

PROGRAMME INFORMATION



UNIVERSITY MASTER'S DEGREE IN RESEARCH IN INDUSTRIAL TECHNOLOGY

CÓDIGO 280101

UNED

ETS de
Ingenieros
Industriales

**UNIVERSITY MASTER'S DEGREE
IN RESEARCH IN INDUSTRIAL
TECHNOLOGY**

CÓDIGO 280101

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University Master's Degree in Research in Industrial Technology

INFORMATION IDENTIFYING THE QUALIFICATION

Name and status of awarding institution

Universidad Nacional de Educación a Distancia.

Public university.

Name of qualification and title conferred in original language

Máster Universitario en Investigación en Tecnologías Industriales por la Universidad Nacional de Educación a Distancia.

Status

National validity.

Approved by Accord of the Council of Ministers on January 22nd, 2010.

Main field(s) of study for the qualification

The study is included in the field of Engineering and Architecture.

Language(s) of instruction/examination

The degree is taught in Spanish.

INFORMATION ON THE LEVEL OF THE QUALIFICATION

Level of qualification

Level 3 (Master) in the Spanish Framework of Higher Education (MECES) is equivalent to level 7 of European Qualification Framework (EQF).

Official length of programme

The program of studies is composed of 60 ECTS and 1 year full time.

Access requirements

Industrial Engineering or Bachelor's Degree in Industrial Engineering or related.

INFORMATION ON THE CONTENTS

Mode of study

Distance learning full time.

Programme requirements

The programme of studies is composed of 18 compulsory ECTS, 27 elective ECTS and 15 Master's Dissertation ECTS

Subjects

- Methodology of Technological Research
- Quality Engineering
- Solving Problems in Solid Mechanics: Finite Element Method, Boundary Element Method and Meshless Methods
- Analysis of Metal Forming Processes
- Systems and Methods in Power Electronics
- Analysis and Exploitation of Electrical Systems
- Electrical applications of Renewable Energies
- Adaptive Control Systems
- Industrial Applications of Communications
- Design, Simulation and Optimization of Combined Cycle Gas-Steam Turbine Powerplants
- Safety and Environmental impact of Nuclear Fusion Facilities
- Radioactive Waste Management Technology
- Nonlinear Optimization
- Multi-objective Programming
- Nonlinear Analysis Methods in Engineering
- Convex Optimization in Engineering
- Advanced Analysis of Machine Vibrations
- Biodynamics and Biomaterials
- Advanced Design of Gear Transmissions
- Numerical Simulation of Engineering Flows
- Wind Energy Systems
- Advanced Environmental Engineering
- Technology of Polymer Materials: Processing, Recycling and Environmental Impact
- Computational Methods in Engineering
- Engineering of the Chemical Product
- Thermal applications of renewable energy

- Multi-objective Optimization
- Set-valued Optimization
- Mathematical Modelling and Applications
- Mechanical Behavior Analysis of Machine Elements Using Vibrations
- Advanced Gear Transmissions
- Mechanical Behavior of Biomaterials and Prostheses
- Computational Simulation of Industrial Flows
- Wind Energy
- Engineering of Manufacturing Processes
- Computational Methods in Solid Mechanics and Structures
- Computational Methods in Earthquake Engineering
- Electrical Engineering and Computation
- Operation and Optimization of Electrical Systems Focused on Renewable Energies
- Advanced Educational Technologies for Engineering
- Design and Simulation of Electronic Industrial Electronic Systems and Advanced Processors
- Advanced Control and Optimization of Industrial Processes
- Development of Telematic and Multimedia Systems Applied to Industry
- Analysis, Simulation, Thermodynamic and Thermo-economic Optimization of Thermal Systems
- Design of Accelerator Driven Transmutators of Radioactive Waste
- Radioprotection and Safety in the Design of High Intensity Accelerators for Simulating Fusion-like Material Irradiation Damage
- Safety and Environmental Impact of Experimental Facilities and Conceptual Nucleoelectric Fusion Plants
- Environmental Impact of Hydrogen as an Energy Vector
- Project and Construction Engineering
- Prevention of Risks in Industrial Engineering

Grading scheme

In the Spanish university system, modules/courses are graded on a scale of 0 to 10 points with the following qualitative equivalence:

0-4.9: "suspenso"; 5-6.9: "aprobado"; 7-8.9: "notable"; 9-10: "sobresaliente". A special mention, "Matrícula de Honor" may be granted to up to 5% of the students in a group provided they have got a "sobresaliente". To pass a module/course it is necessary to get at least 5 points.

INFORMATION ON THE FUNCTION OF THE QUALIFICATION

Access to further study

This qualification gives access to Doctoral studies, provided that the student has completed a minimum of 300 ECTS in the overall teachings of Bachelor and Master.

Stated objectives associated with the qualification and professional status (if applicable)

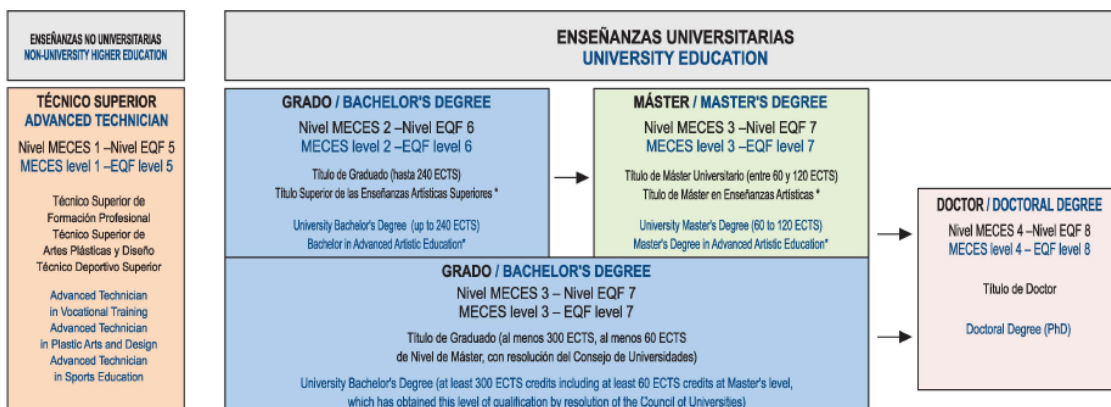
The main aim of this degree is the introduction of research activities on the industrial field, with focus on the environmental impact of studied technologies. Assessment of the costs and returns of the studied technologies. Planning of research activities. Master target: preparation of the students for the doctoral studies in industrial technologies.

The main learning outcomes and competencies acquired are: Introduction to the state-of-the-art in industry related technical research. Fundamentals of mathematics underlying technical analysis. Critical reasoning. Analysis and synthesis of technical and scientific information. Information management skills. Application of computing to simulation.

ADDITIONAL INFORMATION

<https://www.uned.es>

INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM



* Las enseñanzas Artísticas Superiores son Enseñanzas no Universitarias dentro del Sistema Educativo español de Enseñanza Superior

* Advanced Artistic Education is non-university education within the Spanish Higher Education System