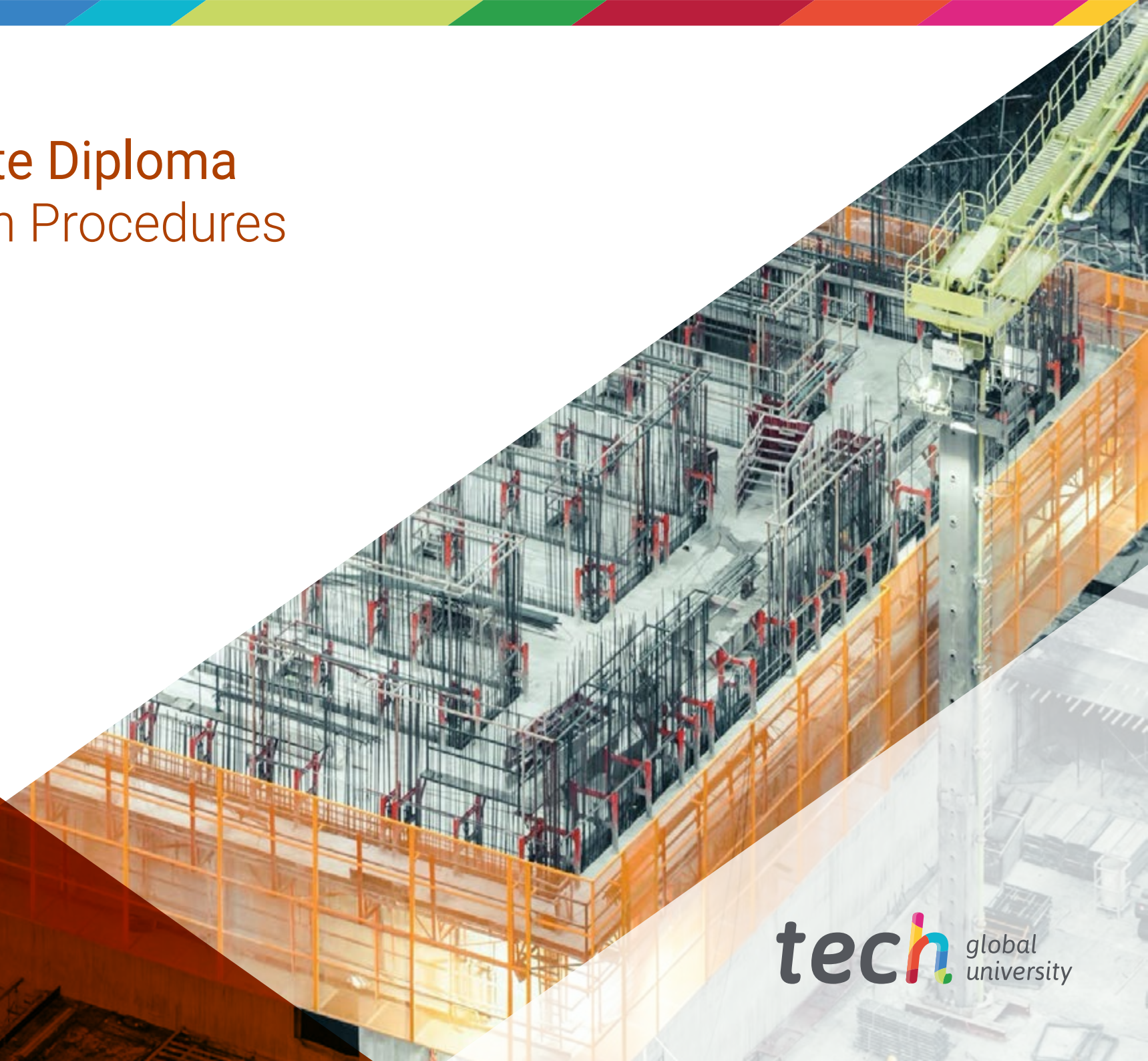


# Postgraduate Diploma Construction Procedures





## Postgraduate Diploma Construction Procedures

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/engineering/postgraduate-diploma/postgraduate-diploma-construction-procedures](http://www.techtute.com/us/engineering/postgraduate-diploma/postgraduate-diploma-construction-procedures)

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# 01

# Introduction

The new construction methods in Civil Engineering have revolutionized the sector, representing an important advance in soil decontamination processes, bridge management systems, and various types of building installations. This represents an outstanding opportunity for any engineer in the sector, as they will be able to give a significant boost to their career through technological and cutting-edge innovation. This TECH program offers an opportunity to comprehensively examine all the most important developments in Construction Procedures, relying on a fully online syllabus and the highest quality content, without requiring face-to-face classes or imposing pre-set schedules on the student.





“

*Get updated on the most relevant Construction Procedures today and stand out as an engineer prepared for all the present and future challenges of Civil Engineering"*

A high level of expertise in the technical knowledge of structural maintenance, load-bearing wall solutions, and ground treatment methodologies can be a decisive turning point in the career of any civil engineer. Therefore, it is essential to keep up to date on these and other issues, covering precisely the construction and building procedures.

This Postgraduate Diploma delves, through high-quality multimedia material, into these issues. Therefore, an indispensable opportunity is given to the engineer who wants to stand out in his professional career, providing him with the latest innovations in singular structures, chemical injections, action planning, and enclosures and finishes, among other very interesting vicissitudes.

In addition, all of this is offered in a 100% online format, which makes it possible to combine the most demanding professional or personal responsibilities with academic work. In this way, all the contents are available for download in the Virtual Campus and can be accessed from the student's smartphone, tablet, or computer.

This **Postgraduate Diploma in Construction Procedures** 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
- ◆ 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



*Give a significant boost to your professional career by including this Postgraduate Diploma in your CV"*

“

*Access a syllabus rich in content, where you will find a large number of real-life examples and practical and practical analysis that contextualizes the topics covered”*

The program's teaching staff includes professionals from the 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 professional 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 professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

*Delve into walkway works and other structures such as walkways, gantries, and banners in this 450-hour Postgraduate Diploma.*

*Get up to date on the most significant costs, criteria, concepts, and advantages of building maintenance.*



# 02

# Objectives

The main objective of this Postgraduate Diploma is to provide the engineer with the most advanced tools and knowledge in the field of Construction Procedures. This is done in order to update you in the most important areas of your profession so that you can enrich your value proposition through the most relevant technological and material innovation of recent years.







“

*Specialize in today's most important single maintenance actions, renovation operations, and technical inspection criteria"*



## General Objectives

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- ◆ Autonomous learning of new knowledge and techniques suitable for Civil Engineering
- ◆ To know in detail the nature, characteristics, and performance of the new construction materials that have been investigated in recent years
- ◆ Understand and use the language of engineering and the terminology of Civil Engineering
- ◆ Delve in a scientific and technical way in the activity of the profession of Public Works Technical Engineer with knowledge of the functions of consultancy, analysis, design, calculation, project, construction, maintenance, conservation, and operation



*Achieve your most ambitious professional goals thanks to a university program that will take you to the forefront of construction engineering"*





## Specific Objectives

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### Module 1. Construction Procedures I

- ◆ Acquire a thorough knowledge of the different types of existing land treatments
- ◆ Analyze the range of existing typologies and their correspondence with the improvement of the different properties
- ◆ Know precisely the variables that are found in the processes of land improvement by injection Consumption, requirements, advantages and disadvantages
- ◆ Present, in an extensive way, gravel column treatments as elements of land treatment of relatively little use, but with remarkable technical applications
- ◆ In-depth presentation of soil treatments by chemical treatment and freezing, as little-known treatments, but with very good spot applications
- ◆ Define the applications of preloading (preconsolidation), which was covered in a previous module, as an element of soil treatment to accelerate the evolution of soil behavior
- ◆ Complete the knowledge of one of the most used ground treatments in subway works, such as micropile umbrellas, defining applications different from the usual ones and the characteristics of the process
- ◆ Deal in detail with soil decontamination as a land improvement process, defining the typologies that can be used

### Module 2. Construction Procedures II

- ◆ Analyze how the life cycle of structures is managed through structure management systems
- ◆ Understand, in detail, the different types of structural inspection, which players are involved, what methods are used and how the severity index is assessed
- ◆ Establish the different types of structural maintenance and how they are managed
- ◆ Gain an in-depth understanding of some of the unique maintenance operations

### Module 3. Building

- ◆ Prepare for the application of the necessary legislation during the exercise of the profession of technical engineer of public works
- ◆ Understand the design, calculation, construction, and maintenance of building works in terms of structure, finishes, installations, and equipment

# 03

# Structure and Content

In addition to including numerous detailed videos and interactive summaries, the syllabus incorporates a vast amount of complementary readings for each topic covered. In this way, the engineer will be able to delve deeper into those issues that generate greater professional interest, accumulating an extensive and detailed bibliography of the most innovative construction procedures. All this with the comfort of being accessible 24 hours a day from any device with an Internet connection.





“

*Delve into all the high-quality multimedia documents that you will find in the Virtual Campus, made from the prism of the most rigorous professional experience”*

## Module 1. Construction Procedures I

- 1.1. Objectives, Movements and Property Enhancement
  - 1.1.1. Internal and Global Property Enhancement
  - 1.1.2. Practical Objectives
  - 1.1.3. Improvement of Dynamic Behaviours
- 1.2. Improvement by High Pressure Mixing Injection
  - 1.2.1. Typology of Soil Improvement by High-pressure Grouting
  - 1.2.2. Characteristics of *Jet-Grouting*
  - 1.2.3. Injection Pressures
- 1.3. Gravel Columns
  - 1.3.1. Overall Use of Gravel Columns
  - 1.3.2. Quantification of Land Property Improvements
  - 1.3.3. Indications and Contraindications of Use
- 1.4. Improvement by Impregnation and Chemical Injection
  - 1.4.1. Characteristics of Injections and Impregnation
  - 1.4.2. Characteristics of Chemical Injections
  - 1.4.3. Method Limitations
- 1.5. Freezing
  - 1.5.1. Technical and Technological Aspects
  - 1.5.2. Different Materials and Properties
  - 1.5.3. Application and Limitation Fields
- 1.6. Preloading, Consolidations and Compactions
  - 1.6.1. Preloading
  - 1.6.2. Drained Preloading
  - 1.6.3. Control During Ejection
- 1.7. Improvement by Drainage and Pumping
  - 1.7.1. Temporary Drainage and Pumping
  - 1.7.2. Utilities and Quantitative Improvement of Properties
  - 1.7.3. Behavior After Restitution

- 1.8. Micropile Umbrellas
  - 1.8.1. Ejection and Limitations
  - 1.8.2. Resistant Capacity
  - 1.8.3. Micropile Screens and Grouting
- 1.9. Comparison of Long-term Results
  - 1.9.1. Comparative Analysis of Land Treatment Methodologies
  - 1.9.2. Treatments According to Their Practical Application
  - 1.9.3. Combination of Treatments
- 1.10. Soil Decontamination
  - 1.10.1. Physicochemical Processes
  - 1.10.2. Biological Processes
  - 1.10.3. Termical Processes

## Module 2. Construction Procedures II

- 2.1. Evolution of Structures
  - 2.1.1. Roman Engineering
  - 2.1.2. Evolution of Materials
  - 2.1.3. Evolution of Structural Design
- 2.2. Passage Works
  - 2.2.1. Pontoon
  - 2.2.2. Bridge
  - 2.2.3. Singular Works for the Preservation of Wildlife
- 2.3. Other Structures
  - 2.3.1. Walls and Retaining Elements
  - 2.3.2. Footbridges
  - 2.3.3. Porticos and Banners
- 2.4. Small Masonry and Drainage Works
  - 2.4.1. Spouts
  - 2.4.2. Culverts
  - 2.4.3. Sewers
  - 2.4.4. Drainage Elements in Structures

- 2.5. Bridge Management System
  - 2.5.1. Inventory
  - 2.5.2. Systematization of Structure Management
  - 2.5.3. Severity Rates
  - 2.5.4. Planning of Actions
- 2.6. Inspection of Structures
  - 2.6.1. Routine Inspections
  - 2.6.2. General Major Inspections
  - 2.6.3. Detailed Major Inspections
  - 2.6.4. Special Inspections
- 2.7. Structural Maintenance
  - 2.7.1. Ordinary Maintenance
  - 2.7.2. Renovation Operations
  - 2.7.3. Rehabilitation
  - 2.7.4. Reinforcements
- 2.8. Singular Maintenance Actions
  - 2.8.1. Expansion Joints
  - 2.8.2. Support
  - 2.8.3. Concrete Walls
  - 2.8.4. Adequacy of Containment Systems
- 2.9. Singular Structures
  - 2.9.1. By Design
  - 2.9.2. For its Light
  - 2.9.3. For its Materials
- 2.10. The Value of Structures
  - 2.10.1. Asset Management
  - 2.10.2. Collapse. Unavailability Costs
  - 2.10.3. Equity Value

### Module 3. Building

- 3.1. Introduction
  - 3.1.1. Introduction to Building
  - 3.1.2. Concept and Importance
  - 3.1.3. Functions and Parts of the Building
  - 3.1.4. Technical Regulations
- 3.2. Previous Operations
  - 3.2.1. Superficial Foundations
  - 3.2.2. Deep foundations
  - 3.2.3. Retaining Walls
  - 3.2.4. Basement Walls
- 3.3. Load-Bearing Wall Solutions
  - 3.3.1. From Factory
  - 3.3.2. Concrete
  - 3.3.3. Rationalized Solutions
  - 3.3.4. Prefabricated Solutions
- 3.4. Structures
  - 3.4.1. Slab Structures
  - 3.4.2. Static Structural Systems
  - 3.4.3. Unidirectional Slabs
  - 3.4.4. Waffle Slabs
- 3.5. Building Facilities I
  - 3.5.1. Plumbing
  - 3.5.2. Water Supply
  - 3.5.3. Sanitation
  - 3.5.4. Water Drainage
- 3.6. Building Facilities II
  - 3.6.1. Electrical Installations
  - 3.6.2. Heating

- 3.7. Enclosures and Finishing I
  - 3.7.1. Introduction
  - 3.7.2. Physical Protection of the Building
  - 3.7.3. Energy Efficiency
  - 3.7.4. Noise Protection
  - 3.7.5. Moisture Protection
- 3.8. Enclosures and Finishing II
  - 3.8.1. Flat Roofs
  - 3.8.2. Sloping Roofs
  - 3.8.3. Vertical Enclosures
  - 3.8.4. Interior Partitions
  - 3.8.5. Partitions, Carpentry, Glazing and Fenders
  - 3.8.6. Coatings
- 3.9. Facades
  - 3.9.1. Ceramics
  - 3.9.2. Concrete Blocks
  - 3.9.3. Panels
  - 3.9.4. Curtain Walls
  - 3.9.5. Modular Construction
- 3.10. Building Maintenance
  - 3.10.1. Building Maintenance Criteria and Concepts
  - 3.10.2. Building Maintenance Classifications
  - 3.10.3. Building Maintenance Costs
  - 3.10.4. Maintenance and Equipment Usage Costs
  - 3.10.5. Building Maintenance Advantages







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*By downloading all available content,  
you will have a privileged reference  
guide on Construction Procedures”*

04

# 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.



05

# Certificate

The Postgraduate Diploma in Construction Procedures guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.



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*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 Diploma in Construction Procedures** 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 Diploma in Construction Procedures**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



\*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.

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present quality  
development languages  
virtual classroom



## Postgraduate Diploma Construction Procedures

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
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- » Exams: online

# Postgraduate Diploma Construction Procedures

