds, relating the sequence and variables of the process to the requirements of the products to be manufactured.
- Determines the cost of manufacturing parts by a closed moulding process, calculating the costs of the different manufacturing solutions.
- Performs manufacturing processes with closed mould under conditions of safety, quality and environmental protection, interpreting and applying the process sheet.
- Complies with the rules on labour risk prevention and environmental protection, identifying the associated risks, the measures and the equipment to prevent them.

"Open Moulding"

The holder:

- Determines the resources required to obtain open moulding products, analyzing the operation of machinery, moulds, tools, facilities and auxiliary services.
- Defines manufacturing processes with open moulds, relating the sequence and variables of the process to the requirements of the products to be manufactured.
- Determines the cost of manufacturing parts by an open moulding process, calculating the costs of the different manufacturing solutions.

– Performs manufacturing processes with open mould under conditions of safety, quality and environmental protection, interpreting and applying the process sheet.
– Complies with the rules on labour risk prevention and environmental protection, identifying the associated risks, the measures and the equipment to prevent them.

"Scheduling Automatic Mechanical Manufacture"

The holder:

– Identifies the components of an automated installation of mechanical manufacture, analyzing its performance and its location within the production systems.
– Prepares the component programmes of an automated system, analyzing and applying different programming types.
– Organizes and coordinates the components of an automated installation, selecting and applying the required techniques procedures.
– Controls and monitors automated systems, analyzing the process and adjusting the parameters of the system variables.

"Production Scheduling"

The holder:

– Prepares manufacturing programmes, analyzing the productive capacity of the facilities, their possible adaptations and their supply needs.
– Prepares the maintenance programmes and defines the parameters of control over it, linking media requirements and production needs.
– Manages the documentation used in the production scheduling by defining and implementing a plan of organization and information processing.
– Controls the production, relating techniques of control with production requirements.
– Determines the supply plan of the necessary raw materials and components, analyzing the procurement models.
– Manages the warehouse, relating the storage needs, depending on the production requirements, to storage, handling and internal distribution processes.

"Quality Management, Rules on Labour Risk Prevention and Environmental Protection"

The holder:

– Defines actions to facilitate the implementation and maintenance of quality assurance systems, , interpreting their basic concepts and factors..
– Defines actions to facilitate the implementation and maintenance of business excellence models, interpreting their basic concepts and factors.
– Defines actions to facilitate the implementation and maintenance of labour risk prevention systems, interpreting their basic concepts and factors.
– Defines actions to facilitate the implementation and maintenance of environmental management systems, interpreting their basic concepts and factors.
– Recognizes the main sources of pollution that can be generated within the activity of mechanical manufacturing companies, describing the pollutants effects on the environment.

"Verification of Shaped Products"

The holder:

– Determines control guidelines, relating dimensional characteristics to the measurement frequency and the specific measuring instruments.
– Plans the control of the manufactured product characteristics, relating the dimensional measurement equipment and mechanical testing machines to the required specifications.
– Plans the control of the manufactured product characteristics, relating the testing equipment and machines to physical and chemical specifications.
– Determines the assurance of product quality and process stability, analyzing statistical product control and process data.

"Project on Production Scheduling of Metals and Polymers Moulding"

The holder:

– Identifies the needs of the production sector, relating them to the relevant 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 the associated documentation.
– Defines the monitoring and control procedures for the project implementation, justifying the variables and instruments selection.

"Professional Training and Guidance"

The holder:

– Selects job opportunities, identifying the different labour integration possibilities, and the lifelong learning alternatives of.
– 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 on 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 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 within a small enterprise, identifying the responsibilities of all the agents involved.
– Applies protection and prevention measures, analysing the risk situations within the work environment of the Higher Technician in Production Scheduling of Metals and Polymers Moulding.

"Business and Entrepreneurial Initiative"

The holder:

– Recognizes the skills related to the entrepreneurial initiative, analysing the requirements derived from 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 the implementation of a company, choosing the legal structure and identifying the associated legal obligations.
– Carries out the 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 structure and organization, relating it to the production and the marketing of the obtained products.
– Applies ethical and work habits in the development of his/her profession, according to the job characteristics and the procedures established by the company.
– Determines moulding transformation processes of metals and polymers, setting the sequence of the process variables based on the requirements of the product to be manufactured.
– Prepares and tunes up the machinery, the equipment, the fixtures and the tools involved in the transformation process by moulding of a lot of pieces, applying the required techniques and procedures.
– Measures dimensions and verifies the properties of the manufactured parts, following the instructions given on the control plan.

RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA

The Higher Technician in Production Scheduling of Metals and Polymers Moulding works in sectors related to manufacturing foundry, powder metallurgy and processing of polymers and composites, related to metal processing subsectors and polymers framed in the industrial sector, in the functions of planning the production process.

The most relevant occupations or jobs are the following:

- Process technician.
- Manufacturing technician.
- Production scheduler.
- Provision technician.
- Laboratory technician of polymer processing control.
- Scheduler of automated systems.
- Responsible for production (moulding, extrusion, calendering, finishing, and other treatments).
- Responsible for machine operators for the production of rubber and plastic materials.
- Responsible for moulders.
- Responsible for installations smelting processes
- Responsible for powder metallurgy installations.
- Technician in development of products and moulds.
- Responsible for packaging.
- Responsible for vulcanization.
- Section manager of tire manufacturing in general
- Inspector of tire manufacturing verifiers.
- Responsible for tire retreading section.
- Responsible for finishing.
- Responsible for previous and mixing operations.

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: 2.000 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 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 882/2011, of 24 June, according to which the diploma of Higher Technician in Production Scheduling of Metals and Polymers Moulding 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
Interpretation of Graphics	7
Characterization of Materials	7
Closed Moulding	20
Open Moulding	14
Scheduling Automatic Mechanical Manufacture	9
Production Scheduling	8
Quality Management, Prevention of Occupational Risks and Environmental Protection	9
Verification of Shaped Products	10
Project on Production Scheduling of Metals and Polymers Moulding	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