

# Postgraduate Diploma Instrumentation and Sensors in Electronic Systems



## Postgraduate Diploma Instrumentation and Sensors in Electronic Systems

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/engineering/postgraduate-diploma/postgraduate-diploma-instrumentation-sensors-electronic-systems](http://www.techtute.com/us/engineering/postgraduate-diploma/postgraduate-diploma-instrumentation-sensors-electronic-systems)

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# 01

# Introduction

Sensors are an essential part of electronic instrumentation, allowing the generation and measurement of electrical signals that can be understood by other operators, achieving an efficient use of these mechanisms and adequate with regard to the needs for which they were created. The specialization of engineers in this field is increasingly in demand, which is why TECH has devised this comprehensive program that offers professionals the best qualification in the market and will open doors to a highly competitive labor market. professionals the best qualification in the market and will open the doors to a highly competitive labor market.





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*By studying this TECH Postgraduate Diploma, you will be up to date on the main advances in instrumentation and sensors in electronic systems, which will be fundamental to position you as one of the best electronic engineers of the moment”*

Sensors are an essential part of electronic instrumentation, allowing the generation and measurement of electrical signals that can be understood by other operators, which undoubtedly allows effective connections between the two devices. Furthermore, the specialization in this field is highly demanded by engineers, since it opens the door to specific job opportunities. For this reason, many professionals, both recent graduates and those with years of experience, decide to continue their studies with specialized postgraduate programs to broaden their qualifications and become the most competitive engineers in the market.

In order to improve their qualification, TECH has created this Postgraduate Diploma in Instrumentation and Sensors in Electronic Systems, which will enable engineers to get up to date on the specifications of these mechanisms, which are essential to achieve the necessary quality in electronic systems. A program designed by experienced professionals that will mark a turning point in the qualification of professionals.

This Postgraduate Diploma analyzes the different types of sensors and actuators found in industrial processes and specifies the types of control systems in order to understand the intervention of an actuator device depending on a physical or chemical variable to be measured. Moreover, specialized knowledge is developed on the current applications of power electronics, specifically devices that allow variation of the waveform of the electrical signal, known as converters, which are present in sectors as varied as domestic, industrial, military or aerospace.

A 100% online program that will allow students to manage their own study time, meaning they are not hindered by fixed schedules or the need to commute to another physical location. They can access all the contents at any time of the day, allowing them to balance their professional and personal life with their academic life.

This **Postgraduate Diploma in Instrumentation and Sensors in Electronic Systems** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ Case studies presented by engineering experts
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Special emphasis on innovative methodologies in Instrumentation and Sensors in Electronic Systems
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*The electronic engineering sector is looking for professionals like you, capable of adapting to the new times with the solvency of a top-level specialist"*



*Improve your professional electronic sensor development skills with this program”*

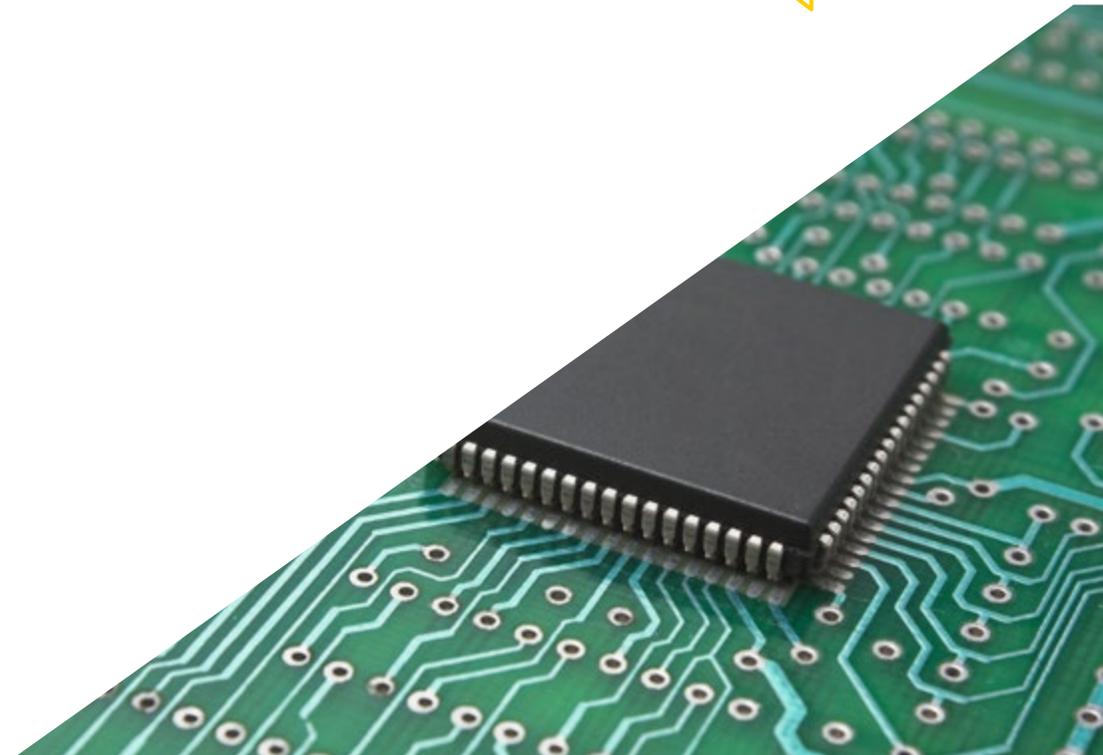
Its teaching staff includes professionals from the field of engineering, who contribute their work experience to this program, as well as renowned specialists from leading companies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow professionals to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive specialization for real situations.

The design of this program focuses on Problem-Based Learning, by means of which students must try to solve the different professional practice situations that arise during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*A cutting-edge teaching methodology to assist students' learning.*

*The online format of this Postgraduate Diploma will give you the opportunity to self-manage your study time.*



# 02

# Objectives

The main objective of this program is to offer engineers a unique academic opportunity to learn how to design, control and repair electronic sensors to measure electrical signals, a fundamental task for those who work with electronic systems. In this way, at the end of the program, students will be able to work with complete fluency and guaranteed success in this field, innovating in a sector that is advancing by giant steps.



“

*Acquire the necessary skills to design  
and program electronic sensors”*



## General Objectives

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- ◆ Analyze technical documentation by examining the characteristics of different types of projects in order to determine the data necessary for their development
- ◆ Identify standardized symbology and plotting techniques in order to analyze drawings and diagrams of automatic systems and installations
- ◆ Identify breakdowns and malfunctions in order to supervise and/or maintain installations and associated equipment
- ◆ Determine quality parameters in the work carried out in order to develop the culture of evaluation and quality, and to be able to assess the quality management procedures
- ◆ Determine the need for power electronic converters in most real-world applications
- ◆ Analyze the different types of converters that can be found, based on their function
- ◆ Design and implement power electronic converters according to the need of use
- ◆ Analyze and simulate the behavior of the most commonly used electronic converters in electronic circuits
- ◆ Determine the characteristics of real type systems and recognize the complexity of programming these types of systems
- ◆ Analyze the different types of communication networks available
- ◆ Assess which type of communications network is the most suitable in certain scenarios





## Specific Objectives

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### Module 1. Instruments and Sensors

- ◆ Determine measuring and control devices according to their functionality
- ◆ Evaluate the different technical characteristics of measurement and control systems
- ◆ Develop and propose measurement and regulation systems
- ◆ Specify the variables that intervene in a process
- ◆ Justify the type of sensor involved in a process according to the physical or chemical parameter to be measured
- ◆ Establish appropriate control system performance requirements in accordance with system requirements
- ◆ Analyze the operation of typical measurement and control systems in industries

### Module 2. Power Electronic Converters

- ◆ Analyze the converter function, classification and characteristic parameters
- ◆ Identify real applications that justify the use of power electronic converters
- ◆ Approach the analysis and study of the main converter circuits: rectifiers, inverters, switched-mode converters, voltage regulators and cycloconverters
- ◆ Analyze the different figures of merit as a measure of quality in a converter system
- ◆ Determine the different control strategies and the improvements provided by each of them
- ◆ Examine the basic structure and components of each of the converter circuits
- ◆ Develop performance requirements for generating specialized knowledge in order to be able to select the appropriate electronic circuit according to the system requirements
- ◆ Propose solutions to the design of power converters

### Module 3. Industrial Communications

- ◆ Establish the basis of real-time systems and their main characteristics in relation to industrial communications
- ◆ Examine the need for distributed systems and their programming
- ◆ Determine the specific characteristics of industrial communications networks
- ◆ Analyze the different solutions for the implementation of a communications network in an industrial environment
- ◆ Gain in-depth knowledge of the OSI communications model and the TCP protocol
- ◆ Develop the different mechanisms to convert this type of networks into reliable networks
- ◆ Address the basic protocols on which the different mechanisms of information transmission in industrial communication networks are based



*A top-level program that will open the doors to a job market full of opportunities”*

# 03

# Course Management

The faculty of this TECH Postgraduate Diploma has developed a highly competitive syllabus, which will enable engineers to further their training in the development of instrumentation and sensors in electronic systems. Faculty members with extensive experience in the field of electronic engineering and teaching, who understand the importance of creating top-notch programs to increase students' skills, opening doors to a job market full of opportunities.





“

*A highly prestigious faculty that will help you enter a booming sector”*

## Management



### **Ms. Casares Andrés, María Gregoria**

- ♦ Associate Professors, Carlos III University of Madrid
- ♦ Degree in IT, Polytechnic University of Madrid
- ♦ Research Sufficiency, Polytechnic University of Madrid
- ♦ Research Sufficiency, Carlos III University of Madrid
- ♦ Evaluator and Creator of OCW courses at Carlos III University of Madrid
- ♦ INTEF courses tutor
- ♦ Support Technician, Ministry of Education Directorate General of Bilingualism and Quality of Education of the Community of Madrid
- ♦ Secondary Education Professor with specialty in IT
- ♦ Associate professor at the Pontificia de Comillas University
- ♦ Postgraduate Diploma in Teaching Unit, Community of Madrid
- ♦ Analyst/ IT Project manager, Banco Urquijo
- ♦ IT Analyst at ERIA

## Professors

### Mr. De la Rosa Prada, Marcos

- ♦ Teacher of Vocational Training Cycles, Ministry of Education of the Community of Madrid
- ♦ Consultant at Santander Technology
- ♦ New Technologies Agent in Badajoz
- ♦ Author and content editor at CIDEAD (General Secretariat for Vocational Training - Ministry of Education and Vocational Training)
- ♦ Telecommunications Engineer from the University of Extremadura
- ♦ Scrum Foundation Expert Certificate by EuropeanScrum.org
- ♦ Certificate in Pedagogical Aptitude, University of Extremadura

### Mr. Jara Ivars, Luis

- ♦ Industrial Engineer -Sliding Ingenieros S.L.
- ♦ Secondary Teacher of Electrotechnical and Automatic Systems Community of Madrid
- ♦ Secondary School Teacher Electronic Equipment Community of Madrid
- ♦ Secondary school Physics and Chemistry teacher
- ♦ Degree in Physical Sciences at UNED, Industrial Engineer UNED
- ♦ Master's Degree in Astronomy and Astrophysics, International University of Valencia
- ♦ Master's Degree in Occupational Risk Prevention, UNED
- ♦ Master's Degree in Teacher Training

### Ms. Escandel Varela, Lorena

- ♦ Research Support Technician at the project as Learning from: "System for the provision and consumption of HD multimedia content in means of collective passenger transport based on LiFi technology for data transmission". at the Carlos University of Madrid
- ♦ Specialist in Computer Science, at Emprestur, Ministry of Tourism, Cuba
- ♦ Specialist in Computer Science at UNE, Empresa Eléctrica, Cuba
- ♦ IT and Communications Specialist at Almacenes Universales S.A., Cuba
- ♦ Radiocommunications Specialist at Santa Clara Air Base, Cuba
- ♦ Telecommunications and Electronics Engineering at Universidad Central "Marta Abreu" de las Villas, Santa Clara, Cuba
- ♦ Master's Degree in Political and Electoral Analysis from the Carlos III University, Madrid: Leganés Campus, Madrid
- ♦ PhD student in Electrical, Electronic and Automation Engineering, Department of Electronic Technology. Carlos III University of Madrid: Campus of Leganés

# 04

## Structure and Content

The faculty of this Postgraduate Diploma has selected the most relevant information on instrumentation and sensors in electronic systems, which will give engineers the opportunity to become true specialists in the creation of this type of machinery, which is essential for the measurement of electrical signals. The syllabus is organized in three modules and will provide professionals with the keys in order to specialize in this field.



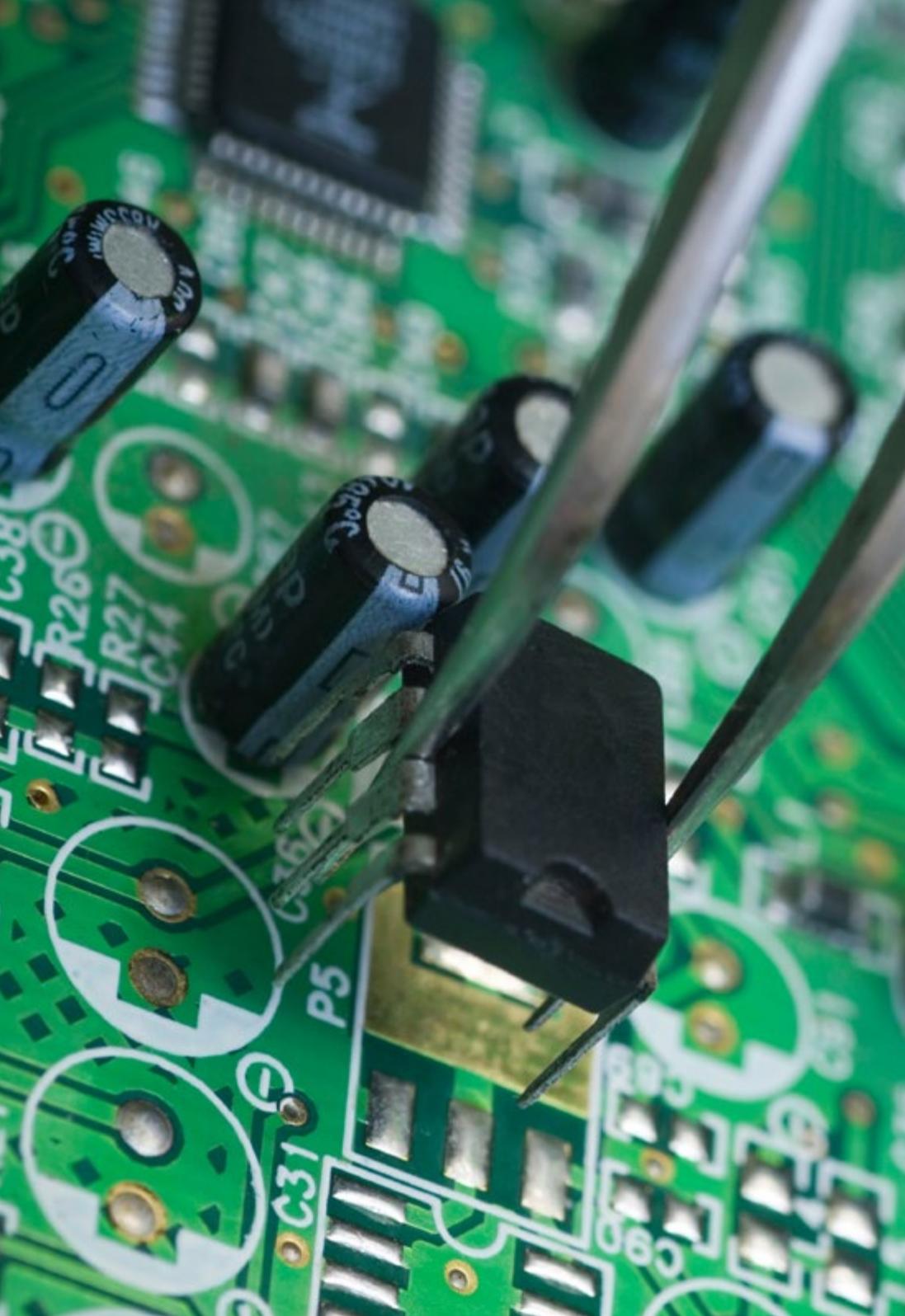


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*A well-structured syllabus that will guide you through the latest concepts in instrumentation and electronic sensors. You only have to bring your enthusiasm to study”*

## Module 1. Instruments and Sensors

- 1.1. Measurement
  - 1.1.1. Measurement and Control Characteristics
    - 1.1.1.1. Accuracy
    - 1.1.1.2. Loyalty
    - 1.1.1.3. Repeatability
    - 1.1.1.4. Reproducibility
    - 1.1.1.5. Derivatives
    - 1.1.1.6. Linearity
    - 1.1.1.7. Hysteresis
    - 1.1.1.8. Resolution
    - 1.1.1.9. Scope
    - 1.1.1.10. Errors
  - 1.1.2. Classification of Instruments
    - 1.1.2.1. According to its Functionality
    - 1.1.2.2. According to the Variable to Control
- 1.2. Regulation
  - 1.2.1. Regulatory Systems
    - 1.2.1.1. Open Loop Systems
    - 1.2.1.2. Closed Loop Systems
  - 1.2.2. Types of Industrial Processes
    - 1.2.2.1. Continuous Processes
    - 1.2.2.2. Discrete Processes
- 1.3. Caudal Sensors
  - 1.3.1. Flow Rate
  - 1.3.2. Units Used for Caudal Measurement
  - 1.3.3. Types of Caudal Sensors
    - 1.3.3.1. Volume Flow Measurement
    - 1.3.3.2. Flow Measurement by Mass
- 1.4. Pressure Sensors
  - 1.4.1. Pressure
  - 1.4.2. Units Used for Pressure Measurement
  - 1.4.3. Types of Pressure Sensors
    - 1.4.3.1. Pressure Measurement via Mechanical Elements
    - 1.4.3.2. Pressure Measurement via Electromechanical Elements
    - 1.4.3.3. Pressure Measurement via Electronic Elements
- 1.5. Temperature Sensors
  - 1.5.1. Temperature
  - 1.5.2. Units Used for Temperature Measurement
  - 1.5.3. Types of Temperature Sensors
    - 1.5.3.1. Bimetallic Thermometer
    - 1.5.3.2. Glass Thermometer
    - 1.5.3.3. Resistance Thermometer
    - 1.5.3.4. Thermistors
    - 1.5.3.5. Thermocouples
    - 1.5.3.6. Radiation Pyrometers
- 1.6. Level Sensors
  - 1.6.1. Liquids and Solids Level
  - 1.6.2. Units Used for Temperature Measurement
  - 1.6.3. Types of Level Sensors
    - 1.6.3.1. Liquid Level Gauges
    - 1.6.3.2. Solid Level Gauges
- 1.7. Sensors for Other Physical and Chemical Variables
  - 1.7.1. Sensors for Other Physical Variables
    - 1.7.1.1. Weight Sensors
    - 1.7.1.2. Speed Sensors
    - 1.7.1.3. Density Sensors
    - 1.7.1.4. Humidity Sensors
    - 1.7.1.5. Flame Sensors
    - 1.7.1.6. Solar Radiation Sensors
  - 1.7.2. Sensors for Other Chemical Variables
    - 1.7.2.1. Conduction Sensors
    - 1.7.2.2. pH Sensors
    - 1.7.2.3. Gas Concentration Sensors



- 1.8. Actuators
  - 1.8.1. Actuators
  - 1.8.2. Engines
  - 1.8.3. Servo-Valves
- 1.9. Automatic Control
  - 1.9.1. Automatic Regulation
  - 1.9.2. Types of Regulators
    - 1.9.2.1. Two-Step Controller
    - 1.9.2.2. Provider Controller
    - 1.9.2.3. Differential Controller
    - 1.9.2.4. Proportional-Differential Controller
    - 1.9.2.5. Integral Controller
    - 1.9.2.6. Proportional-Integral Controller
    - 1.9.2.7. Proportional-Integral-Differential Controller
    - 1.9.2.8. Digital Electronic Controller
- 1.10. Control Applications in Industry
  - 1.10.1. Selection Criteria of a Control System
  - 1.10.2. Examples of Typical Controls in Industry
    - 1.10.2.1. Ovens
    - 1.10.2.2. Dryer
    - 1.10.2.3. Combustion Control
    - 1.10.2.4. Level Control
    - 1.10.2.5. Heat Exchangers
    - 1.10.2.6. Central Nuclear Reactor

## Module 2. Power Electronic Converters

- 2.1. Power Converter
  - 2.1.1. Power Electronics
  - 2.1.2. Applications of Power Electronics
  - 2.1.3. Power Conversion Systems
- 2.2. Converters
  - 2.2.1. Converters
  - 2.2.2. Types of Converters
  - 2.2.3. Characteristic Parameters
  - 2.2.4. Fourier Series
- 2.3. AC/DC Conversion. Single-Phase Uncontrolled Rectifiers
  - 2.3.1. AC/DC Converters
  - 2.3.2. Diode
  - 2.3.3. Uncontrolled Half-Wave Rectifier
  - 2.3.4. Full-Wave Uncontrolled Rectifier
- 2.4. AC/DC Conversion. Single-Phase Controlled Rectifiers
  - 2.4.1. Thyristor
  - 2.4.2. Half-Wave Controlled Rectifier
  - 2.4.3. Full-Wave Controlled Rectifier
- 2.5. Three-Phase Rectifiers
  - 2.5.1. Three-Phase Rectifiers
  - 2.5.2. Three-Phase Controlled Rectifiers
  - 2.5.3. Three-Phase Uncontrolled Rectifiers
- 2.6. DC/AC Conversion. Single-Phase Inverters
  - 2.6.1. DC/AC Converters
  - 2.6.2. Single-Phase Square Wave Controlled Inverters
  - 2.6.3. Single-Phase Inverters Using Sinusoidal PWM Modulation
- 2.7. DC/AC Conversion. Three-Phase Inverters
  - 2.7.1. Three-Phase Inverters
  - 2.7.2. Three-Phase Square Wave Controlled Inverters
  - 2.7.3. Three-Phase Inverters Using Sinusoidal PWM Modulation

- 2.8. DC/DC Conversion
  - 2.8.1. DC/DC Converters
  - 2.8.2. DC/DC Converters Classification
  - 2.8.3. DC/DC Converters Control
  - 2.8.4. Reducing Converter
- 2.9. DC/DC Conversion. Elevating Converter
  - 2.9.1. Elevating Converter
  - 2.9.2. Reducing-Elevating Converter
  - 2.9.3. Cúk Converter
- 2.10. AC/AC Conversion
  - 2.10.1. AC/AC Converters
  - 2.10.2. AC/AC Converters Classification
  - 2.10.3. Voltage Regulators
  - 2.10.4. Cycloconverters

## Module 3. Industrial Communications

- 3.1. The Systems in Real Time
  - 3.1.1. Classification
  - 3.1.2. Programming
  - 3.1.3. Planning
- 3.2. Communication Networks
  - 3.2.1. Transmission Media
  - 3.2.2. Basic Configurations
  - 3.2.3. CIM Pyramid
  - 3.2.4. Classification
  - 3.2.5. OSI Model
  - 3.2.6. TCP/IP Model
- 3.3. Fieldbuses
  - 3.3.1. Classification
  - 3.3.2. Distributed and Centralized Systems
  - 3.3.3. Distributed Control Systems

- 3.4. BUS
  - 3.4.1. Physical Level
  - 3.4.2. Level of Scope
  - 3.4.3. Error Control
  - 3.4.4. Components
- 3.5. Elements
  - 3.5.1. Physical Level
  - 3.5.2. Level of Scope
  - 3.5.3. Error Control
  - 3.5.4. DeviceNet
  - 3.5.5. ControlNet
- 3.6. Profibus
  - 3.6.1. Physical Level
  - 3.6.2. Level of Scope
  - 3.6.3. Level of Application
  - 3.6.4. Communication Model
  - 3.6.5. Operation System
  - 3.6.6. ProfiNet
- 3.7. Modbus
  - 3.7.1. Physical Media
  - 3.7.2. Access to the Media
  - 3.7.3. Series Transmission Modes
  - 3.7.4. Protocol
  - 3.7.5. TCP Modbus
- 3.8. Industrial Ethernet
  - 3.8.1. ProfiNet
  - 3.8.2. TCP Modbus
  - 3.8.3. Ethernet/IP
  - 3.8.4. EtherCAT
- 3.9. Wireless Communication
  - 3.9.1. 802.11 Networks (Wi-Fi)
  - 3.9.2. 802.15.1 Networks (Bluetooth)
  - 3.9.3. 802.15.4 Networks (ZigBee)
  - 3.9.4. WirelessHART
  - 3.9.5. WiMAX
  - 3.9.6. Mobile Phone-Based Networks
  - 3.9.7. Satellite Communications
- 3.10. IoT in Industrial Environments
  - 3.10.1. The Internet of Things
  - 3.10.2. IoT Device Characteristics
  - 3.10.3. Application of IoT in Industrial Environments
  - 3.10.4. Security Requirements
  - 3.10.5. Communication Protocols: MQTT and CoAP



*Get to know the main industrial communications and learn how to solve problems in these mechanisms”*

05

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





“

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“

*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”*



*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*



*The student will learn to solve complex situations in real business environments through collaborative activities and real cases.*

### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



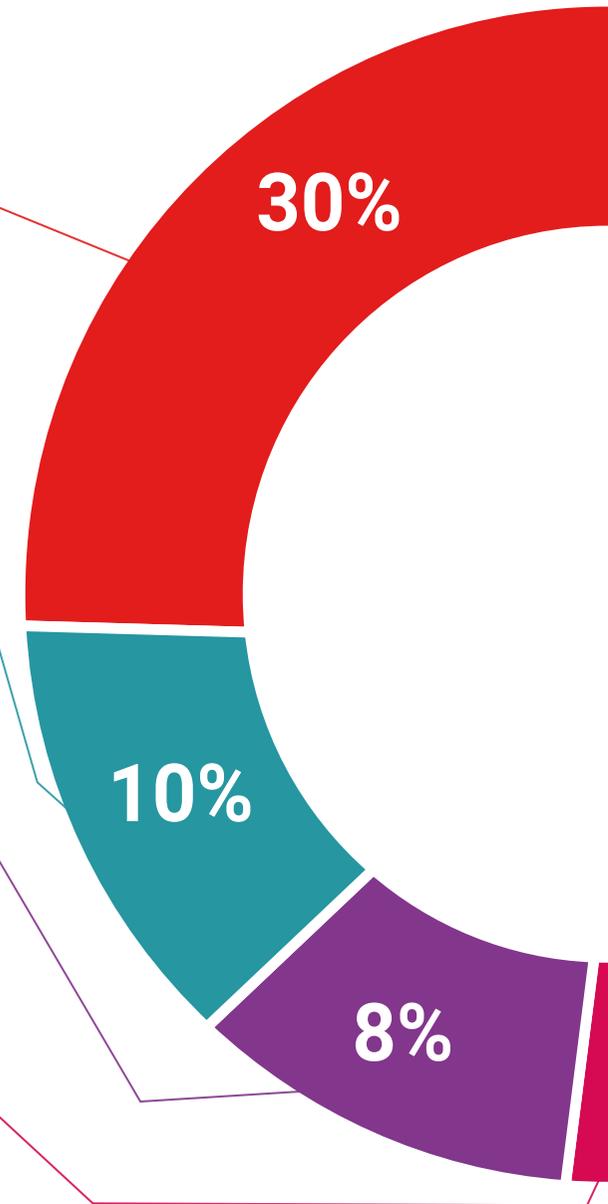
### Practising Skills and Abilities

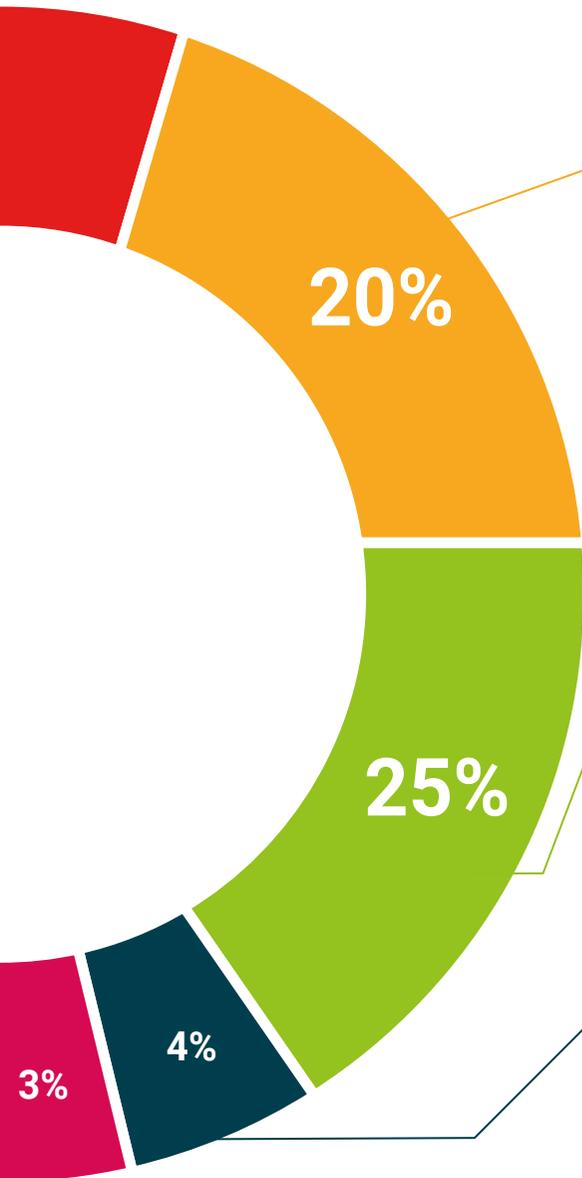
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





#### Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



#### Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



06

# Certificate

The Postgraduate Diploma in Instrumentation and Sensors in Electronic Systems guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.



“

*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This program will allow you to obtain your **Postgraduate Diploma in Instrumentation and Sensors in Electronic Systems** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

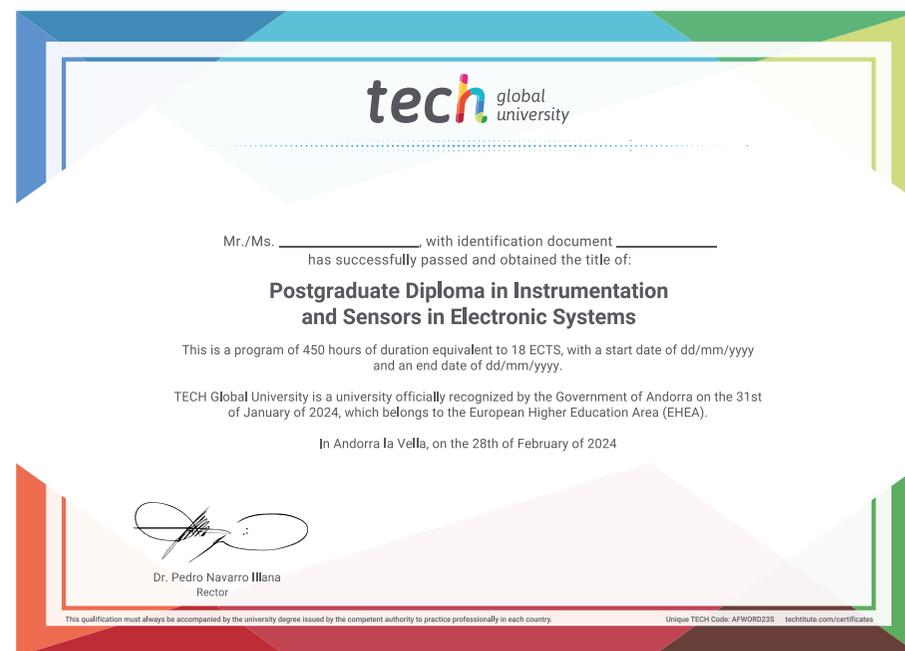
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Instrumentation and Sensors in Electronic Systems**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

**tech** global university

personalized service innovation

knowledge present  
Instrumentation and Sensors  
in Electronic Systems

online training

development language

virtual classroom

## Postgraduate Diploma Instrumentation and Sensors in Electronic Systems

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Diploma Instrumentation and Sensors in Electronic Systems

