

# Postgraduate Certificate Potable Water and Process Water Treatment





## Postgraduate Certificate Potable Water and Process Water Treatment

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

Website: [www.techtute.com/us/engineering/postgraduate-certificate/potable-water-process-water-treatment](http://www.techtute.com/us/engineering/postgraduate-certificate/potable-water-process-water-treatment)

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01

# Introduction

Water needs to be treated in order to be consumed as safely as possible, eliminating any type of residue. With this course we give you the opportunity to train with the best specialists and acquire the necessary skills to develop your profession in the field of water treatment, following the highest quality standards.

Chromium		
Copper		
Cyanide		
1,2-dichloroethane		
Epichlorohydrin		
Fluoride		
Lead		
Mercury		
Nickel		
Nitrate		

“

*A comprehensive and multidisciplinary course that will allow you to excel in your career, in a comfortable and uncomplicated way”*

Water purification is the process by which water is treated so that it can be consumed by humans without presenting any risk to human health. The purpose of this process is to eliminate toxic or undesirable substances that may pose a risk to human health due to chemical, biological or natural contamination.

This course will deal with the types of contamination, drinking water treatment plants (DWTP), their operation and the different processes carried out, with emphasis on those most important in this process, such as flocculation, coagulation, purification and disinfection. In this sense, the equipment used in drinking water purification processes, its application in different industries and the analysis methods used to determine its composition will be studied.

Upon completion of this course, the skills acquired by the student will enable him/her to understand the importance of drinking water treatment plants that process water for use and consumption in daily life and in the industrial sector, as well as to understand the methods of analysis, management and economics involved in the drinking water treatment process for the production of drinking water.

It should be noted that as this is a 100% online course, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Potable Water and Process Water Treatment** contains the most complete and up to date educational program on the market. The most important features of the program include:

- » The development of case studies presented by water treatment experts.
- » The graphic, schematic, and eminently 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 in water treatment
- » 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.



*Don't miss the opportunity to take this course in Potable Water and Process Water Treatment. It's the perfect opportunity to advance your career"*

“ *This course is the best investment you can make in selecting a refresher program to update your knowledge in Potable Water and Process Water Treatment* ”

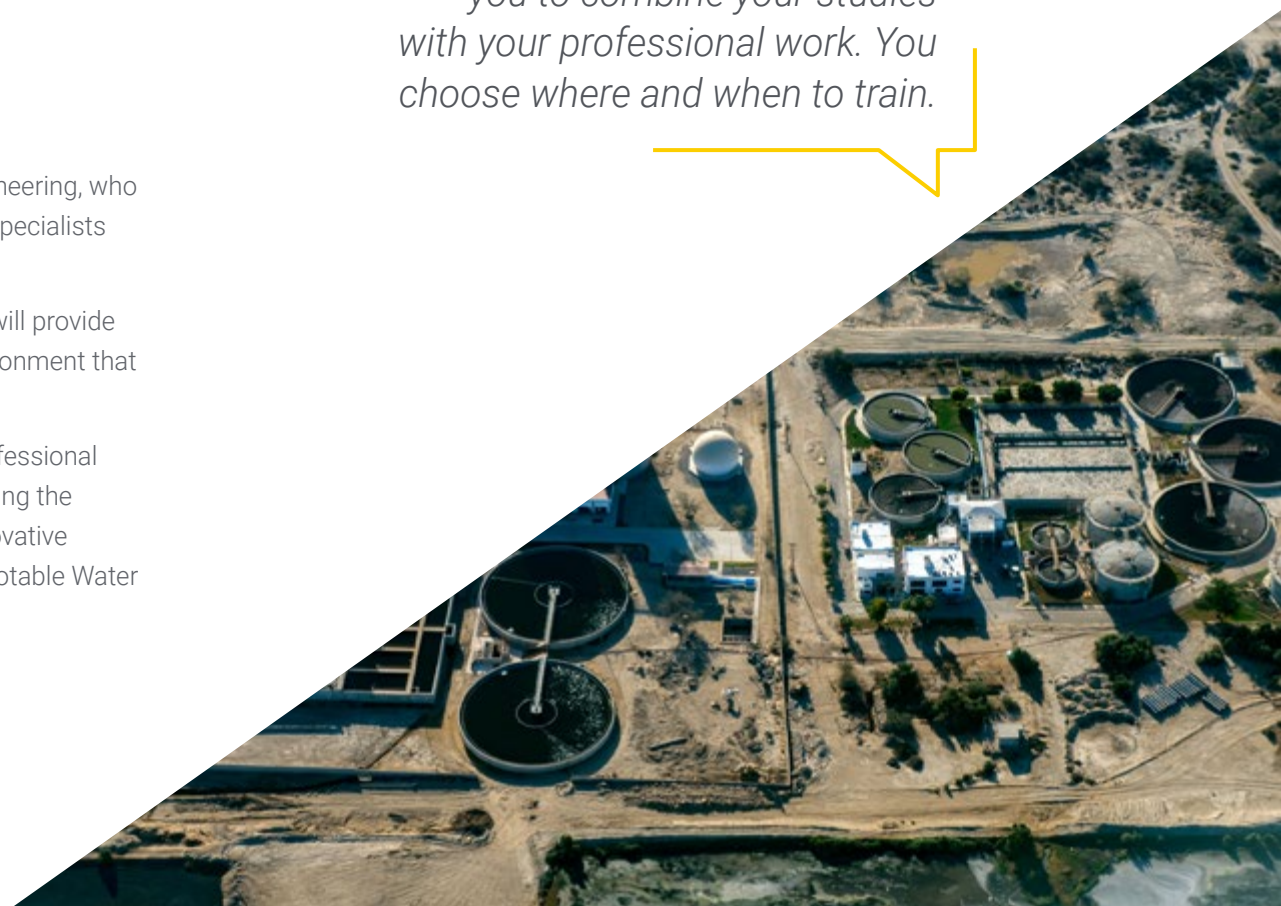
*This training is provided with the best didactic material, which will allow for contextual study to facilitate your learning.*

*This 100% online course will allow you to combine your studies with your professional work. You choose where and when to train.*

Its teaching staff includes professionals belonging to the field of water engineering, who bring to this training the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training 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 in Potable Water and Process Water Treatment.



# 02

# Objectives

The **Postgraduate Certificate in Potable Water and Process Water Treatment** is oriented towards facilitating the performance of the professional to acquire and know the main advances in this field.





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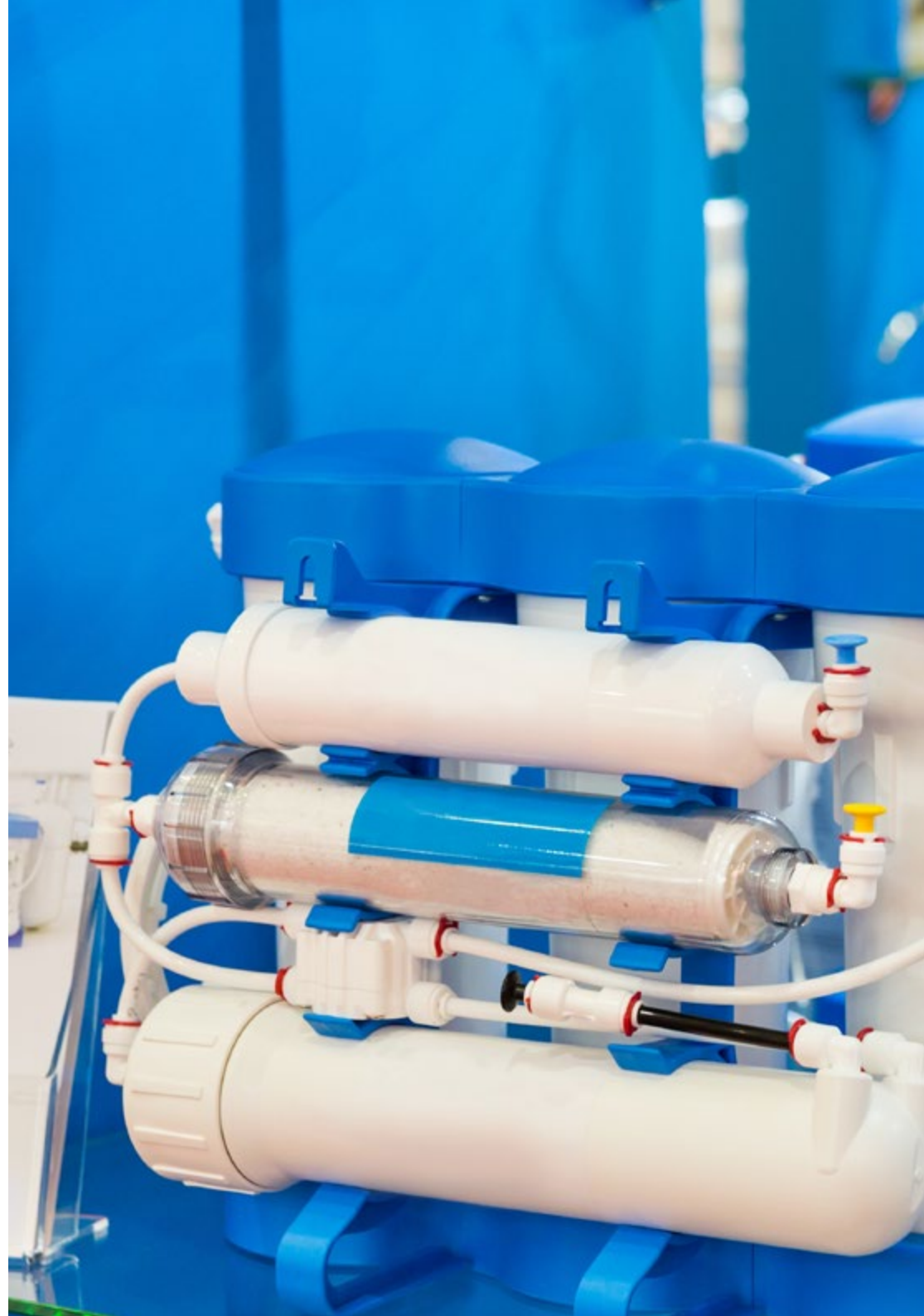
*Our goal is to make you the best professional in your sector. And for this we have the best methodology and content"*



### General Objective

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- » Understand the processes involved in the purification of water for human and industrial consumption, as well as the analytical methods and management that control it and also considering the costs in the drinking water service.





### Specific Objectives

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- » Delve into the types and effects of contamination in drinking water, and then study the processes of drinking water treatment.
- » Comparing the different equipment used in water purification
- » Study the methods of water analysis in order to confirm its drinkability.
- » Understand the role of water in different industrial processes in order to learn how to manage it as a resource.
- » Deepen understanding of the economic considerations and costs of drinking water services in order to establish relevant actions in the face of freshwater scarcity and aligned with the strategies set out in the 2030 Agenda of the Sustainable Development Goals (SDGs).



*Take the step to get up to date on the latest developments in Potable Water and Process Water Treatment"*

03

# Course Management

In our university we have professionals specialized in each area of knowledge, who pour their work experience into our training programs.



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*Our university employs the best professionals in all areas who share their knowledge to help you”*

## International Guest Director

Considered as a true reference in the field of Waste Management for his sustainable initiatives, Frederick Jeske - Schoenhoven is a prestigious Environmental Engineer. In this sense, his philosophy has focused on the optimization of recycling processes, minimization of waste generation and promotion of environmentally friendly practices.

In this way, he has developed his professional work in recognized organizations such as the Treasury Department or the French Ministry of Economy, Finance and Industry, as well as the American World Bank. There, he has been in charge of multiple functions ranging from active portfolio management to the digital transformation of institutions. This has enabled companies to handle innovative technological tools such as Artificial Intelligence, Big Data and even the Internet of Things. As such, institutions have managed to set up advanced automation solutions to optimize their strategic processes considerably. In addition, it has created multiple online platforms that have facilitated the exchange and reuse of materials, thereby fostering a circular economy model.

On the other hand, he has balanced this facet with his work as a researcher. In this regard, he has published numerous articles in specialized journals on topics such as new recycling technologies, the most innovative techniques to improve the efficiency of waste management systems or cutting-edge strategies to ensure a sustainable approach in the industrial production chain. As a result, he has contributed to an increase in recycling rates in several communities.

In addition, he is a strong advocate for education and awareness of the treatment of waste from manufacturing activities. As such, he has spoken at numerous conferences globally to share his solid understanding of this field.



## Mr. Jeske-Schoenhoven, Frederick

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- Director of Strategy and Sustainability at SUEZ in Paris, France
- Strategy and Marketing Director of Dormakaba in Zurich, Switzerland.
- Vice President of Strategy and Business Development at Siemens in Berlin, Germany
- Director of Communications, Siemens Healthineers, Germany
- Executive Director of the World Bank in Washington, United States
- Head of Management at the General Directorate of the Treasury, Government of France
- Advisory Counselor at the International Monetary Fund in Washington, United States
- Financial Consultant at the French Ministry of Economy, Finance and Industry of France
- Master's Degree in Administration and State Policy, École Nationale

- d'Administration, France
- Master's Degree in Management Sciences, HEC Paris
- Master's Degree in Political Science from Sciences Po
- Degree in Environmental Engineering from IEP Paris

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Management



### **Dr. Nieto-Sandoval González-Nicolás, David**

- Industrial Technical Engineer by the E.U.P. of Málaga.
- Industrial Engineer by E.T.S.I.I.
- Master's Degree in Integral Management of Quality, Environment and Health and Safety at Work from the University of the Balearic Islands
- Working for more than 11 years as a consultant in engineering, project management, energy saving and circularity in organizations, he has been working both for companies and on his own account for clients in the private agri-food industry and the institutional sector for more than 11 years.
- Professor certified by EOI in the areas of Industry, Entrepreneurship, Human Resources, Energy, New Technologies and Technological Innovation.
- Trainer of the European INDUCE project
- Trainer in institutions such as COGITI and COIIM.





## Professors

### Mrs. Castillejo de Tena, Nerea

- » Graduate in Chemical Engineering from the University of Castilla-La Mancha.
- » Master's Degree in Environmental Engineering and Management at the Institute of Chemical and Environmental Technology of the University of Castilla - La Mancha.
- » Author of projects such as "Hysys Simulation, Optimization and Energy Analysis in the Waste Water Treatment Unit of the Urea Plant (PAR)" at Fertiberia Puertollano.
- » Co-author of "Methodology for calculating energy efficiency in waste to energy recovery facilities"
- » Member of ACMIQ

### Dr. Nieto-Sandoval González-Nicolás, David

- » Industrial Technical Engineer by the E.U.P. of Málaga.
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04

# Structure and Content

The structure of the contents has been designed by the best professionals in the water engineering sector, with extensive experience and recognized prestige in the profession.





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*We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too”*

## Module 1. Potable Water and Process Water Treatment

- 1.1. The Water Cycle
  - 1.1.1. The Hydrological Water Cycle
  - 1.1.2. Drinking Water Contamination
    - 1.1.2.1. Chemical Contamination
    - 1.1.2.2. Biological Contamination
  - 1.1.3. Effects of Drinking Contaminated Drinking Water
- 6.2. Drinking Water Treatment Plants (DWTP)
  - 1.2.1. The Water Purification Process
  - 1.2.2. Diagram of a DWTP. Stages and Processes
  - 1.2.3. Functional Calculations and Process Design
  - 1.2.4. Environmental Impact Study
- 1.3. Flocculation and Coagulation in DWTPs
  - 1.3.1. Flocculation and Coagulation
  - 1.3.2. Types of Flocculants and Coagulants
  - 1.3.3. Mixing Plant Design
  - 1.3.4. Parameters and Control Strategies
- 1.4. Chlorine-derived Treatments.
  - 1.4.1. Chlorine Treatment Residual Products
  - 1.4.2. Disinfection Products
  - 1.4.3. Chlorine Application Points in DWTP
  - 1.4.4. Other Forms of Disinfection
- 1.5. Water Purification Equipment
  - 1.5.1. Demineralization Equipment
  - 1.5.2. Reverse Osmosis Equipment
  - 1.5.3. Decalcification Equipment
  - 1.5.4. Filtration Equipment
- 1.6. Desalination of water
  - 1.6.1. Types of Desalination
  - 1.6.2. Desalination Method Selection
  - 1.6.3. Design of a Desalination Plant
  - 1.6.4. Economic Study
- 1.7. Methods of Analysis of Drinking Water and Wastewater
  - 1.7.1. Sample Collection
  - 1.7.2. Description of the Methods of Analysis
  - 1.7.3. Frequency of Analysis
  - 1.7.4. Quality Control
  - 1.7.5. Representation of Results
- 1.8. Water in Industrial Processes
  - 1.8.1. Water in the Food Industry
  - 1.8.2. Water in the Pharmaceutical Industry
  - 1.8.3. Water in the Mining Industry
  - 1.8.4. Water in the Agricultural Industry
- 1.9. Drinking Water Management
  - 1.9.1. Infrastructures used for Water Collection
  - 1.9.2. Drinking Water Production Costs
  - 1.9.3. Drinking Water Storage and Distribution Technology
  - 1.9.4. Management Tools for Water Scarcity
- 1.10. Drinking Water Economics
  - 1.10.1. Economic Considerations
  - 1.10.2. Service Costs
  - 1.10.3. Freshwater Scarcity
  - 1.10.4. The 2030 Agenda



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*This training will allow you  
to advance in your career  
comfortably”*

05

# Methodology

This training provides you with a different way of learning. Our methodology is developed through a cyclical learning mode: **Re-learning**.

This teaching system is used in the most prestigious medical schools in the world and has been considered one of the most effective by major publications such as the **New England Journal of Medicine**.





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*Discover Re-learning, 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 you a revolutionary approach to developing your skills and knowledge. Our goal is to strengthen your skills in a changing, competitive, and highly demanding environment.

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*With TECH you can 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 Potable Water and Process Water Treatment course at TECH Technological University is an intensive program that prepares you to face all the challenges in this area, both nationally and internationally. We are committed to promoting your 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 case method has been the most widely used learning system among the world's leading business schools for as long as they have existed. 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.

In a given situation, what would you do? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, you will be presented with multiple real cases. You will have to combine all your knowledge, and research, argue, and defend your ideas and decisions.

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

## Re-learning Methodology

Our University is the first in the world to combine Harvard University case studies with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance Harvard case studies with the best 100% online teaching method: Re-learning.

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

At TECH you will learn with an innovative methodology designed to train the managers of the future. This method, at the forefront of international teaching, is called Re-learning.

Our University is the only one in Spanish-speaking countries licensed to incorporate 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 Spanish online university indicators.



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

With this methodology we have 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, markets, and financial 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.

*Re-learning 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 to success.*

Based on the latest evidence in neuroscience, not only do we know how to organize information, ideas, images, memories, but we also know that the place and context where we have learned something is crucial for us to be able to remember it and store it in the hippocampus, and 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.



In this program you will have access to the best educational material, prepared with you 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 really specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



### Classes

There is scientific evidence on the usefulness of third-party expert observation.

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



### Practising Skills and Abilities

You 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 we live in.



### Additional Reading

Recent articles, consensus documents, international guides. In our virtual library you will have access to everything you need to complete your training.





**Case Studies**

You 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 Latin America.



**Interactive Summaries**

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story"



**Testing & Re-Testing**

We periodically evaluate and re-evaluate your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



06

# Certificate

The Postgraduate Certificate in Potable Water and Process guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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*Include in your training a Postgraduate Certificate in Potable Water and Process Water Treatment: a high added value qualification for any professional in this area"*

This program will allow you to obtain your **Postgraduate Certificate in Potable Water and rocess Water Treatment** 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 Certificate in Potable Water and rocess Water Treatment**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present

online training

development language

classroom

**tech** global  
university

## Postgraduate Certificate

Potable Water and  
Process Water  
Treatment

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
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# Postgraduate Certificate Potable Water and Process Water Treatment

