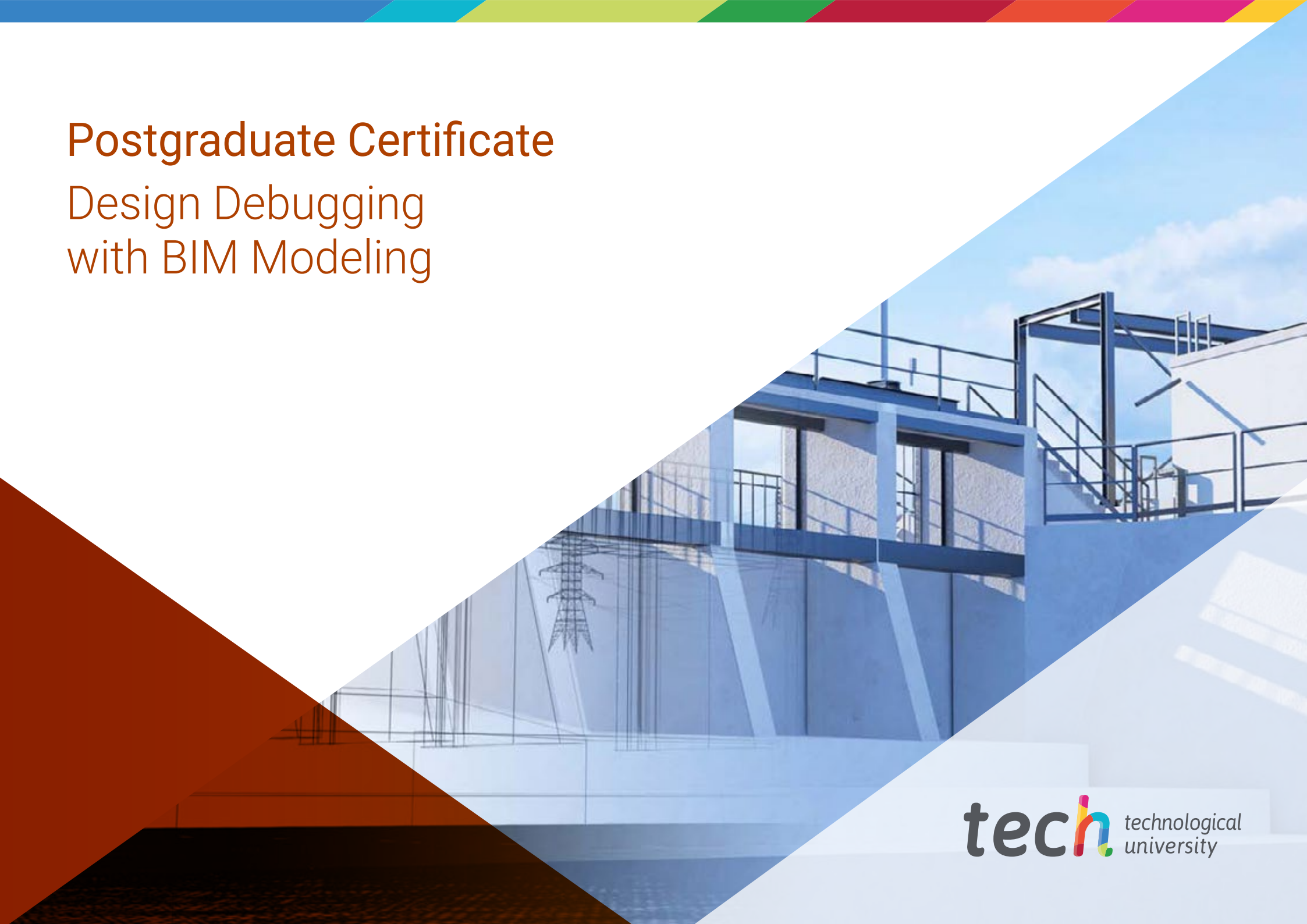
Postgraduate Certificate

Design Debugging with BIM Modeling



tech technological university

tech technological university

Postgraduate Certificate
Design Debugging with BIM Modeling

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

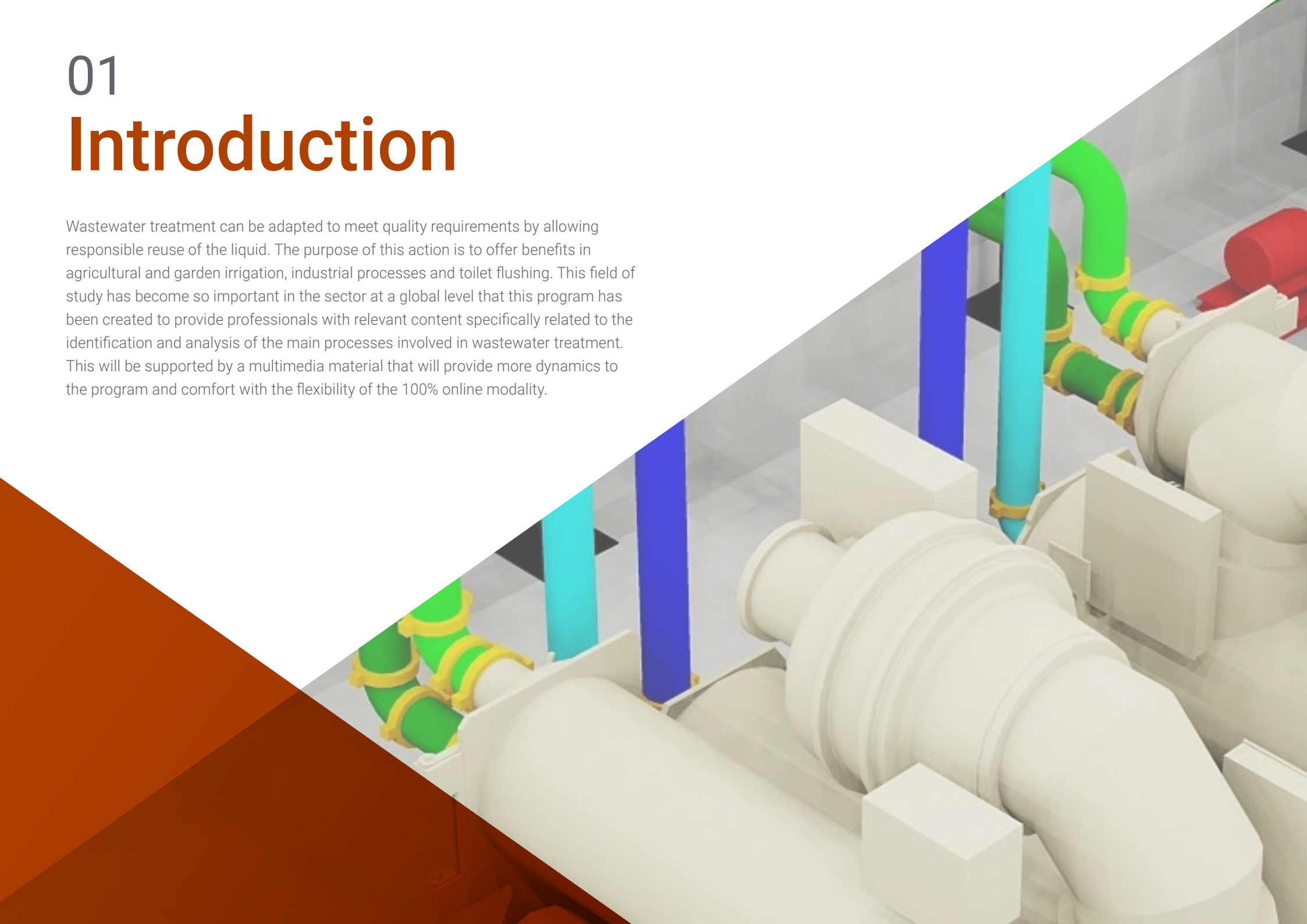
Website: **www.techtitute.com/in/engineering/postgraduate-certificate/design-debugging-bim-modeling**

Index

01

Introduction

Wastewater treatment can be adapted to meet quality requirements by allowing responsible reuse of the liquid. The purpose of this action is to offer benefits in agricultural and garden irrigation, industrial processes and toilet flushing. This field of study has become so important in the sector at a global level that this program has been created to provide professionals with relevant content specifically related to the identification and analysis of the main processes involved in wastewater treatment. This will be supported by a multimedia material that will provide more dynamics to the program and comfort with the flexibility of the 100% online modality.



TECH offers you exclusive content in Hydraulic Infrastructure that will take you to to position you among the best in the sector”

Recycled water for garden irrigation requires less treatment than water used for drinking. Therefore, water is a vital resource for human beings, not only for drinking, but for all types of industrial processes and production of goods. This leads to the treatment of wastewater to obtain a series of physical, chemical and biological processes eliminating pollutants to access the use of the same. Accordingly, professionals in the sector have had to be up to date for the development of schemes and designs of a WWTP (Wastewater Treatment Plant). They will be able to do this by defining the main design parameters of the different elements of the treatment plant.

In this way, research and studies have yielded results and continue to advance, providing answers to various questions. For this reason, the hydraulics expert must be at the forefront in this area of knowledge. In this sense, this Postgraduate Certificate will provide the graduates with a variety of knowledge and innovative tools in Wastewater Treatment Design with BIM Modeling and the analysis of the main characteristics of wastewater.

Students will broaden their knowledge in the different areas related to the evaluation of the waste generated and their possibilities of use. This program has a first class teaching staff and a great background, in addition to having the support of high quality multimedia content and the opportunity to distribute their time in the best way to present their sessions at any time of the day.

Also, TECH focuses on efficiency and academic excellence, so this program provides the most revolutionary developments in the industry, positioning the graduate with the highest academic standards at the end of the course. The students will only need an electronic device with good Internet coverage and thus will easily access the virtual platform from the comfort of the place where they are.

This **Postgraduate Certificate in Design Debugging with BIM Modeling** 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 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 work
- Content that is accessible from any fixed or portable device with an Internet connection

With TECH you will get the most recent updates on biogas uses of biological processes in EDA"

This Postgraduate Certificate will provide you with innovative tools on current trends and the application of digital construction to wastewater treatment plants through 150 hours of the best multidisciplinary content"

Enhance your knowledge and become an expert engineer in hydraulic infrastructures with this Postgraduate Certificate.

With TECH you have the comfort in your hands by having the time flexibility to perform your sessions at any time of the day.

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.

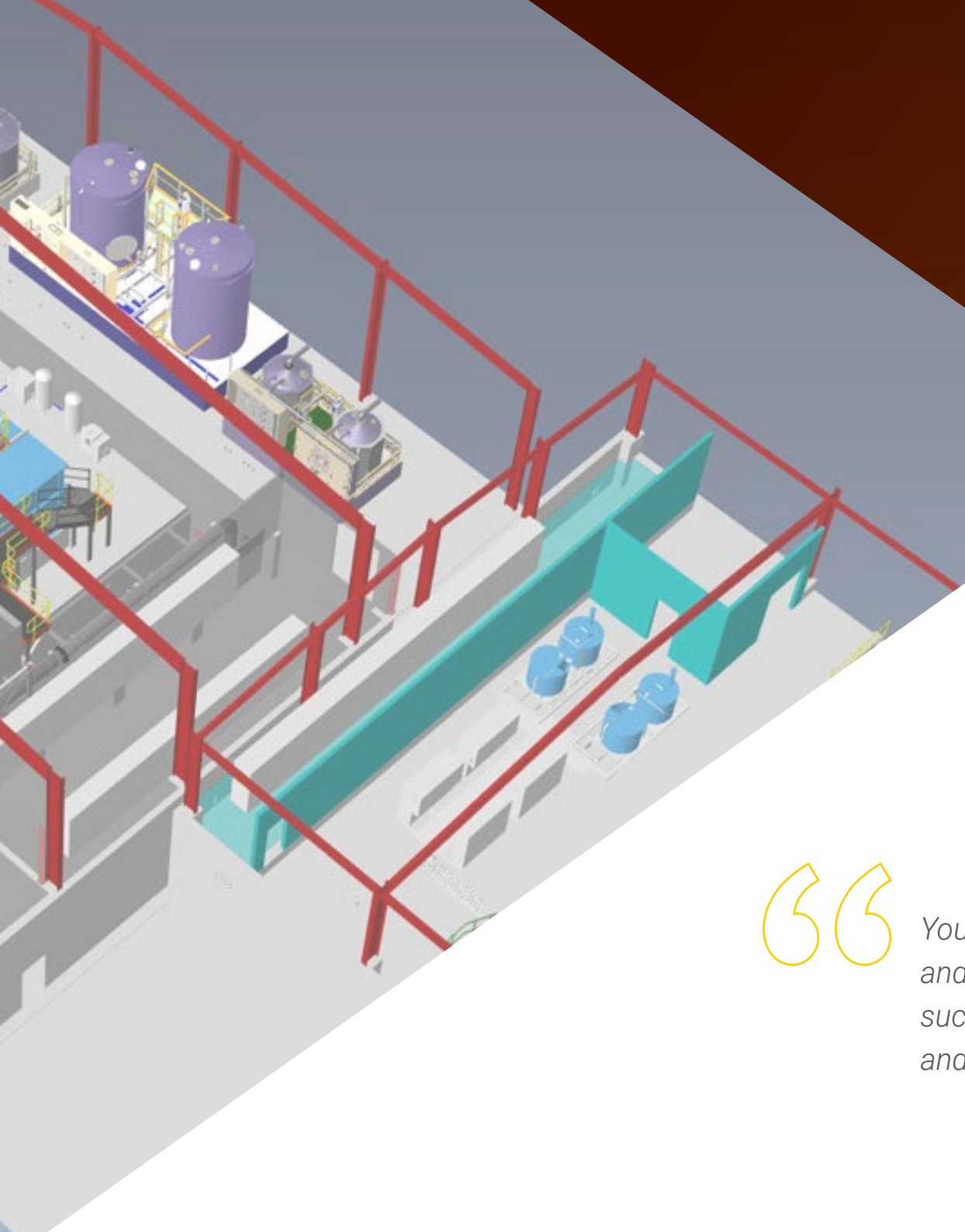
Its multimedia content, developed with the latest educational technology, will provide the professionals with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

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

With this Postgraduate Certificate in Sewage Design with BIM Modeling, the students will be able to acquire specific skills, incorporating the best updates in the sector, as well as the challenges that the same has in the area of Hydraulic Infrastructures. Therefore, the students will be provided with different first level learning methodologies, thus guaranteeing the success of the qualification. At the end of the program, the graduates will have reinforced their competences in the selection criteria according to the quality of the discharge, focused on the performance of the purification processes.

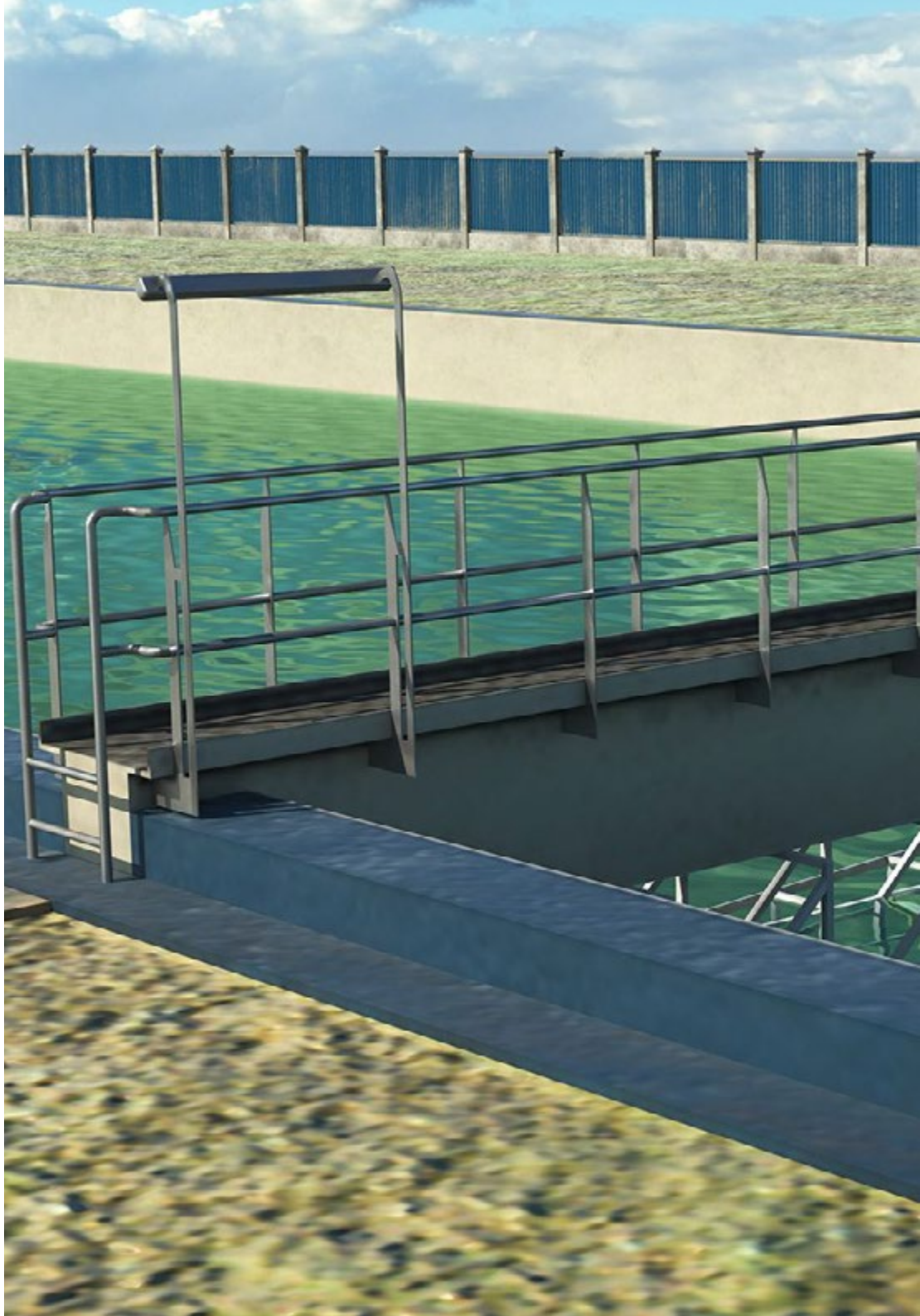


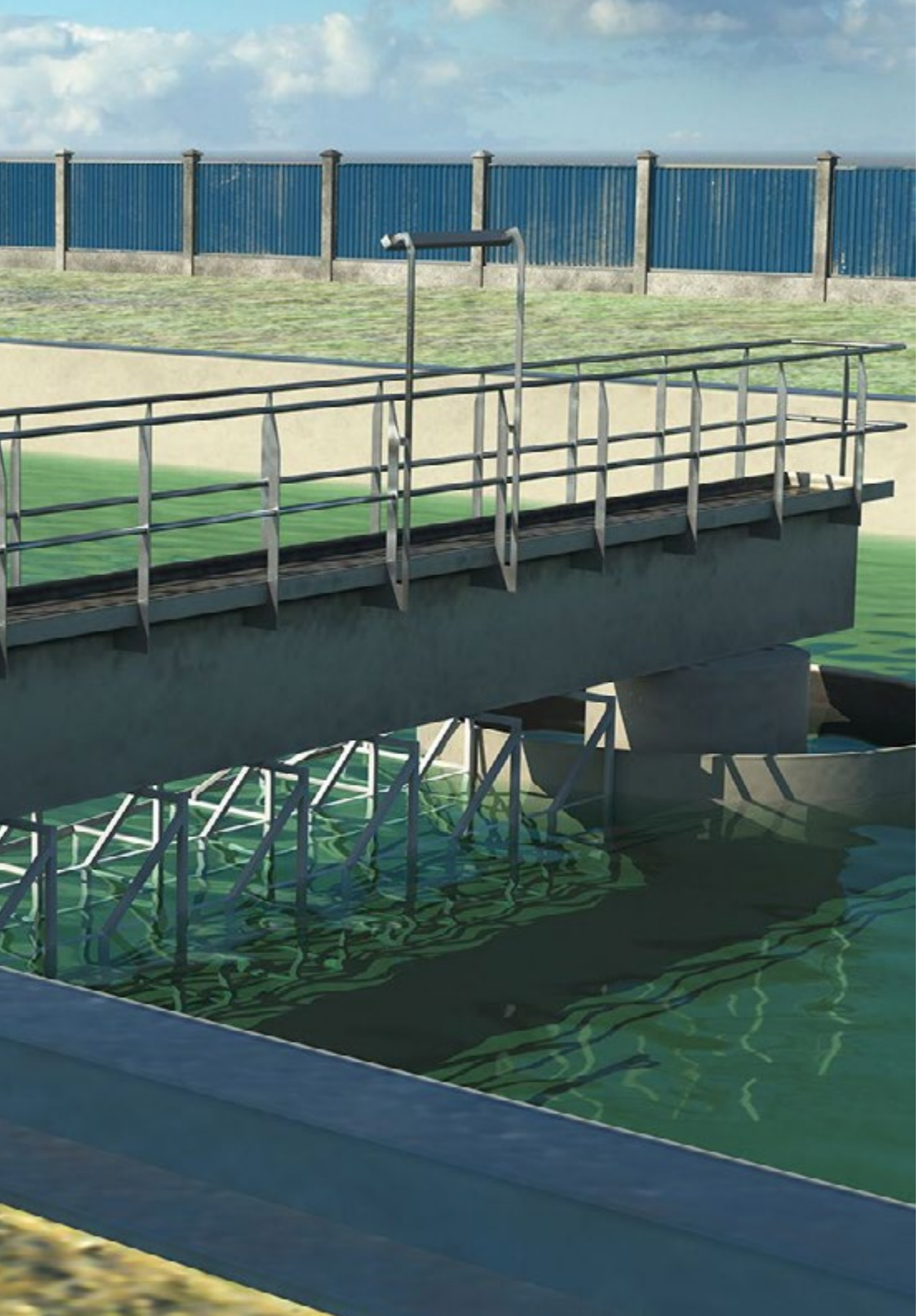
You will have at your disposal the best and most innovative didactic tools to successfully carry out the development and completion of the program"

General Objectives

- Identify the main processes involved in wastewater purification
- Analyze the technologies suitable for different scenarios
- Define the main design parameters of the different elements of wastewater treatment plants
- Present current trends and the application of digital construction to wastewater treatment plants

Along the way TECH will accompany you to achieve your goals, reaching the top in a competitive field of study"





Specific Objectives

- Analyze the main characteristics of wastewater
- Establish the appropriate processes for wastewater purification
- Present basic considerations on the implementation of wastewater treatment plants
- Generate the basic scheme of a WWTP
- Develop a simple design of a conventional WWTP
- Evaluate the waste generated, and its possibilities of utilization
- Apply the acquired knowledge to the digital construction of a WWTP

03

Course Management

TECH is excellence in education, that is why in its programs the teaching methods are first class, making it the best option to successfully develop each of its qualifications. Thus, the professionals will be able to access a variety of exclusive content created by a teaching team specialized in the development of Hydraulic Works projects, production system design, transport and distribution of drinking water and BIM Management in Infrastructure and Civil Engineering. Their robust experience and extensive background in the industry will allow them to resolve doubts or answer questions that arise during the course of the program.

This Postgraduate Certificate integrates an experienced and renowned teaching staff in the field of Design Debugging with BIM Modeling"

Management

D. González González, Blas

- Manager of the Technical Institute of Digital Construction Bimous
- 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

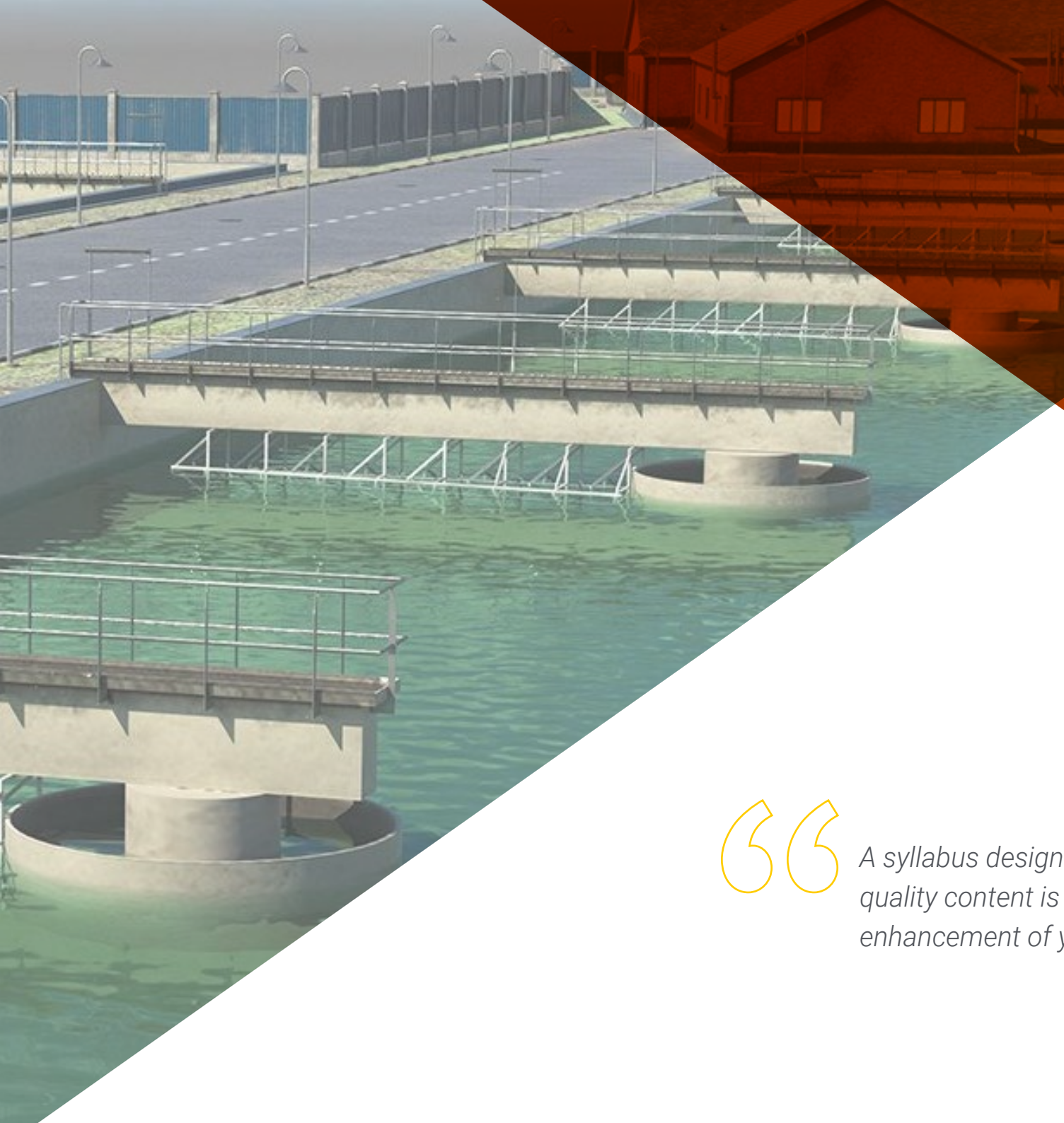
Ms. Pérez Vallecillos, Natalia

- Project manager for the Alcalá tramway infrastructure development
- Hydraulics specialist for the construction engineering project with OPWP (Oman Power and Water Procurement Company)
- Hydraulic specialist in the bidding phase of the potable water network of the urban development complex with ACWA Power
- Project manager for the preliminary design of the intake, pumping, pipelines and water treatment plant in Dhaka
- Collaborator in the elaboration of hydraulic works projects with URCI CONSULTORES, S.L
- Project coordinator for the production, transport and distribution of drinking water in La Concordia, Argentina
- Graduated in Civil Engineering at E.T.S.I.C.C.P. of Granada

04

Structure and Content

This program integrates a syllabus with advanced content in Wastewater Treatment Design with BIM Modeling, related to research in the field of Hydraulic Infrastructure. This Postgraduate Certificate has an emphasis on providing students with updated material on wastewater, purification processes, pretreatment and current trends. All this by means of the multiple audiovisual resources that give dynamism and a greater attractiveness to this university qualification.



A syllabus designed by specialists with high quality content is crucial for the successful enhancement of your knowledge”

Module 1. Debugging Elements and Design

1.1. Wastewater
- 1.1.1. Domestic Water
- 1.1.2. Industrial Water
- 1.1.3. Specific Pollutants

1.2. Purification Processes
- 1.2.1. Physical Processes
- 1.2.2. Physicochemical Processes
- 1.2.3. Biological Processes

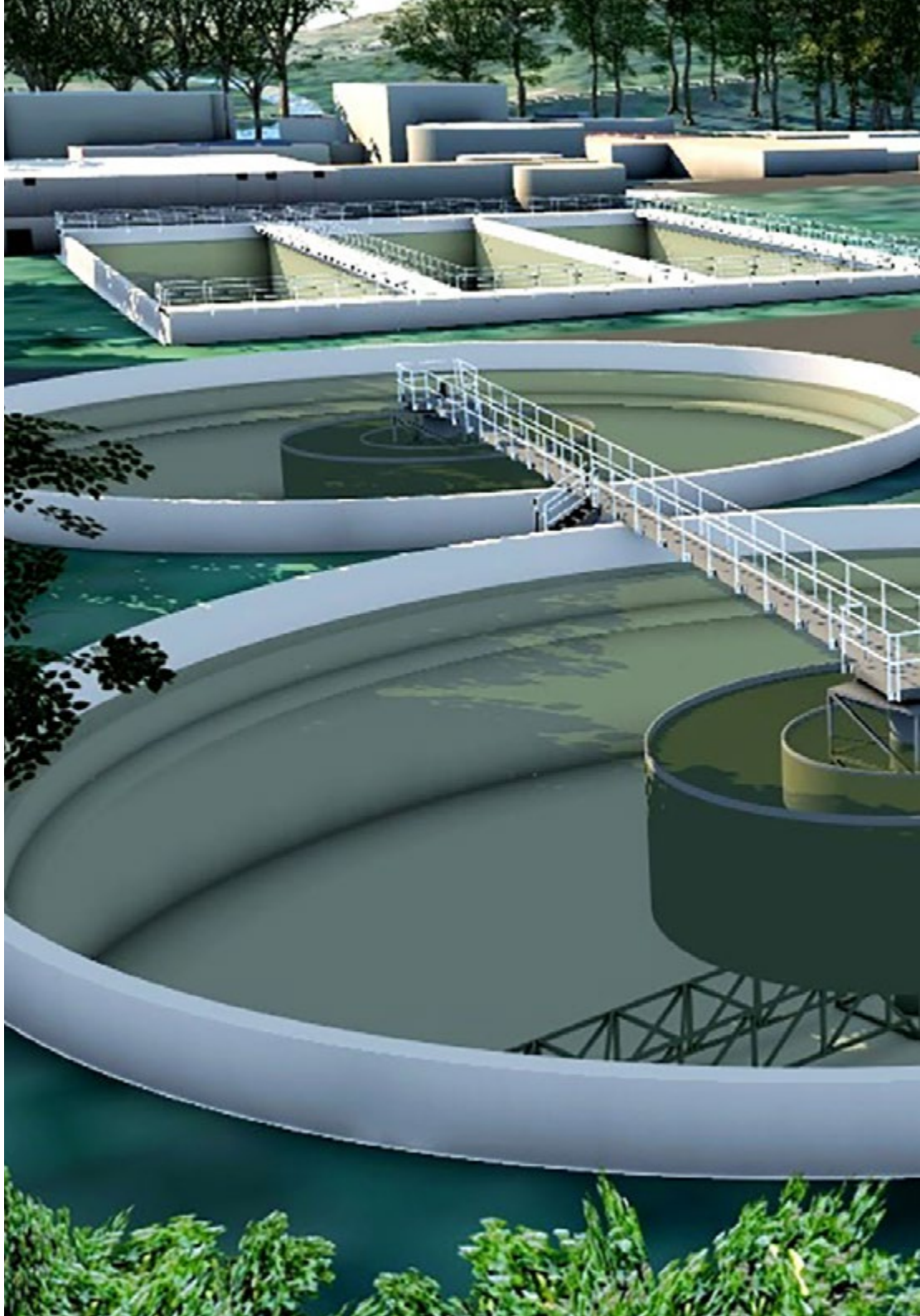
1.3. Selection Criteria According to the Quality of the Discharge
- 1.3.1. Water Uses
- 1.3.2. Performance of the Purification Processes
- 1.3.3. Implementation Considerations

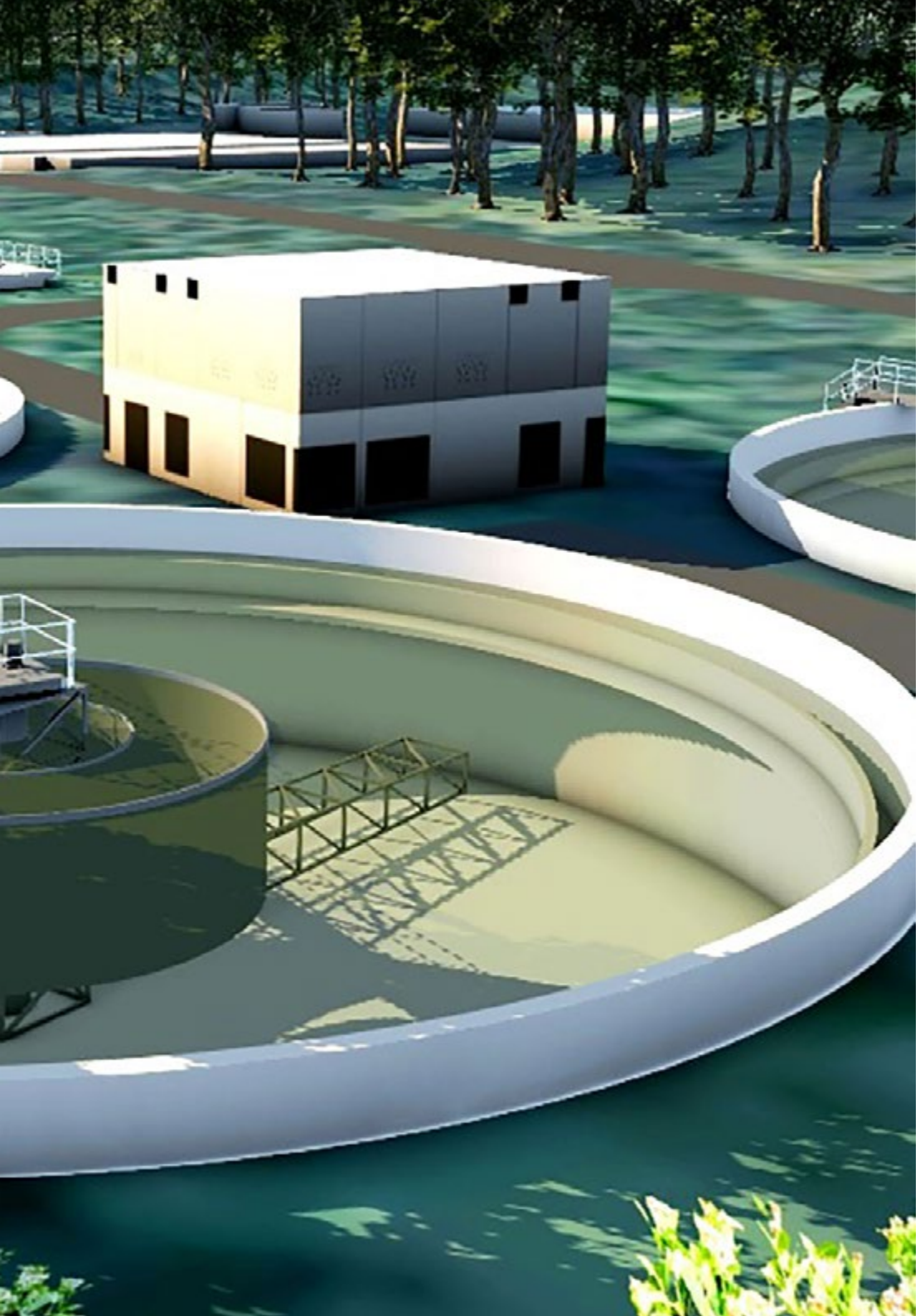
1.4. Pre-treatment
- 1.4.1. Components
- 1.4.2. Design Parameters
- 1.4.3. Performance

1.5. Primary Treatment
- 1.5.1. Components
- 1.5.2. Design Parameters
- 1.5.3. Performance

1.6. Secondary Treatment
- 1.6.1. Biological Purification
- 1.6.2. Components
- 1.6.3. Design Parameters
- 1.6.4. Performance

1.7. Tertiary Treatment
- 1.7.1. Components
- 1.7.2. Design Parameters
- 1.7.3. Performance





1.8. Sludge: Production, Treatment and Uses
- 1.8.1. Sludge Production and Treatment Systems
- 1.8.2. Design Parameters
- 1.8.3. Performance

1.9. Auxiliary Systems and Current Trends
- 1.9.1. Instrumentation and Control in a WWTP
- 1.9.2. Deodorization
- 1.9.3. Cogeneration

1.10. Modeling of a WWTP
- 1.10.1. BIM modeling of a WWTP
- 1.10.2. Uses of Biogas from Biological Processes in WWTPs
- 1.10.3. Uses of Sludge

You will achieve your objectives thanks to the solid foundations of the program and the didactic tools that TECH will provide you with"

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

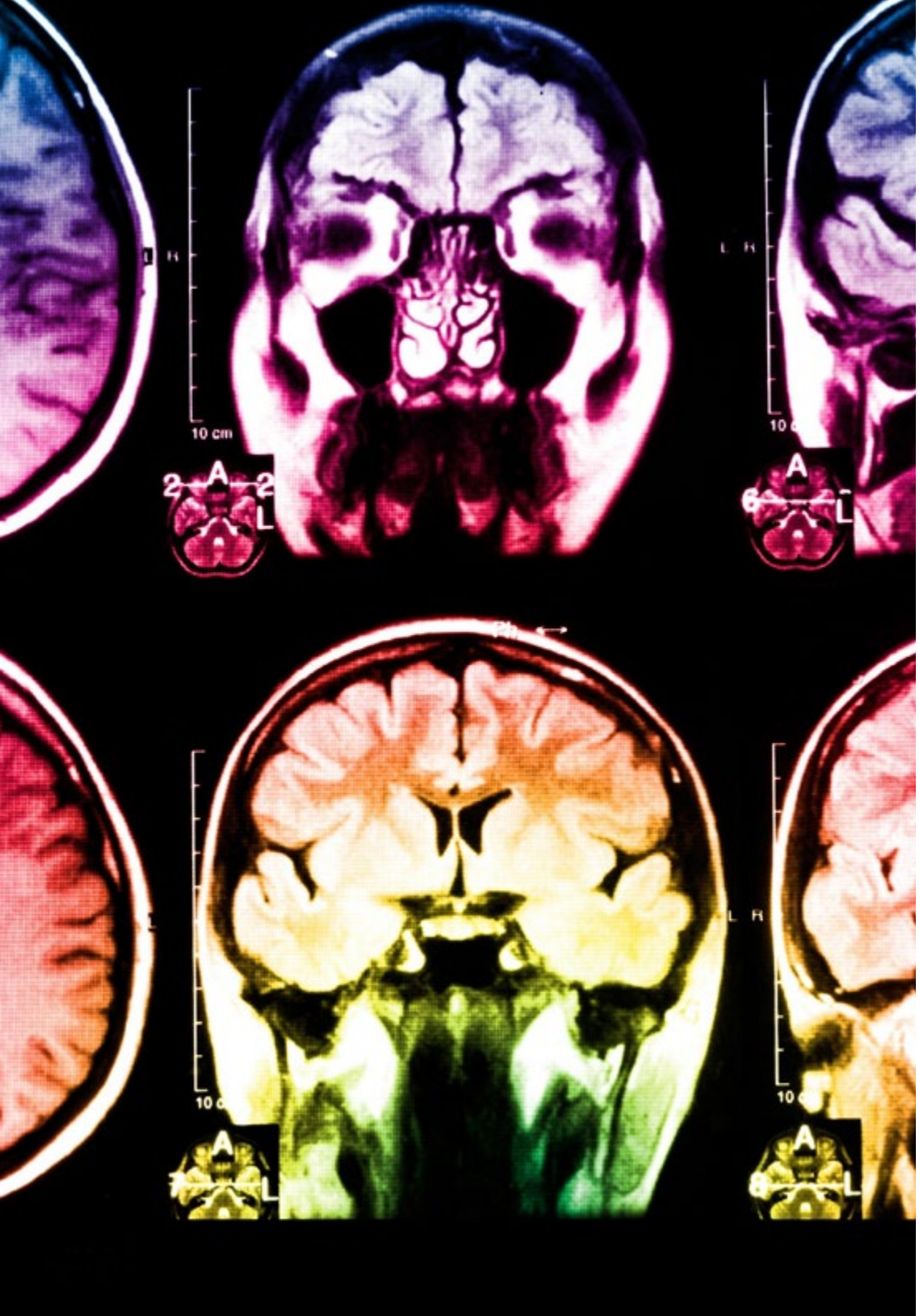
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

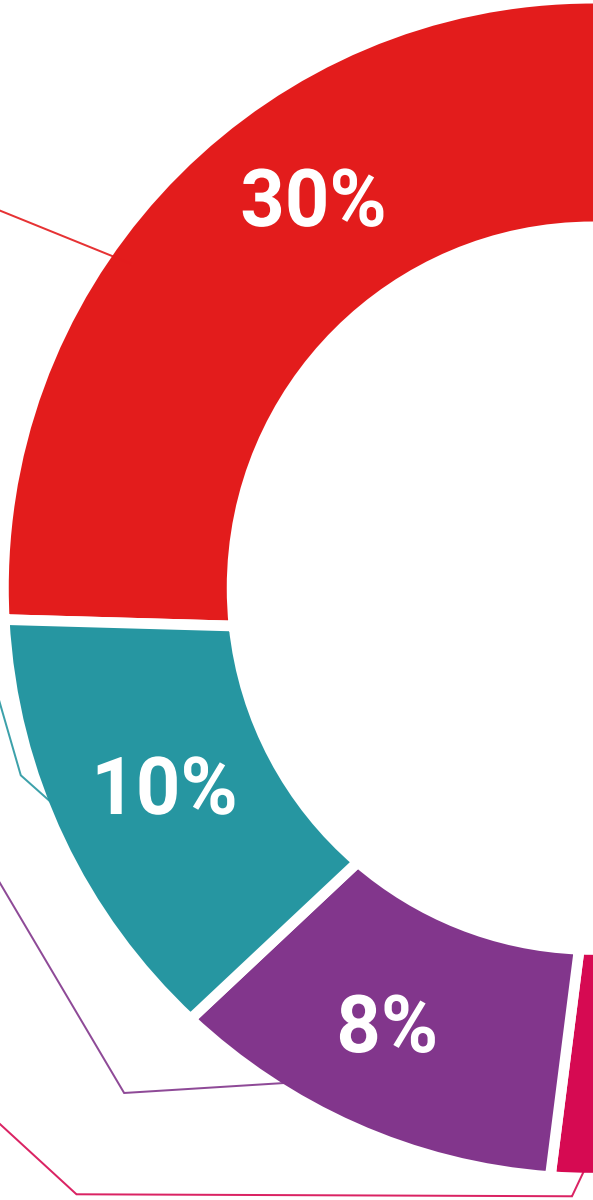
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

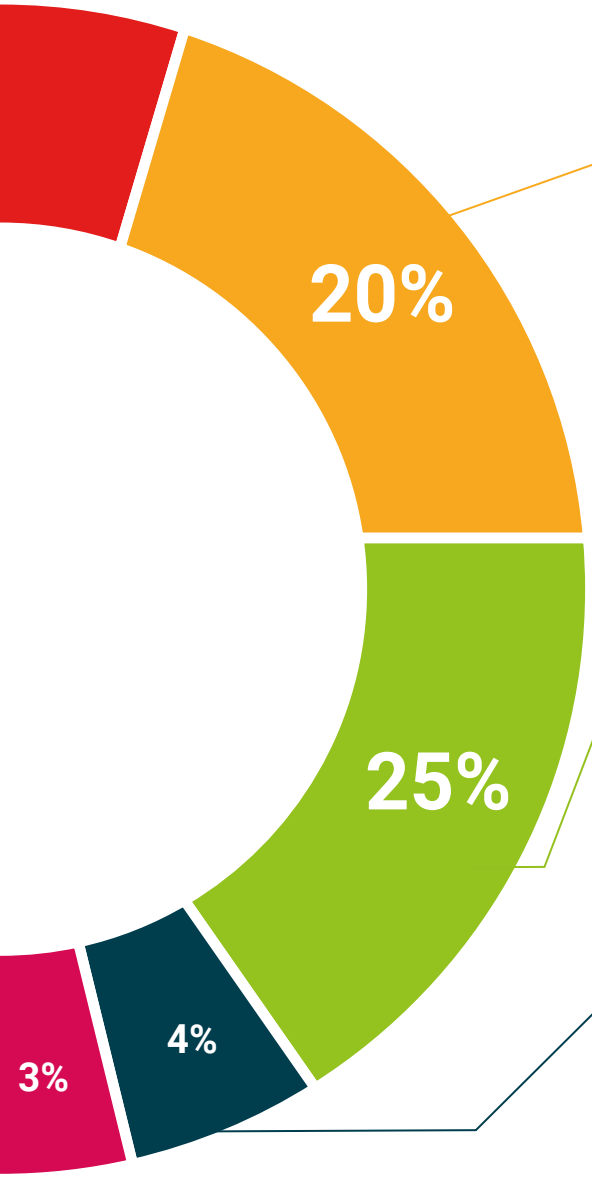
Practising Skills and Abilities

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 Design Debugging with BIM Modeling 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 Design Debugging with BIM Modeling** 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 Design Debugging with BIM Modeling**

Official Nº of hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Design Debugging with BIM Modeling

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.

tech technological university

Postgraduate Certificate

Design Debugging with BIM Modeling

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

Postgraduate Certificate

Design Debugging with BIM Modeling

tech technological university