

# Postgraduate Certificate

## Pollution and Water and Waste Management in Organizations





## Postgraduate Certificate Pollution and Water and Waste Management in Organizations

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: [www.techtute.com/us/engineering/postgraduate-certificate/pollution-water-waste-management-organizations](http://www.techtute.com/us/engineering/postgraduate-certificate/pollution-water-waste-management-organizations)

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# 01

# Introduction

This program is a comprehensive analysis of the most important aspects of water management and pollution. The different stages and characteristics of the water cycle and the integral water cycle, as well as the classification of wastewater, will be discussed in depth. A comprehensive course that will also cover typical water treatment plant layouts: desalination and/or potabilization and purification.



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*Acquire the skills required to intervene professionally in the aspects derived from water cycles and wastewater treatment with this high-level Postgraduate Certificate"*

This course will address the regulatory framework of the water sector, establishing the regulatory hierarchy, the European Water Charter and the guidelines of a sanctioning dossier. As an example, the current Bylaw on Management and Efficient Use in the city of Madrid, an example of water regulation and control, will be analyzed.

The uses and demand of water, as well as the costs and energy derived from its integral cycle and its heating in DHW generation, will be accurately analyzed. Within the hydro-efficiency management, measures for water management and efficient water use will be analyzed and developed, including the various water efficiency techniques, from plumbing devices at terminal points of sanitary equipment to other techniques for rainwater harvesting.

Furthermore, the processes associated with waste management will be studied in depth, establishing the associated regulatory framework and management strategies. The main techniques for energy recovery and waste recovery will be analyzed.

The innovative ZERO-WASTE initiative will be discussed in detail, where under the objective of the circular economy model, waste management will be redesigned, enhancing waste prevention and valuation actions in order to reduce the raw materials extracted. During the module, the guidelines and actions that an organization can apply in terms of Zero Waste will be analyzed.

By completing and passing the evaluations of this program, the student will obtain a solid knowledge of the rules and regulations to be applied in relation to environmental and energy management in organizations. A complete, high-intensity program, which will allow incorporating into practice the most updated knowledge in this field of work. A highly interesting subject due to its current relevance and the mandatory integration of the standards that will be studied in the Postgraduate Certificate.

With an approach focused on efficiency, this Postgraduate Certificate has been created to allow students to optimize their efforts and achieve the best learning results in the shortest possible time. Additionally, as it is a 100% online program, the student is not constrained by fixed timetables or the need to move to another physical location, but can access the contents at any time of the day, balancing their professional or personal life with their academic life.

This **Postgraduate Certificate in Pollution and Water and Waste Management in Organizations** contains the most complete and up-to-date educational program on the market. The most important features of the specialization are:

- ◆ Practical case studies presented by 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
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Access to content from any fixed or portable device with an Internet connection.



*An intensive and highly effective Postgraduate Certificate that will allow professionals to make a qualitative leap in their professional practice in the environmental and energy management sector"*

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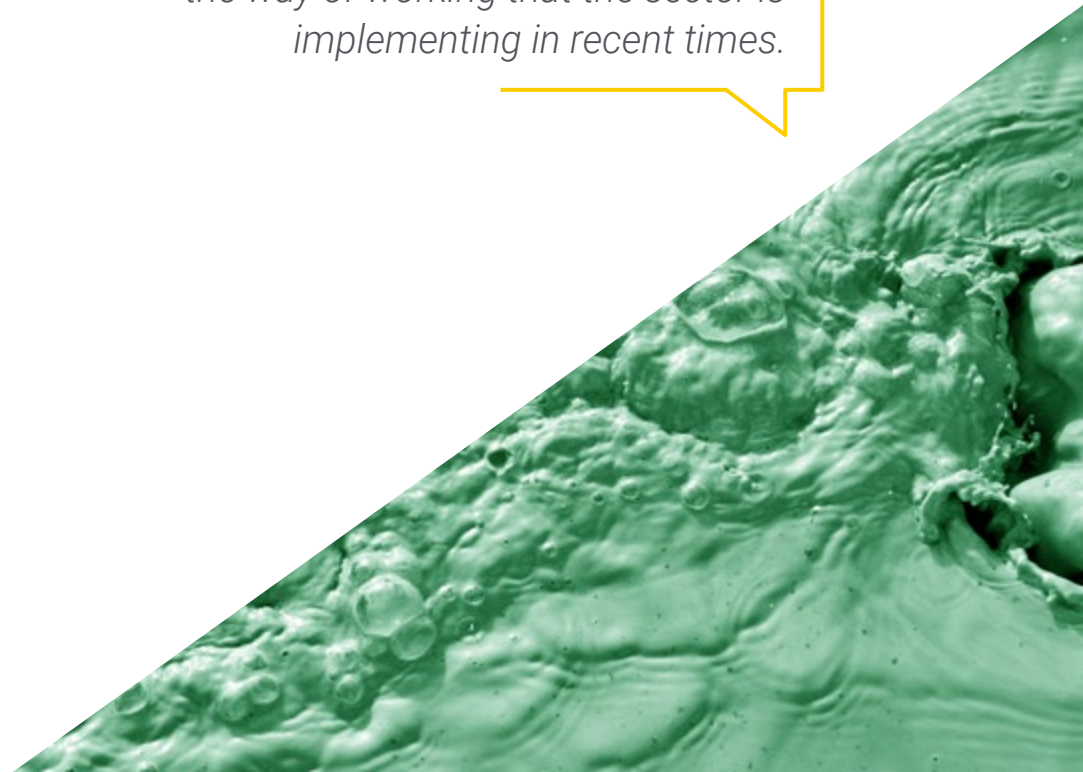
*With comprehensive and up-to-date teaching material and the best audiovisual systems on the educational market, to provide you with an immersive learning experience.*

Supported by excellent multimedia content, developed with the latest educational technology, this Postgraduate Certificate will provide the professional with situated and contextual learning, i.e., study in a simulated environment that will provide immersive learning programmed to train in real situations.

This program is designed around Problem Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

*A 100% online Postgraduate Certificate that will allow you to combine your studies with your professional work with maximum organizational flexibility.*

*With a broad and innovative look at the way of working that the sector is implementing in recent times.*



# 02

# Objectives

The general objective of this Postgraduate Certificate is to promote the professional's capacity to act in this field so that they can incorporate the main advances in this field of work and intervention.





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*The objective of this program is to give you the most comprehensive and up-to-date knowledge on all aspects involved in Water and Waste management in organizations”*



## General Objectives

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- ♦ In-depth breakdown of water and waste management to enable the learner to plan management plans and operational improvements
- ♦ Gain an in-depth understanding of the applicable legislation and regulatory framework for each of the program's topics

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*Professional growth that will give you the boost you've been looking for"*





## Specific Objectives

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- ◆ Gain an in-depth understanding of water management and treatment processes
- ◆ Characterize wastewater by composition
- ◆ Analyze the current water regulatory framework
- ◆ Identify and develop strategies for efficient water use and management
- ◆ Acquire in-depth knowledge of solid waste management
- ◆ Analyze the waste regulatory framework
- ◆ Classify waste according to the source
- ◆ Determine the energy valuation of waste

03

# Course Management

A multidisciplinary teaching staff will offer the most up-to-date and comprehensive knowledge in this field, accompanying the professional during the learning process and making available their experience and real vision of the profession. A unique opportunity to learn directly from experts in this field of work.



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*You will learn from experts in this sector, who will provide you with a specific and direct vision of the reality of this field of work"*

## Management



### Mr. Abreu Acosta, Guzmán

- ◆ Technician in the area of Territorial Planning and Management at Gestión y Planeamiento Territorial y Medioambiental de Canarias S.A.
- ◆ Degree in Law
- ◆ Occupational Health and Safety Auditor, Specialization in OSHAS 18001
- ◆ Degree in Environmental Sciences. UNIVERSITY OF HUELVA
- ◆ Lawyer in his own law firm, specialized in Urban Development and Environmental Law.
- ◆ Freelance consultant specializing in Risk Prevention, Quality and Environment.

## Professors

### Mr. Espinosa, César

- ◆ Head of the Environment Service of Arona City Council
- ◆ Degree in Law
- ◆ Recipient of the IV Felipe González Vicent Prize, Faculty of Law ULL in 1994.
- ◆ UNESCO Global Geopark El Hierro Technical Manager
- ◆ Technical Manager El Hierro World Biosphere Reserve
- ◆ Legal Coordinator of the Department of Rural and Marine Affairs and the Environment of the Island Council of El Hierro (2011-2015).
- ◆ Technical Project Manager

### Mr. Palanco, César

- ◆ Director - Manager INTENSA PROMILAB
- ◆ Industrial Engineer. Mechanical Intensification
- ◆ Industrial Technical Engineer. Industrial Electronics Specialty
- ◆ Construction Manager
- ◆ Installation and testing technician
- ◆ Purchasing Manager TOGOGAS Huelva S.L.
- ◆ Installation technician TOGOGAS Huelva S.L.
- ◆ Commercial Delegate TOGOGAS Huelva S.L.

**Ms. Granell García, Lilia**

- ◆ Manager and Administrator of Recap Canarias Finance
- ◆ Degree in Physical Sciences, specializing in Fundamental Physics.
- ◆ Recap ibérica Financa, ltd.
- ◆ Technical and commercial director SOTEC group
- ◆ Technical and commercial director SEIFERMANN
- ◆ CEO of CERCAN

**Mr. Contreras Acuña, Manuel**

- ◆ Teacher (Secondary, Vocational Training)
- ◆ Doctor in Chemical Sciences Faculty of Experimental Sciences, University of Huelva
- ◆ Master's Degree in Instrumental Techniques in Chemistry, Faculty of Experimental Sciences, University of Huelva.
- ◆ Triple Master's Degree in Occupational Health and Safety, Quality and Environmental Management
- ◆ Interim Substitute Professor Department: Chemistry and Materials Science
- ◆ Contract Researcher Department: Chemistry and Materials Science

**Mr. Toscano, Manuel**

- ◆ Professor of the Department of Earth Sciences of the University of Huelva.
- ◆ Degree in Geological Sciences from the University of Granada.
- ◆ Technical Engineer in Drilling and Mining Prospecting
- ◆ Technical Engineer in Energy, Fuels and Explosives Resources
- ◆ Degree in Mine Exploitation from the University of Huelva
- ◆ Author and/or co-author of more than ninety national and international contributions.
- ◆ National and international projects financed by the Andalusia Council, the Spanish government and the European Union.

**Mr. Bueno Márquez, Pedro**

- ◆ Technician of the Directorate General of Vocational Training, Ministry of Education and Sports
- ◆ Chemical Engineering 1997 - 2002 University of Huelva
- ◆ Postgraduate Course on Renewable Energy Management and Development, Catholic University of Avila
- ◆ Technical Teacher of Vocational Training. Department of Education and Sports
- ◆ Andalusian Energy Agency Technician
- ◆ Project Engineer. Aldesa Engineering & Services
- ◆ Project Engineer. Andalusian Studies Group (Grande S.L.)

# 04

## Structure and Content

This Postgraduate Certificate includes all the necessary contents to achieve a broad and up-to-date knowledge of all the aspects involved in the proper management of pollution and wastewater management by organizations. A program specifically created to provide our students with a continuous process of skills improvement that will boost their real capacity for intervention.







“A stimulating and flexible learning process that will allow you to go through all the knowledge areas you need to intervene as an specialists in this field”

## Module 1. Pollution and Water and Waste Management

- 6.1. Water Management and Pollution
  - 6.1.1. Water Management
  - 6.1.2. Hydrological Water Cycle
  - 6.1.3. Water Diagnostics
  - 6.1.4. Characterization of Wastewater
  - 6.1.5. DWTP, WWTP and WWTW. Definition and Typical Operating Diagrams
- 6.2. Water Regulatory Framework
  - 6.2.1. Legal Framework
  - 6.2.2. Regulatory Hierarchy
  - 6.2.3. European Water Charter
  - 6.2.4. Processing of a Sanctioning File
- 6.3. Distribution of Water Uses and Demand
  - 6.3.1. Demand Management
  - 6.3.2. Types of Uses or Demands
  - 6.3.3. Supply. Supply Ratios
  - 6.3.4. Cost of Water and the Energy Derived from Water Heating for DHW
- 6.4. Measures for Efficient Water Use and Management
  - 6.4.1. 'Ecological' Criteria. Consumption Factor, Ecological Correction Factor and Efficiency Level
  - 6.4.2. From Resolution MAH/1603/2004 to OGUEA
  - 6.4.3. Facility Management and Optimization
- 6.5. Sustainable Water Management Plan
  - 6.5.1. Origin of the Sustainable Water Plan. Purpose and Scope
  - 6.5.2. Parts to Be Included in an ESMP
  - 6.5.3. Organization and Programming
  - 6.5.4. Implementation of the ESMP
  - 6.5.5. Checks and Corrective Actions
- 6.6. Solid Waste Management
  - 6.6.1. Residue and By-Product
  - 6.6.2. Types of Waste
  - 6.6.3. Stages of Waste Management





- 6.7. Waste Regulatory Framework
  - 6.7.1. EU Waste Management Strategies
  - 6.7.2. National Waste Management Strategies
  - 6.7.3. Future Waste Management Policy
- 6.8. Municipal and Industrial Solid Waste
  - 6.8.1. MSW Production
  - 6.8.2. MSW Management Systems
  - 6.8.3. Characterization and Classification of Industrial Wastes
  - 6.8.4. Industrial Waste Management Systems
- 6.9. Waste-to-Energy Valuation
  - 6.9.1. Valuation Methods
  - 6.9.2. Feasibility of Valuation
  - 6.9.3. Recovery Techniques
- 6.10. Zero Waste
  - 6.10.1. Zero Waste
  - 6.10.2. Zero Waste Methodology and Requirements
  - 6.10.3. The 5Rs: Reject, Reduce, Reuse, Reincorporate and Recycle



*Advance your skills with the most interesting study systems on the online teaching scene"*

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.





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*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"*

### At TECH we use the Case Method

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

“

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



*We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.*



### **A learning method that is different and innovative.**

This intensive Engineering program at TECH Technological University prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting personal and professional growth, the best way to strive for success, that is why at TECH Technological University you will use Harvard case studies, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.



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

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

The case method is the most widely used learning system by 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 is the first university in the world to combine Harvard University case studies with a 100% online learning system based on repetition, which combines 8 different didactic elements in each lesson.

We enhance Harvard case studies 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 university 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, program 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 the teaching materials are specifically created for the course by specialists who teach on 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 competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



### 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**

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management 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 multimedia content presentation training Exclusive system 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 your goals.



06

# Certificate

The Postgraduate Certificate in Pollution and Water and Waste Management in Organizations guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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*Successfully complete this training program  
and receive your university certificate  
without travel or laborious paperwork”*

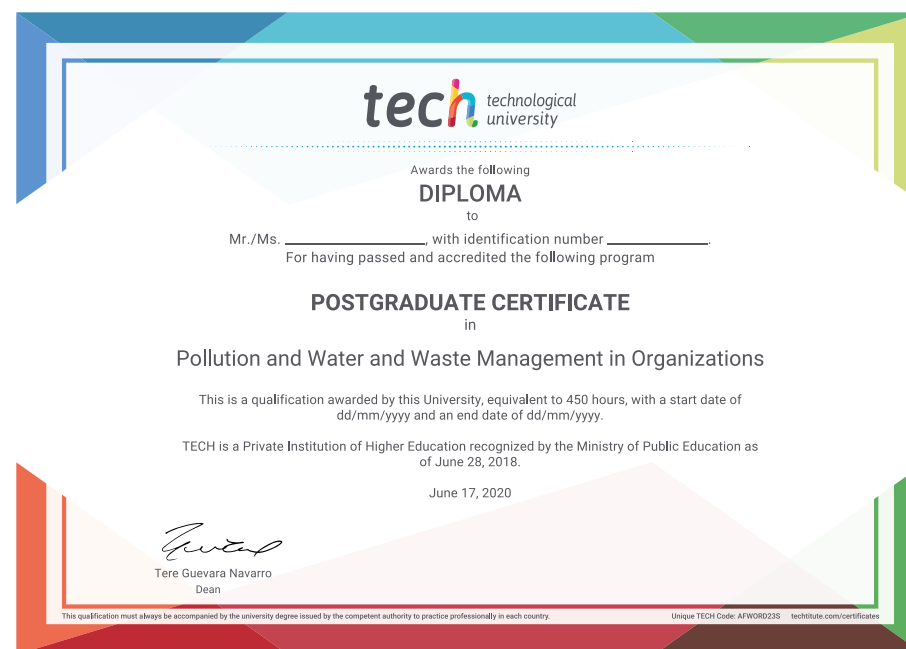
This **Postgraduate Certificate in Pollution and Water and Waste Management in Organizations** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by job markets, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Pollution and Water and Waste Management in Organizations**

Official N° of Hours: **450 h.**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION 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  
personalized service innovation  
knowledge present evaluation  
development language  
virtual classroom



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