Postgraduate Certificate

Urban Water Sanitation Networks

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Postgraduate Certificate
Urban Water Sanitation Networks

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

Website: **www.techtitute.com/in/engineering/postgraduate-certificate/urban-water-sanitation-networks**

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01

Introduction

This Postgraduate Certificate develops in depth and in a practical way the functionalities of the different elements that are part of a sewerage network. Thus, the student will be able to size and select the most appropriate equipment for the design or reform of a new network. In the same way, with this program, the student will acquire knowledge that will enable him/her to carry out surveillance, inspection and cleaning of the sanitation network. This will enable you to practice as a sewer network professional with the knowledge necessary to implement and manage an effective network maintenance plan.

Contribute with your work as an expert engineer in sanitation networks and become an essential professional in this area"

Although the sanitation network is sometimes the most neglected phase of the integral water cycle, the large number of corrective interventions that this system has been requiring with the increased demands of users, has led to an intense technification of the elements of these networks.

This Postgraduate Certificate develops in depth and in a practical way the functionalities of the different elements that are part of a sewerage network. Thus, the student will be able to size and select the most appropriate equipment for the design or reform of a new network.

In order to maximize the useful life of a sanitation infrastructure, the correct execution of the work is of vital importance. Therefore, during the program, the most relevant aspects to be taken into account during the construction phase will be presented, showing a tool to prioritize the renewal of the network through asset management.

In the same way, the topics related to pumping stations (EBAR) are included, which will allow to know in depth these critical facilities in the system. Its content includes from the arrival works to the electrical and maneuvering equipment, describing the necessary aspects for their operation and maintenance.

Due to the emerging need to protect population centers from heavy meteorological precipitation, the Postgraduate Certificate will include information on rolling mills and storm tanks. This allows it to be at the forefront of this type of solutions increasingly demanded in the water infrastructure master plans of major cities around the world.

On the other hand, the keys related to the monitoring, inspection and cleaning of the sewage network will be fully developed to provide the sewage network professional with the necessary knowledge to implement and manage an effective maintenance plan for the network. In addition, information on network design is included, from system layouts to the most commonly used materials and special parts, and finally, the most widely used calculation and modeling software in the sector is presented: SWMM.

The Postgraduate Certificate is completed with a subject on the computer tools necessary to support the management of the sanitation network. With these transversal tools and the detailed knowledge of the elements that compose it, the student will be able to carry out the tasks of the engineer in charge of the sanitation network.

This **Postgraduate Certificate in Urban Water Sanitation Networks** contains the most complete and up-to-date program on the market. The most important features include:

- 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

The academic excellence that will accompany you throughout the program will help you get your career off the ground"

Deepen your knowledge and become an expert engineer in sanitation networks"

Intensive training specially designed to revalue the professional profile of the engineer.

As this is an online academic program, you can study wherever and whenever you want.

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 during the academic year. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced engineering experts.

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Objectives

The Postgraduate Certificate in online format that TECH proposes on this occasion was created with the aim of providing the engineer with in-depth knowledge that will enable them to practice as experts in the area of urban sanitation networks. The knowledge acquired in the development of the points of the syllabus will drive the professional from a global perspective, with full capacity to achieve the proposed goals. You will be fully empowered in a field of engineering that is versatile, global and indispensable, leading you to excellence in an ever-growing industry.

Your goals are our goals, if you grow, we grow too"

General Objectives

- 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

Specific Objectives

- Obtain a strategic vision of the importance of sanitation networks within the integral water cycle
- Know in depth the elements of the sewerage network in order to act with criterion in making decisions in case of failures
- Identify the main problems of wastewater pumping stations in order to optimize their operation
- Analyze the main computer tools related to a sewerage system such as GIS and SWMM

The tools and skills you will acquire will help you achieve your career goals"

03

Course Management

With the intention of offering an education of excellence to all its students, TECH has a renowned teaching staff so that the student acquires a solid knowledge in the specialty of urban sanitation networks. For this reason, this Postgraduate Certificate has a highly qualified team with extensive experience in the sector, which will offer the best possible resources for students in the development of their skills during the course. 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.

Learn from the best and you will see your professional skills soar"

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

Ms. Arias Rodríguez, Ana

- Project technician at Canal de Isabel II: management, maintenance and operation of sanitation and supply networks in the Community of Madrid
- Technical Engineer in Public Works, Polytechnic University of de Madrid
- Degree in Civil Engineering from the Polytechnic University of Avila, University of Salamanca
- Master's Degree in Professional Development from the University of Alcalá, Madrid

04

Structure and Content

The structure and contents of this program have been designed based on the requirements of engineering applied to the area of sanitation networks and following the specifications proposed by the teaching staff of this Postgraduate Certificate. In this way, a study plan has been established whose subjects offer a broad perspective of this sector from a global point of view for the sake of its application at international level, incorporating all the fields of work involved in the development of its functions, both public and private.

A syllabus based on criteria of excellence and rigorousness designed to train the best professionals in the sector"

Module 1. Sanitation Networks

1.1. Importance of Sewerage Networks
- 1.1.1. Needs of Sewerage Networks
- 1.1.2. Types of Networks
- 1.1.3. Sanitation Networks in the Integral Water Cycle
- 1.1.4. Regulatory Framework and Legislation

1.2. Main Elements of Gravity Sewerage Networks
- 1.2.1. General Structure
- 1.2.2. Types of Pipelines
- 1.2.3. Manholes
- 1.2.4. Connections and Connections

1.3. Other Elements of the Gravity Sewage Systems
- 1.3.1. Surface Drainage
- 1.3.2. Spillways
- 1.3.3. Other Elements
- 1.3.4. Easements

1.4. Road Works
- 1.4.1. Execution of Road Works
- 1.4.2. Safety Measures
- 1.4.3. Trenchless Renovation and Rehabilitation
- 1.4.4. Asset Management

1.5. Wastewater Elevation. WWTP
- 1.5.1. Intake Works and Coarse Well
- 1.5.2. Roughing
- 1.5.3. Pump Well
- 1.5.4. Pumps
- 1.5.5. Delivery Piping

1.6. Complementary Elements of a WWTP
- 1.6.1. Valves and Flow Meters
- 1.6.2. CS, CT, CCM and Power Generators
- 1.6.3. Other Elements
- 1.6.4. Operation and Maintenance

1.7. Rolling Mills and Storm Tanks
- 1.7.1. Features
- 1.7.2. Laminators
- 1.7.3. Storm Tanks
- 1.7.4. Operation and Maintenance

1.8. Operation of Gravity Drainage Networks
- 1.8.1. Surveillance and Cleaning
- 1.8.2. Inspection
- 1.8.3. Cleaning
- 1.8.4. Conservation Works
- 1.8.5. Improvement Works
- 1.8.6. Usual Incidents

1.9. Network Design
- 1.9.1. Background Information
- 1.9.2. Trace
- 1.9.3. Materials
- 1.9.4. Joints and Connections
- 1.9.5. Special Parts
- 1.9.6. Design Flow Rates
- 1.9.7. Network Analysis and Modeling with SWMM

1.10. Management Support Software Tools
- 1.10.1. Cartographic Maps, GIS
- 1.10.2. Recording of Incidents
- 1.10.3. WWTP Support

A complete, key and decisive program to boost your professional career"

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

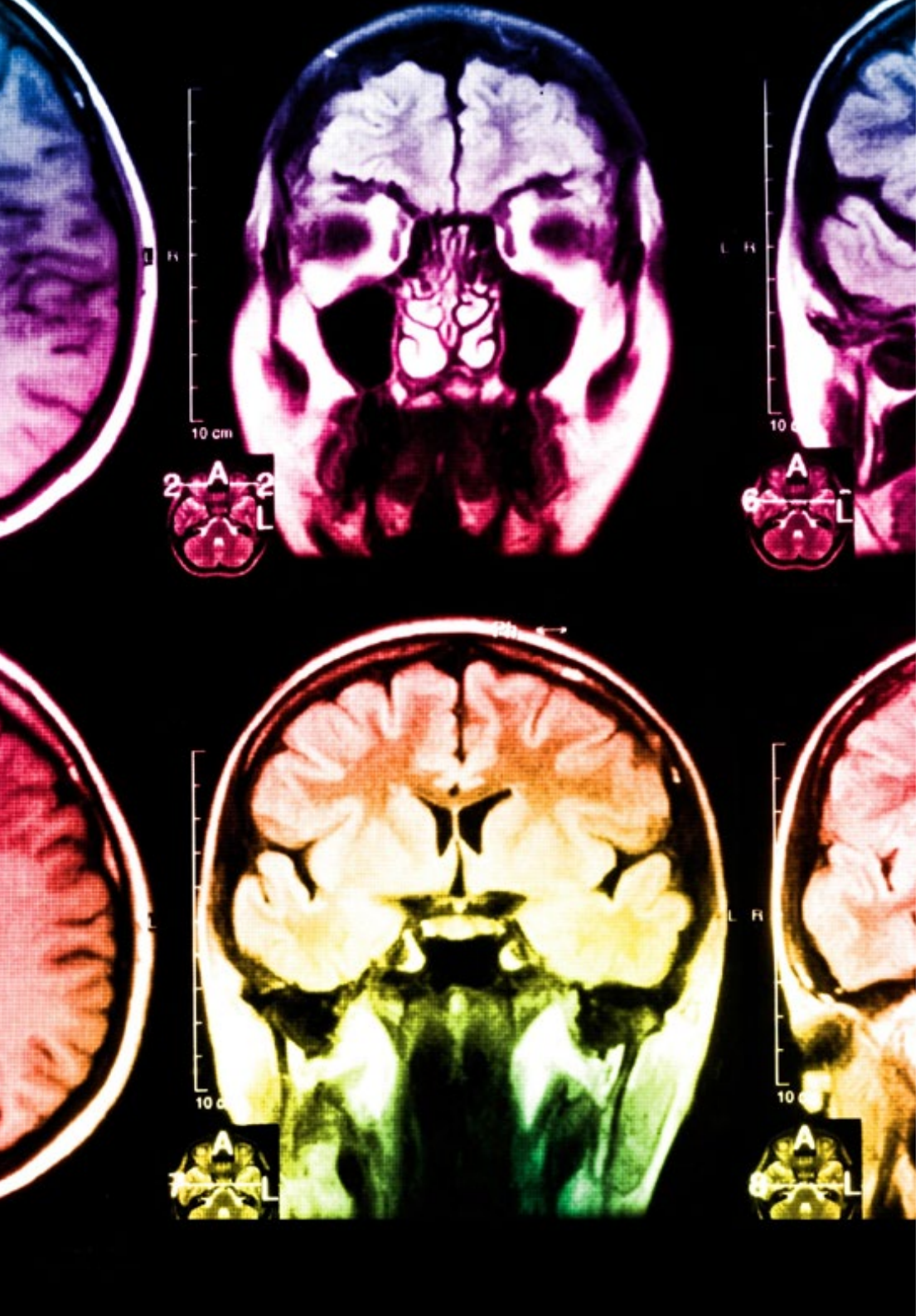
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

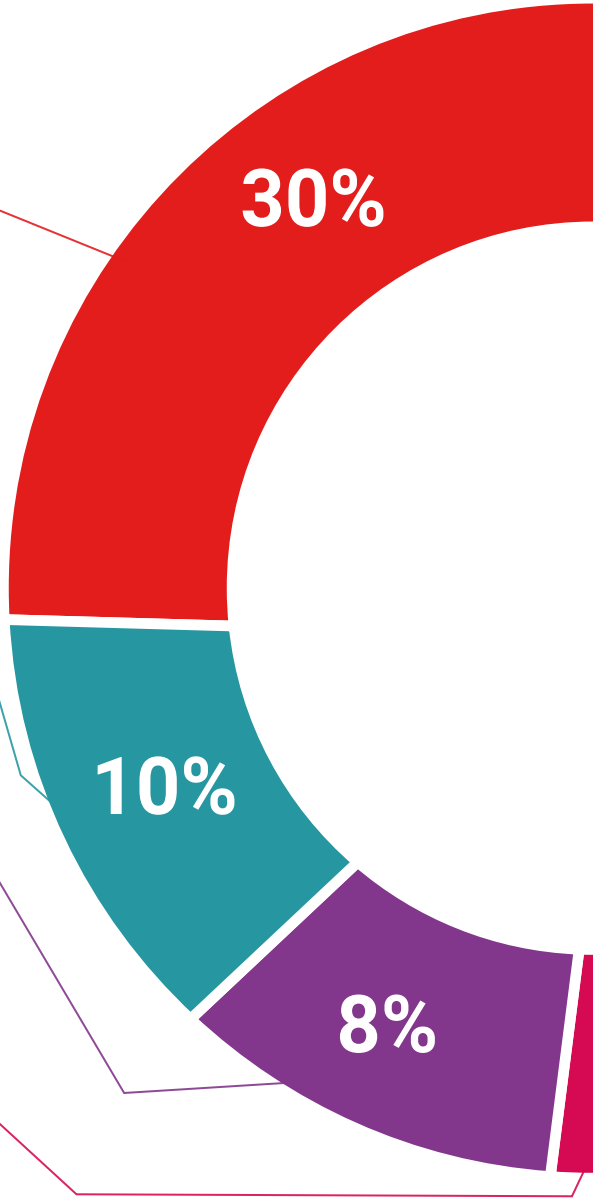
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

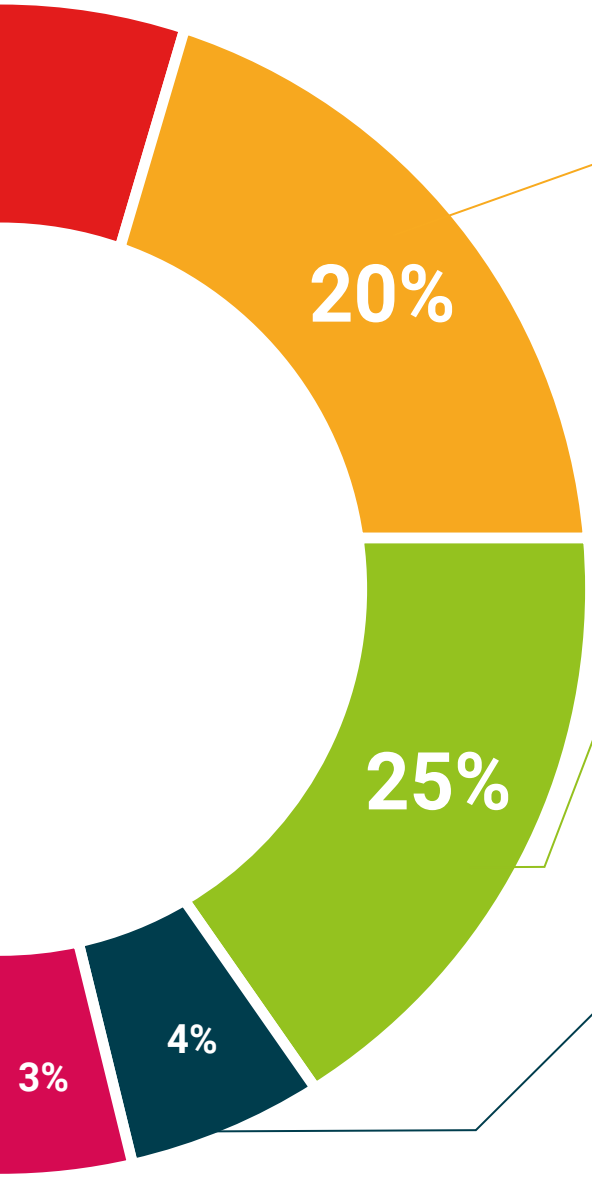
Practising Skills and Abilities

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 Certificate in Urban Water Sanitation Networks guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Urban Water Sanitation Networks** contains the most complete and up-to-date 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 certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Urban Water Sanitation Networks**

Official N° of Hours: **150 h.**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Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Urban Water Sanitation Networks

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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