

# Postgraduate Certificate Water and Sustainability in the Urban Water Cycle



## Postgraduate Certificate Water and Sustainability in the Urban Water Cycle

- » 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/water-sustainability-urban-water-cycle](http://www.techtute.com/us/engineering/postgraduate-certificate/water-sustainability-urban-water-cycle)

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# 01

# Introduction

Ensuring a sustainable water supply is a vital issue for cities around the world. But this can only be possible with the right professionals who have the right competencies that enable them to ensure the water cycle and sustainability in cities of all sizes. Against this backdrop, TECH has designed a complete University program that will enable engineering professionals and provide them with intensive knowledge in this field to help them successfully enter a labor market that increasingly demands more professionals specialized in the field.





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*Don't miss the opportunity to become a prestigious engineer by taking this comprehensive program that will lay the foundation for your professional success”*

This complete Postgraduate Certificate that TECH makes available to professionals aims to boost the career of engineers who want to orient their professional career towards the knowledge of the water service and its sustainability. To this end, intensive specialization has been arranged to provide an in-depth look at the different parts of the urban water cycle, from the catchment process to its conversion into a resource suitable for consumption in a purification plant.

Likewise, this Postgraduate Certificate will address the issue of water and sustainability in the urban water cycle as a transversal aspect that develops the most relevant parts of the integral water cycle related to the current imperative need to raise awareness of all agents involved in the service to maintain responsible management and consumption policies.

This Postgraduate Certificate identifies the real problems in a city in order to determine the best policies in terms of sustainability management. In this sense, it will provide students with the appropriate indicators for optimal monitoring in sustainability management. From the user's point of view, we will describe the good practices that they have to adopt to reduce the average water consumption in cities.

With all this, the student will be able, from a management point of view, to establish, implement and enforce the necessary water sustainability policies to minimize the water footprint in the service.

Finally, the current models of sustainable management in the cities of the future will be discussed in depth.

All of this subject matter, condensed into a Postgraduate Certificate that stands out for being taught 100% online, which will allow the engineer to study as, where and when he wants, with the flexibility of being the one who imposes the deadlines so as not to neglect the rest of their daily activities.

This **Postgraduate Certificate in Water and Sustainability in the Urban Water Cycle** contains the most complete and up-to-date educational program in the market. Its most notable features are:

- ◆ The development of case studies presented by experts in Engineering focused on the Integrated Water Cycle
- ◆ 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 self-assessment can be used to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ 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



*TECH will provide you with a series of first-class contents that will enable you to work successfully in the water cycle sector and its necessary sustainability”*

“

*A prepared engineer is one who possesses transversal competences such as those you will be able to acquire by completing this Postgraduate Certificate”*

The program’s teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious 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 education programmed to learn 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 throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced engineering experts.

*As it is an online program, you will be able to study wherever and whenever you want.*

*If you want to start achieving your professional goals, this Postgraduate Certificate will be a good starting point.*



# 02

# Objectives

This complete Postgraduate Certificate was created with the fundamental objective of providing the engineer with a series of core competencies of vital importance when working in the field of urban water services. To this end, a series of topics have been presented in an orderly and intensive manner that will serve as theoretical support for students to face their daily practice with success in the field of water cycle and sustainability for cities of different sizes. Thus, upon completion of the program, the engineer will be much better prepared and will be able to position himself at the forefront of his sector.







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*TECH designs all its programs with a single objective: to create the best professionals in the sector”*



## General Objectives

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- ◆ Delve into key aspects of urban water utility engineering
- ◆ Leadership of integrated water cycle departments
- ◆ Management of distribution and sanitation departments
- ◆ Management of drinking water treatment, desalination and purification plants
- ◆ Management of the technical office and studies of companies in the sector
- ◆ Mastering a strategic vision of the subject
- ◆ Strong knowledge of coordinating concessions and administrative relations
- ◆ Orient the student's professional activity towards the achievement of the Water objective in the 2030 Agenda
- ◆ Acquiring skills related to the implementation of the urban water system
- ◆ Being able to apply the latest technological innovations to set up an optimal management of the service





## Specific Objectives

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- ◆ Delve into the concept of water footprint to be able to implement reduction policies in an urban water utility
- ◆ Understand the problem of water stress in cities
- ◆ Influence stakeholders related to the integrated water cycle to improve the position of the student's organization
- ◆ Orient the student's professional activity towards the achievement of the Water objective in the 2030 Agenda

“

*This Postgraduate Certificate will be a great step forward for your career”*

# 03

# Course Management

For this Postgraduate Certificate, TECH has brought together a group of renowned professionals in the water sector. In this way, the student will acquire a solid knowledge in the specialty of the Public Water Service. Therefore, this program has a highly qualified team with extensive experience in this area, which will offer the best tools for the student in the development of their skills during the Postgraduate Certificate. In this way, students have the guarantees they need to specialise at an international level in a booming sector that will catapult them to professional success.





“

*Learning side by side with the best professionals in the industry offers you invaluable guarantees”*

## Management



### **Mr. Ortiz Gómez, Manuel**

- ♦ Deputy to the head of the Water Treatment Department at FACSA
- ♦ Head of Maintenance at TAGUS, concessionaire of water and sewage services in Toledo
- ♦ Industrial Engineer at Jaume I University
- ♦ Postgraduate Degree in Innovation in Business Management from the Valencian Institute of Technology
- ♦ Executive MBA from EDEM
- ♦ Author of several papers and presentations at conferences of the Spanish Association of Desalination and Reuse and the Spanish Association of Water Supply and Sanitation



## Professors

### Mr. Sánchez Cabanillas, Marciano

- ◆ Director-Coordinator of the Advanced Course for Laboratory Technicians of Wastewater Treatment Plants. Regional Government of Castilla-La Mancha
- ◆ CEO PECICAMAN (Projects of Circular Economy of Castilla La Mancha)
- ◆ Industrial Chemical Engineer UCLM
- ◆ Master's Degree in Environmental Engineering and Management E.O.I. Madrid
- ◆ Master's Degree in Business Administration and Management CEREM Madrid
- ◆ Expert Professor in the Master of Engineering and Environmental Management at ITQUIMA-UCLM
- ◆ Research work on the reuse of sludge from chemical washing of nitric acid boilers and on nanoparticulated products for water treatment with new technologies
- ◆ Speaker at National and International Congresses on Water, Agriculture and Sustainability

# 04

# Structure and Content

In order to provide the student with first class skills, and with the objective of qualifying the best engineers in the sector, a group of highly prestigious professionals has been in charge of devising and designing the contents and syllabus of this complete Postgraduate Certificate. All of this, based on a comfortable and adequate structure to promote the acquisition of professional competencies in a way that is not only theoretical, but also practical. This will ensure that professionals will not only have the necessary theoretical basis, but will also know how to apply what they have learned to their professional practice.







“

*This University puts at your disposal the most complete and up-to-date contents on the market”*

## Module 1. Water and Sustainability in the Urban Water Cycle

- 1.1. Social Commitment for the Reduction of Water Consumption in the Urban Cycle
  - 1.1.1. Water Footprint
  - 1.1.2. Importance of our Water Footprint
  - 1.1.3. Generation of Goods
  - 1.1.4. Generation of Services
  - 1.1.5. Social Commitment to Reduce Consumption
  - 1.1.6. Citizen Commitment
  - 1.1.7. Commitment of Public Administrations
  - 1.1.8. Commitment of the Company. R.S.C.
- 1.2. Water Problems in the Cities. Analysis of Sustainable Use
  - 1.2.1. Water Stress in Today's Urban Areas
  - 1.2.2. Water Stress
  - 1.2.3. Causes and Consequences of Water Stress
  - 1.2.4. The Sustainable Environment
  - 1.2.5. The Urban Water Cycle as a Vector of Sustainability
  - 1.2.6. Coping with Water Scarcity. Response Options
- 1.3. Sustainability Policies in Urban Water Cycle Management
  - 1.3.1. Control of Water Resources
  - 1.3.2. The Triangle of Sustainable Management: Society, Environment and Efficiency
  - 1.3.3. Integral Water Management as a Support for Sustainability
  - 1.3.4. Expectations and Commitments in Sustainable Management
- 1.4. Sustainability Indicators. Ecosocial Water
  - 1.4.1. Triangle of Hydrosustainability
  - 1.4.2. Society -Economy-Ecology
  - 1.4.3. Ecosocial Water. Scarce Commodity
  - 1.4.4. Heterogeneity and Innovation as a Challenge in the Fight against Water Misallocation
- 1.5. Agents Involved in Water Management. The Role of Water Managers
  - 1.5.1. Agents Involved in the Action or Situation of the Water Environment
  - 1.5.2. Agents Involved in the Duties and Rights
  - 1.5.3. Agents that May be Affected and/or Benefited by the Action or Situation of the Water Environment
  - 1.5.4. Role of Managers in the Urban Water Cycle





- 1.6. Water Uses. Training and Good Practices
  - 1.6.1. Water as a Source of Supply
  - 1.6.2. Water as a Means of Transport
  - 1.6.3. Water as a Receiving Medium for Other Water Flows
  - 1.6.4. Water as a Source and Receiving Medium for Energy
  - 1.6.5. Good Practices in the Use of Water. Training and Information
- 1.7. Circular Water Economy
  - 1.7.1. Indicators to Measure the Circularity of Water
  - 1.7.2. Catchment and its Indicators
  - 1.7.3. Supply and its Indicators
  - 1.7.4. Sanitation and its Indicators
  - 1.7.5. Reuse and its Indicators
  - 1.7.6. Water Uses
  - 1.7.7. Proposals for Action in Water Reuse
- 1.8. Analysis of the Integral Urban Water Cycle
  - 1.8.1. Upstream Supply. Capture
  - 1.8.2. Downstream Supply. Distribution
  - 1.8.3. Sanitation. Rainwater Collection
  - 1.8.4. Wastewater Treatment
  - 1.8.5. Wastewater Regeneration. Reuse
- 1.9. A Look into the Future of Water Uses
  - 1.9.1. Water in the 2030 Agenda
  - 1.9.2. Ensuring the Availability, Management, and Sanitation of Water for All People
  - 1.9.3. Resources Used/Total Resources Available in the Short, Medium and Long Term
  - 1.9.4. Widespread Participation of Local Communities in Improved Management
- 1.10. New Cities. More Sustainable Management
  - 1.10.1. Technological Resources and Digitalization
  - 1.10.2. Urban Resilience. Collaboration Among Actors
  - 1.10.3. Factors to Become a Resilient Population
  - 1.10.4. Linkages Between Urban, Peri-urban and Rural Areas

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"*

## 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.

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*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 Certificate in Water and Sustainability in the Urban Water Cycle guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Water and Sustainability in the Urban Water Cycle** 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.

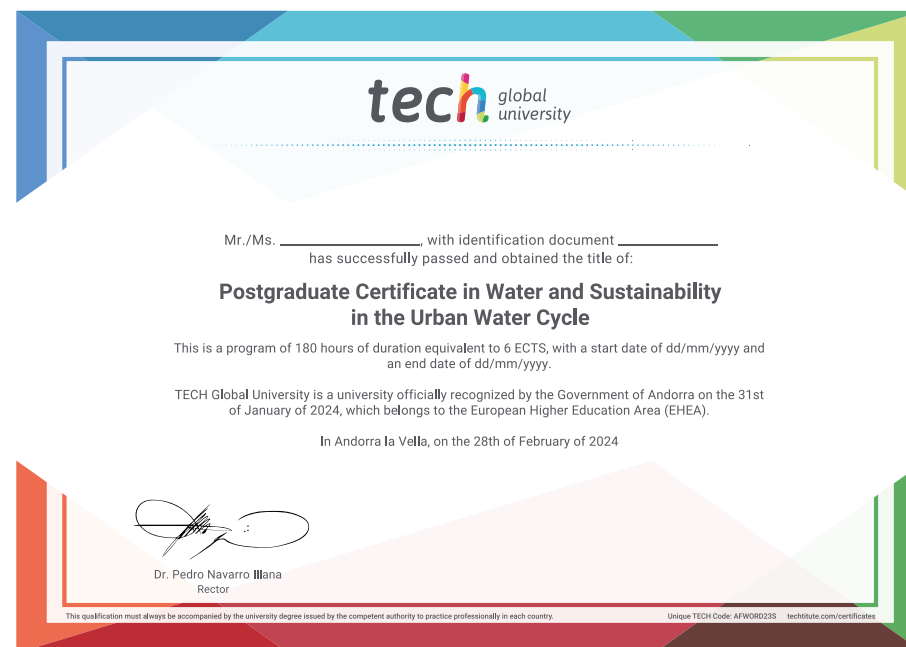
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Water and Sustainability in the Urban Water Cycle**

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  
development language  
virtual classroom



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