



Postgraduate Certificate Irrigation Network 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/irrigation-network-design

Index

 $\begin{array}{c|c} 01 & 02 \\ \hline & Dijectives \\ \hline & 03 \\ \hline & Course Management \\ \hline & & P. 12 \\ \hline \end{array}$

06 Certificate

p. 28





tech 06 | Introduction

Irrigation is one of the procedures that allows the efficient distribution of water. Nowadays there are different types of irrigation and, with the advance of new technologies, new and increasingly sophisticated options have appeared. The aim is to create a system that is inclusive and respects both society and the communities as well as the natural ecosystem in which it is implemented. That is why experts in hydraulic engineering continue to search for the best methods for distributing water to crops, plants or trees. There are usually many variants that can be configured to achieve the desired irrigation, respecting and thinking about the preservation of the environment.

For this reason, scientific studies have not ceased in this area of knowledge to find the appropriate techniques and materials indicated to not harm any of the parties in this type of process, clarifying that professionals will have to be at the forefront in the irrigation sector. Therefore, this Postgraduate Certificate will provide the students with updated tools on the design of irrigation networks and a focus on developing the general aspects that make up a network.

Students will expand their knowledge in areas related to the development of the main criteria for the design of the elements that are part of the system. This is a program that integrates a specialized professional team, and also has multimedia resources of the highest quality, offering dynamism and convenience with the online mode.

TECH provides with this program the most recent developments in Hydraulic Infrastructure. For this reason, it focuses on excellence and comfort, being a qualification that has great flexibility as it only requires an electronic device with Internet access and thus easily access the virtual platform from anywhere, 24 hours a day.

This **Postgraduate Certificate in Irrigation Network 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



In this course you will be part of the creation of new inclusive irrigation systems that respect the natural ecosystem"



If as a civil engineer you want to be at the forefront in the design of irrigation networks, with TECH you will acquire the tools to do it"

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.

You will deepen in specific areas such as the development of the main criteria for the design of the elements that are part of the hydraulic system.

TECH offers the graduates a complete program with the most innovative updates in hydraulic works.







tech 10 | Objectives



General Objectives

- Develop new knowledge on irrigation, problems, solutions, infrastructure and new technologies
- Determine the main elements that make up an irrigation network according to the different typologies
- Establish the main design criteria of the elements that make up the network
- Analyze the use and application of the BIM methodology in the design, modeling and operation of networks of networks



Objectives | 11 tech





Specific Objectives

- Specify the factors involved in irrigation
- Address the fundamentals of irrigation network design
- Develop the general aspects that make up an irrigation network
- Determine the main criteria for sizing irrigation networks
- Analyze solutions using drip and sprinkler network techniques
- Apply BIM methodology in the design and analysis of irrigation networks
- Examine BIM deliverables of an irrigation network providing the student with knowledge applicable to any piping system



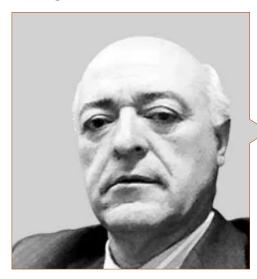
Improving your irrigation networking skills will boost your professional and personal career in just 6 weeks of 100% online academic experience"





tech 14 | Course Management

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

Mr. Rubio González, Carlos

- Head of the Development Department at TEAMBIMCIVIL S.L.
- Specialist at the Interuniversity Institute for Research on the Earth System in Andalusia at the University of Granada
- ◆ Civil Engineer at TEAMBIMCIVIL S.L
- Double Master in Civil Engineering and Environmental Hydraulics by the University of Granada
- Master's Degree in Technology and Management of the Integral Water Cycle from the University of Seville
- Degree in Civil Engineering from the University of Seville with mention in Hydrology
- Lecturer in specialization courses on BIM Modeling of Water Supply and Irrigation Networks



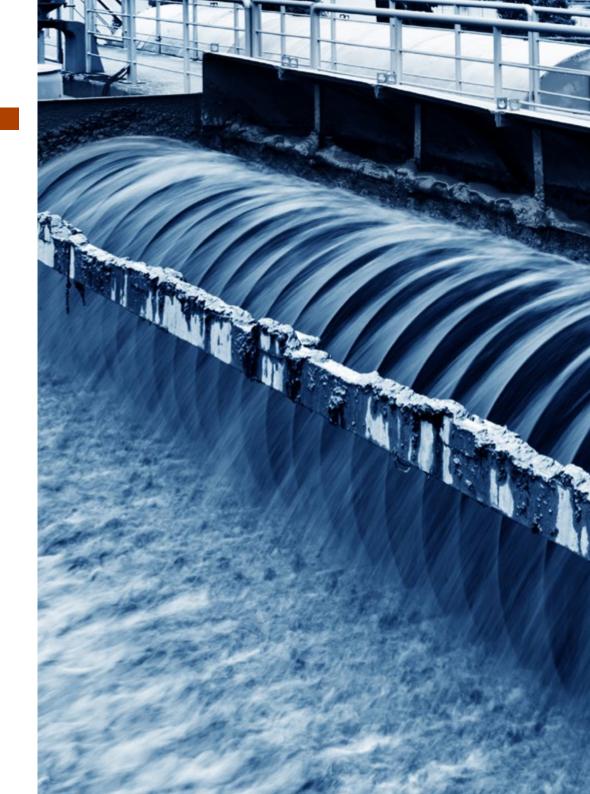


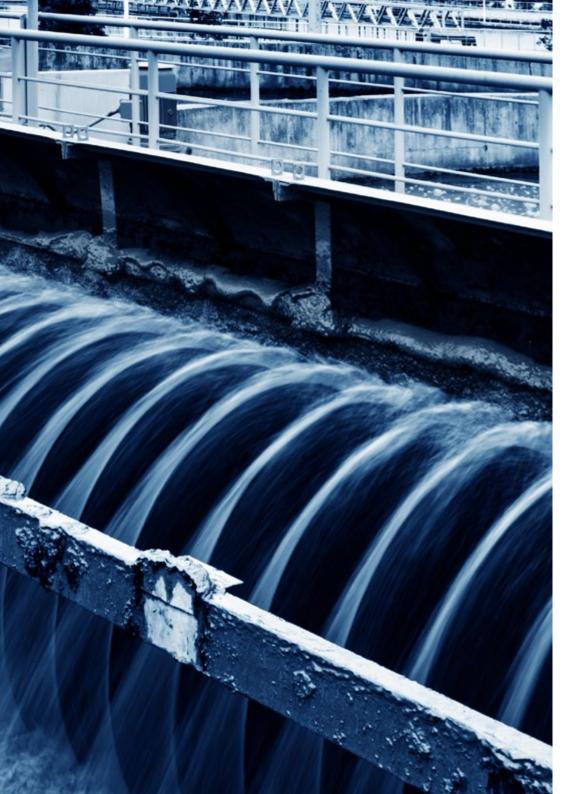


tech 18 | Structure and Content

Module 1. Irrigation. Elements and Design

- 1.1. Irrigation networks
 - 1.1.1. Irrigation network
 - 1.1.2. Physical characteristics of the soil
 - 1.1.3. Factors influencing irrigation
 - 1.1.4. Soil water storage
 - 1.1.5. Irrigation dosage
 - 1.1.6. Crop water requirements
- 1.2. Types of irrigation
 - 1.2.1. Gravity irrigation
 - 1.2.2. Sprinkler irrigation
 - 1.2.3. Drip irrigation
- 1.3. Pressure networks Hydraulic fundamentals
 - 1.3.1. Flow energy
 - 1.3.2. Bernoulli's Equation
 - 1.3.3. Energy losses in pipelines
- 1.4. Sprinkler irrigation networks Features
 - 1.4.1. Sprinklers
 - 1.4.2. System Types
 - 1.4.3. Hydraulic characteristics of sprinklers
 - 1.4.4. Distribution of sprinklers in conventional systems
 - 1.4.5. Uniformity and efficiency
- 1.5. Sizing of sprinkler irrigation networks
 - 1.5.1. Design Criteria
 - 1.5.2. Side branches
 - 1.5.3. Distribution Networks
- 1.6. Drip irrigation networks
 - 1.6.1. System Components
 - 1.6.2. Uniformity and efficiency
 - 1.6.3. Installation diagram
 - 1.6.4. Micro-sprinkler





Structure and Content | 19 tech

- 1.7. Dimensioning of drip irrigation systems
 - 1.7.1. Design Criteria
 - 1.7.2. Side branches
 - 1.7.3. Bypass piping
 - 1.7.4. Distribution piping
- 1.8. Modeling of irrigation networks in Civil 3D
 - 1.8.1. Elements catalog
 - 1.8.2. Network modeling
 - 1.8.3. Irrigation network profile
- .9. Modeling of retention basins in Civil 3D
 - 1.9.1. Flattening element
 - 1.9.2. Footprint design
 - .9.3. Volume measurements
- 1.10. Deliverables of an irrigation network
 - 1.10.1. Plan alignment drawings
 - 1.10.2. Plan and profile drawings
 - 1.10.3. Transversal Sections and Measurements



TECH has multimedia resources that will provide you with greater dynamics during the development of the program"





tech 22 | Methodology

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.

tech 24 | Methodology

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.



Methodology | 25 tech

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.



Methodology | 27 tech



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.



25%

4%

3%





tech 30 | Certificate

This program will allow you to obtain your **Postgraduate Certificate in Irrigation Network 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 Irrigation Network Design

Modality: online

Duration: 6 weeks

Accreditation: 6 ECTS



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

Postgraduate Certificate in Irrigation Network 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



^{*}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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