Postgraduate Certificate
Hydraulic Reservoir Design

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Postgraduate Certificate
Hydraulic Reservoir Design

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

Website: **www.techtitute.com/us/engineering/postgraduate-certificate/hydraulic-reservoir-design**

Index

01

Introduction

Nowadays, society's demand for drinking water is increasing day by day, making it necessary to have, in almost every city, several tanks to guarantee two fundamental things: the correct supply and compliance with the pressure required by the standards. In accordance with the importance that this field of study has acquired in the field of research, this program has been designed to provide the professional with exclusive material related to the definition of the main criteria for the design of tanks, the installation of maneuvering and control equipment and the management of assets. This will be done in a 100% online pedagogical format and with a team of teachers specialized in Hydraulic Works.

Hydraulic infrastructure is a current field of research, where TECH will lead you to plan, improve and create reservoir techniques for water supply"

The drinking water used in the city comes from drinking water treatment plants. To make this hydraulic intervention, they use products in quantities calculated for a given flow rate. The water tanks supply the city during the most demanded hours and when there is less consumption, they are filled again, but this also has its technical flaws. This is where the Hydraulic Reservoir Design comes in. That is why experts in Hydraulic Engineering have set themselves the task of working and applying solutions in the management and maintenance of these storage structures.

In this sense, studies have continued to advance for the implementation of actions that benefit the distribution of water in different areas of the world, making it clear that professionals in Civil Engineering must remain up to date in this area of knowledge. That is why this Postgraduate Certificate will provide the graduates with innovative updates on the design of hydraulic reservoirs and the deepening related to the analysis of the main elements that make up the reservoirs, materials and uses.

The engineers will strengthen their skills in specific areas such as analyzing the basics of reservoir design and identifying the main sizing criteria. A qualification that has a qualified team of specialized teachers and at the same time, accompanied by multimedia resources of very good quality that offer the benefit of the Relearning modality.

Thus, comfort and academic excellence are essential for TECH. That is why this program offers the best innovations in the sector, being a qualification of great flexibility by only needing an electronic device with Internet connection to easily access the virtual platform from the comfort of your home or wherever you are.

This **Postgraduate Certificate in Hydraulic Reservoir Design** 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 Civil Engineering focused on Hydraulic Works
- 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

Stand out in a sector that today needs professionals like you, applying solutions in the management and maintenance of hydraulic storage structures"

To keep up with the pace of Hydraulic Engineering, TECH offers you the most recent updates in Hydraulic Reservoir Design with this Postgraduate Certificate"

Enhance your knowledge and become an expert engineer in hydraulic infrastructures in only 6 weeks.

You will expand your knowledge in the fundamentals of water supply reservoir design through 180 hours of the best theoretical, practical and additional content.

The program's teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

The design of this program focuses on Problem-Based Learning, by means of which the professionals must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.

02

Objectives

This Postgraduate Certificate in Hydraulic Reservoir Design has been created mainly to provide the graduates with the most important novelties in the Hydraulic Works sector. In addition, TECH provides several tools in terms of academic updates that take this program to another level in efficiency and quality. At the end of the course, the students will have increased his knowledge in the use and application of the BIM methodology by modeling and information management, in addition to specifying the functions, uses and classifications of the reservoirs.

TECH's objective is to take you professionally to the top with a program of high standards of efficiency and quality"

General Objectives

- Develop new knowledge about drinking water storage, the construction of storage structures and their operation
- Analyze the main elements that make up tanks, their materials and uses
- Define the main criteria for reservoir design, installation of control and control equipment and asset management
- Determine the use and application of the BIM methodology in modeling and information management

Specific Objectives

- Specify the functions, uses and classifications of reservoirs
- Analyze the fundamentals of water supply reservoir design
- Develop the general aspects of reservoirs, auxiliary structures and installations
- Identify the main criteria for reservoir sizing
- Propose solutions to water storage problems and the management and maintenance of storage structures
- Apply the BIM methodology, proposing a modeling strategy for vertical structures and the incorporation of information for their management

You will achieve your objectives with TECH, thanks to the innovative didactic tools that will help you during the development of the program"

03

Course Management

This qualification integrates an experienced and specialized team of professionals, who provide the best tools to the students in the academic process of the program. That is why TECH, in order to provide a top level education, has a faculty focused on New Materials Science and Nanotechnology, Civil Engineering, and also in BIM technology applied to Hydraulic Works. In this sense, the students have the guarantee of being able to specialize in a sector with high demand and that will take him to the top of the professional success.

TECH focuses on offering the most recent updates at the highest level with a highly qualified teaching team"

Management

D. González González, Blas

- Managing Director at Tolvas Verdes Malacitanas S.A
- CEO in Andaluza de Traviesas
- Director of Engineering and Development at GEA 21, S.A. Head of the Technical Services of the UTE Metro of Seville and co-director of the Construction Projects for Line 1 of the Metro of Seville
- CEO in Bética de Ingeniería S.A.L
- Teacher of several university master's degrees related to Civil Engineering, as well as subjects of the Degree in Architecture at the University of Seville
- Degree in Civil Engineering from the Polytechnic University of Madrid
- Master's Degree in New Materials Science and Nanotechnology from the University of Seville
- Master's Degree in BIM Management in Infrastructure and Civil Engineering by EADIC - Rey Juan Carlos University

Professors

Ms. Provincial Gallardo, Olga

- Civil Engineer at TEAMBIMCIVIL S.L
- Graduate in Civil Engineering at the University of Seville
- Degree in Civil Engineering at the University of Valencia
- Specialist in BIM Modeling by the CA1 Department of the University of Seville
- Lecturer in the courses of specialization in BIM technology applied to Hydraulic Works of the BIOMOUS Digital Construction Technology Institute


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04

Structure and Content

This Postgraduate Certificate in Hydraulic Reservoir Design has been formulated and thought according to the most current studies in the field of Hydraulic Infrastructure, achieving to establish a syllabus that provides a robust content on Hydraulic Works. This program is aimed at integrating exclusive material regarding the modeling strategy of a reservoir in Revit and the management with visualization tools. All this by means of a great variety of audiovisual resources that will facilitate the strengthening of competences in this university qualification.

A syllabus designed by industry specialists that will lead you to excel in a competitive field of study"

Module 1. Reservoirs, elements and design

1.1. Tanks
- 1.1.1. Deposit
- 1.1.2. Functionality of a Header Reservoir
- 1.1.3. Other Uses

1.2. Classification of Deposit
- 1.2.1. According to their Arrangement on the Terrain
- 1.2.2. According to its Constructive Process
- 1.2.3. According to its Material
- 1.2.4. According to their Relative Position in the Network

1.3. Reservoir Design
- 1.3.1. Types of Demand and Utilization
- 1.3.2. Design Requirements
- 1.3.3. Topography
- 1.3.4. Financial Elements
- 1.3.5. Others

1.4. Sizing of a Reservoir
- 1.4.1. Reservoir Dimensions
- 1.4.2. Height of the Sheet of Water
- 1.4.3. Capacity

1.5. Components of the Reservoirs
- 1.5.1. Enclosure Walls
- 1.5.2. Dividing Walls
- 1.5.3. Sills
- 1.5.4. Guide Partitions
- 1.5.5. Roof
- 1.5.6. Joints
- 1.5.7. Key Chamber

1.6. Equipment of the Reservoirs
- 1.6.1. Schematic Diagram of Basic Installations
- 1.6.2. Valves
- 1.6.3. Drainage
- 1.6.4. Control Elements

1.7. Maintenance and Conservation of Reservoirs
- 1.7.1. Applicable Regulations
- 1.7.2. Tank Cleaning
- 1.7.3. Maintenance of Reservoirs

1.8. Revit Reservoir Modeling Strategy
- 1.8.1. Revit Modeler Environment
- 1.8.2. Levels and Reference Planes
- 1.8.3. Revit Families

1.9. Operational Information. Set of reservoir parameters
- 1.9.1. Property Sets
- 1.9.2. Application of PSET to BIM objects
- 1.9.3. Export of Properties. Attributes to Databases

1.10. Management with Visualization Tools
- 1.10.1. Software to Visualize the Models
- 1.10.2. Information Requirements
- 1.10.3. BIMDATA IO Viewer

A Postgraduate Certificate by the best, for the best. Grow and position yourself professionally with TECH"

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

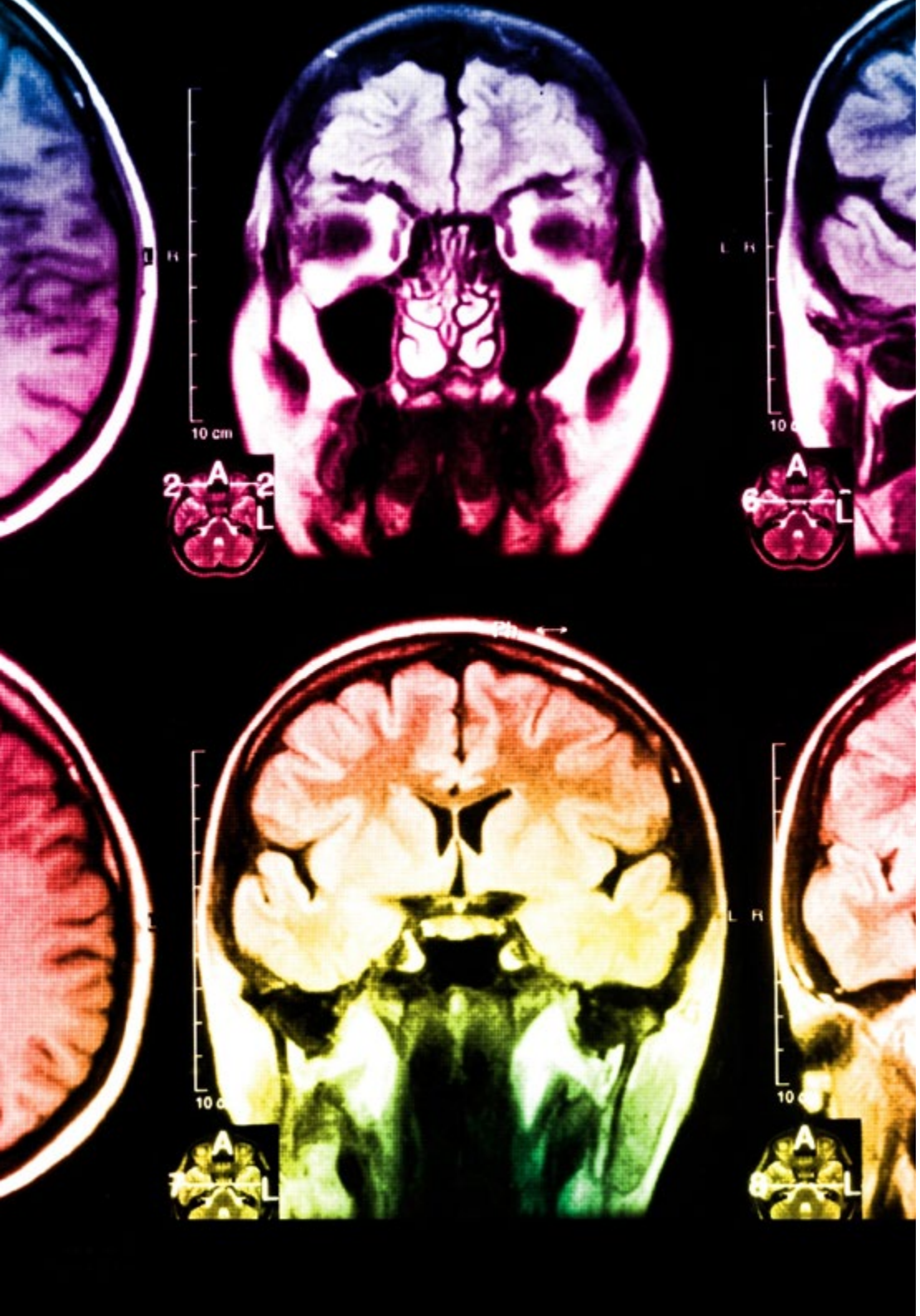
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

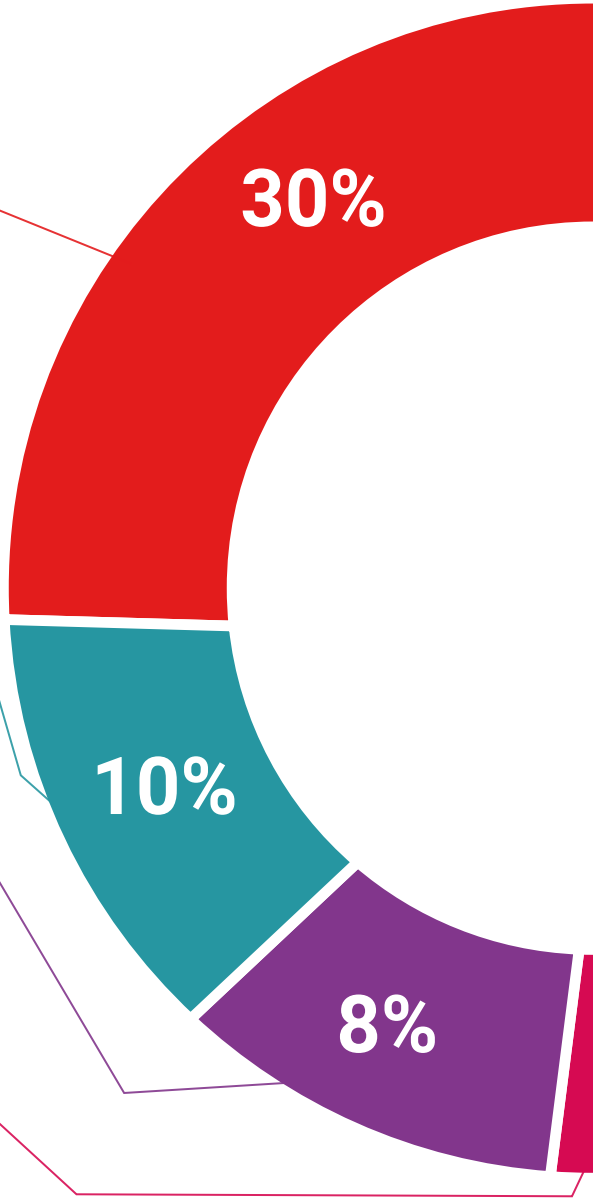
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

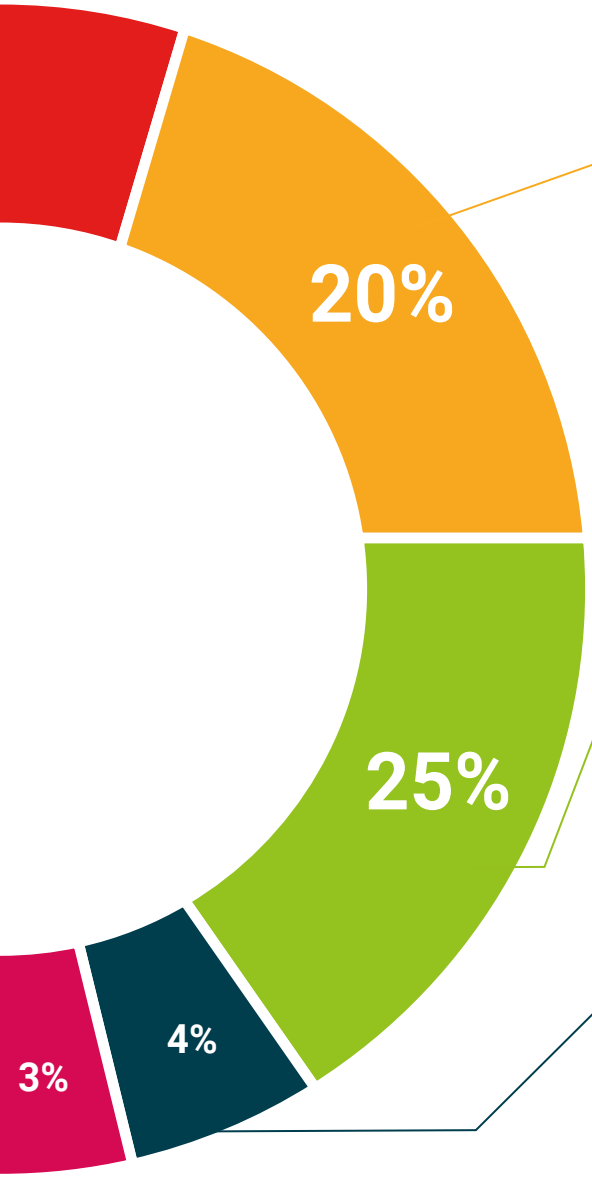
Practising Skills and Abilities

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 Hydraulic Reservoir Design 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 Hydraulic Reservoir Design** 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 Hydraulic Reservoir Design**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Certificate in Hydraulic Reservoir Design

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

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 diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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