Postgraduate Certificate
Backend for GIS

tech technological university

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Postgraduate Certificate

Backend for GIS

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

Website: **www.techtitute.com/us/engineering/postgraduate-certificate/backend-gis**

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01

Introduction

In today's world, data acquired in different processes must be stored on a server so that access to them is fast and agile. Therefore, this program shows the engineer the appropriate storage systems for the data that they need to know about. Over the course of 6 weeks and in a completely online format, the professional will learn about and use in real cases the most used and future-proof servers that will allow them to process data and show the results in an appropriate way. In this way, the engineer will be able to apply all the knowledge acquired in their day-to-day work, in order to increase their level of professionalism.

Work as an engineer specialized in GIS by correctly managing the tools specific to this sector which you will learn about in this program"

In Geomatics, the acquired data has special characteristics, so it is important as an engineer to have specialized knowledge about database engines with capabilities to store them properly.
Each server has its own specific features and works with different programming languages.

In this course, the graduate will learn about each one of them, which will allow them to discern which one is the most appropriate for their performance according to the programming language they will use later on. In addition, it is committed to open source and the OSGeo standard of the Geospatial Foundation.

Thanks to this program that merges theory with practice, in just 6 weeks, the student will acquire a deep, current and accurate basis to move with total certainty in the world of *Backend* for Geographic Information Systems (GIS). A 100% online, unique and complete study opportunity that only TECH could offer.

This **Postgraduate Certificate in Backend for GIS** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- The development of case studies presented by experts in Backend for GIS.
- 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 the self-assessment process can be carried out to improve learning
- 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

This Postgraduate Certificate in Backend for GIS will give your professional engineering career a boost towards excellence"

You will discover the impact of all the geographic information systems involved in the production of a project and learn how to successfully improve its effectiveness and productivity"

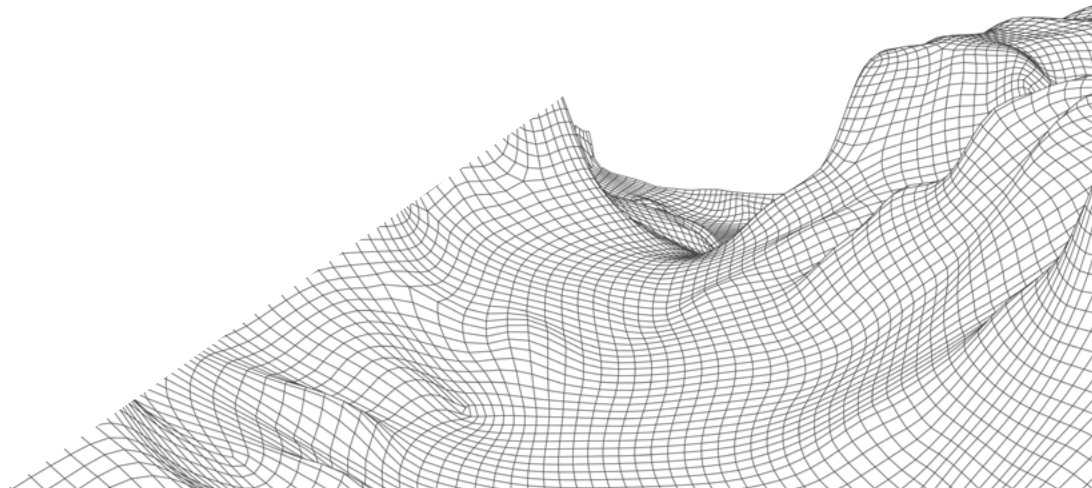
Gain in-depth knowledge in the keys for generating projects with GIS through this specialized Postgraduate Certificate at TECH.

TECH is adapted to you and for that reason, it offers this totally online program so that you can study whenever, wherever and however you want.

The teaching staff of this program includes professionals from the industry, who contribute the experience of their work to this program, in addition to recognized specialists from reference 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 learning 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 throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Objectives

Through this program, engineering professionals will acquire the knowledge required to work on Geographical Information Systems, taking into consideration all the processes required to ensure that the web functions correctly, i.e., paying attention to the *Backend*. For this purpose, we have developed the essential theoretical content that will provide students with the necessary knowledge and tools to move on to practice, which will be developed intensively throughout the program.

Evaluating the Nginx server as an alternative to Apache server will be one of your objectives”

General Objectives

- Evaluate the different database engines and their benefits
- Analyze the most used web servers with more projection and prestige
- Develop servers recommended by the Geospatial Foundation
- Identify the best *Backend* solutions for specific projects

Thanks to TECH, you will be able to develop servers recommended by the Geospatial Foundation"

Specific Objectives

- Generate specialized knowledge about Apache server to share results online
- Evaluating Nginx server as an alternative to Apache server
- Analyze the Tomcat server as an application server and other application servers
- Browse MySQL, Postgres and SQLite database engine
- Determine which database engine to choose for a particular project

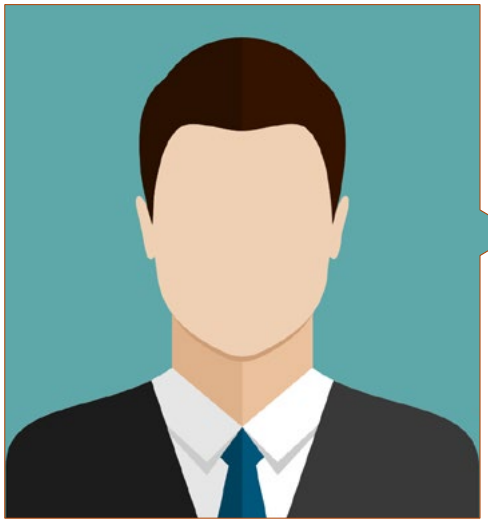
03

Course Management

This Postgraduate Certificate at TECH is taught by highly prestigious professionals in this field of engineering and corporate system management such as *Backend*, who contribute their years of work experience, as well as the knowledge they have acquired from research in the field, to the program. All this, to bring to the engineer a highly skilled program, which will enable them to manage geographic information systems.

Thanks to the excellence of professionals who have contributed their knowledge to this program, you can acquire the skills you need in the field of Backend"

Management



Mr. Puértolas Salañer, Ángel Manuel

- Application development in .Net environment, Python development, SQL Server database management, system administration. ASISPA
- Topographical Surveyor Study and reconstruction of roads and accesses to towns. Ministry of Defence Embedded with UN forces in Lebanon
- Topographical Surveyor Topography per Project Ministry of Defence
- Topographical Surveyor Georeferencing of the old cadastre of the province of Murcia (Spain). Geoinformation and Systems S.L
- Technical Engineer in Topography from the Polytechnic University Valencia
- Master's Degree in Cybersecurity from MF Business School and the Camilo José Cela University
- Web management, server administration and task development and automization in Python Milcom
- Development of applications in .Net environment. SQL Server management Own software support Ecomputer

Professors

Mr. Porto Tapiquén, Carlos Efraín

- Analyst, consultant and cartographer in Geographic Information Systems
- Professor of Geographic Information Systems in the Master's Degree in Territorial Planning
- Instructor of Extension Courses in GIS and Digital Cartography
- Master's Degree in Remote Sensing and GIS
- Degree in Geography from the Universidad Central de Venezuela

04

Structure and Content

The structure of the contents of this program has been designed by engineering professionals with a special focus on *Backend*. In this way, they have contributed their knowledge and experience in the realization of a complete and up-to-date syllabus, in line with TECH's quality standard. The syllabus includes the main software design patterns. Therefore, this curriculum is essential for students to acquire all the knowledge they need to be competent in their day-to-day work in this sector.

You will look at the main software design patterns to determine which database engine to choose for your project”

Module 1. Software Design Patterns

1.1. Apache Web Server
- 1.1.1. Apache Web Server
- 1.1.2. Installation
- 1.1.3. Anatomy of the Apache Server
  - 1.1.3.1. Standard Content Folders
  - 1.1.3.2. *Logs*
- 1.1.4. Settings
- 1.1.5. Support Programming Languages
  - 1.1.5.1. Php
  - 1.1.5.2. Perl
  - 1.1.5.3. Ruby
  - 1.1.5.4. Others

1.2. Nginx Web Server
- 1.2.1. Nginx Web Server
- 1.2.2. Installation
- 1.2.3. Features

1.3. Tomcat Web Server
- 1.3.1. Tomcat Web Server
- 1.3.2. Installation
- 1.3.3. Maven Plugin
- 1.3.4. Connectors

1.4. GeoServer
- 1.4.1. GeoServer
- 1.4.2. Installation
- 1.4.3. Using the ImageMosiac Plugin

1.5. MapServer
- 1.5.1. MapServer
- 1.5.2. Installation
- 1.5.3. Mapfile
- 1.5.4. MapScript
- 1.5.5. MapCache

1.6. Deegree
- 1.6.1. Deegree
- 1.6.2. Characteristics of Deegree
- 1.6.3. Installation
- 1.6.4. Settings
- 1.6.5. Use

1.7. QGIS Server
- 1.7.1. QGIS Server
- 1.7.2. Installation in Ubuntu
- 1.7.3. Capabilities
- 1.7.4. Settings
- 1.7.5. Use

1.8. PostgreSQL
- 1.8.1. PostgreSQL
- 1.8.2. Installation
- 1.8.3. Posgis
- 1.8.4. PgAdmin

1.9. SQLite
- 1.9.1. SQLite
- 1.9.2. Spatialite
- 1.9.3. Spatialite-gui
- 1.9.4. Spatialite-tools
  - 1.9.4.1. General Tools
  - 1.9.4.2. OSM Tools
  - 1.9.4.3. XML Tools
  - 1.9.4.5. VirtualPG

1.10. MySQL
- 1.10.1. MySQL
- 1.10.2. Spatial Data Types
- 1.10.3. phpMyAdmin

With this Postgraduate Certificate you will stand out professionally, boosting your career path towards the control of Geographic Information Systems"

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, students 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

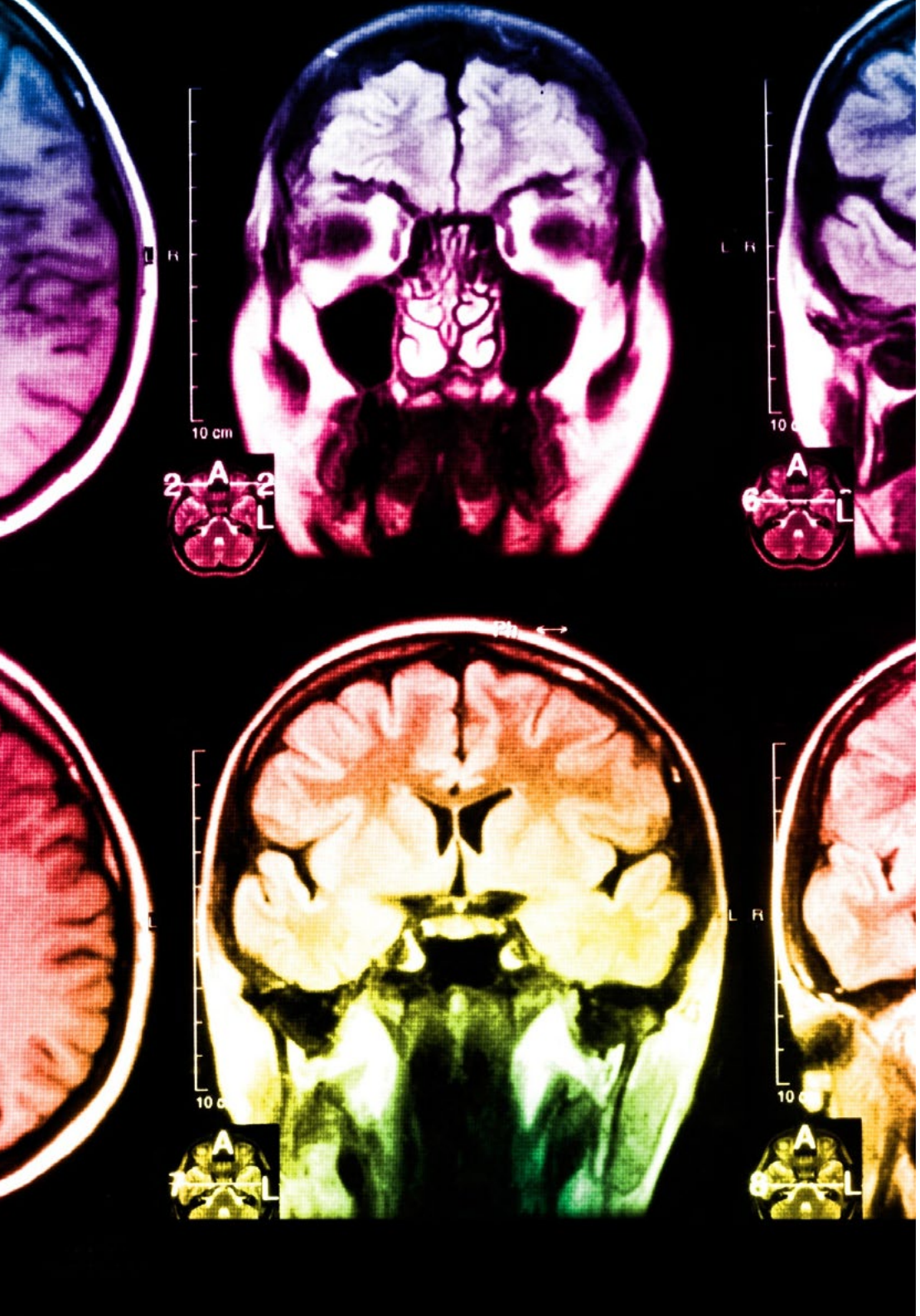
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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 adapted in 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.

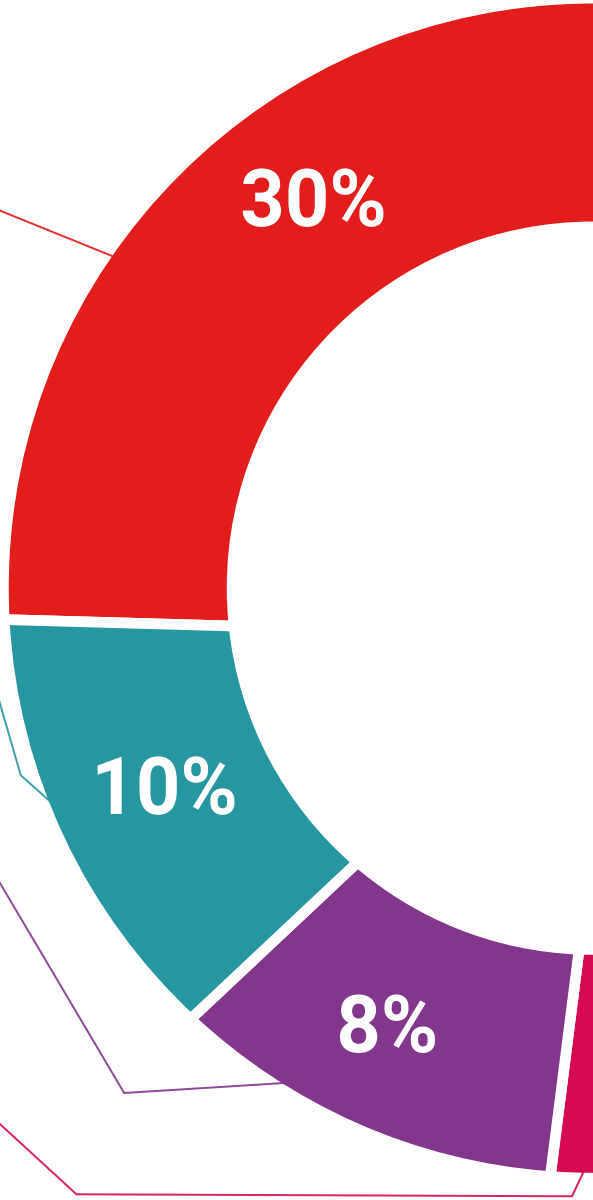
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

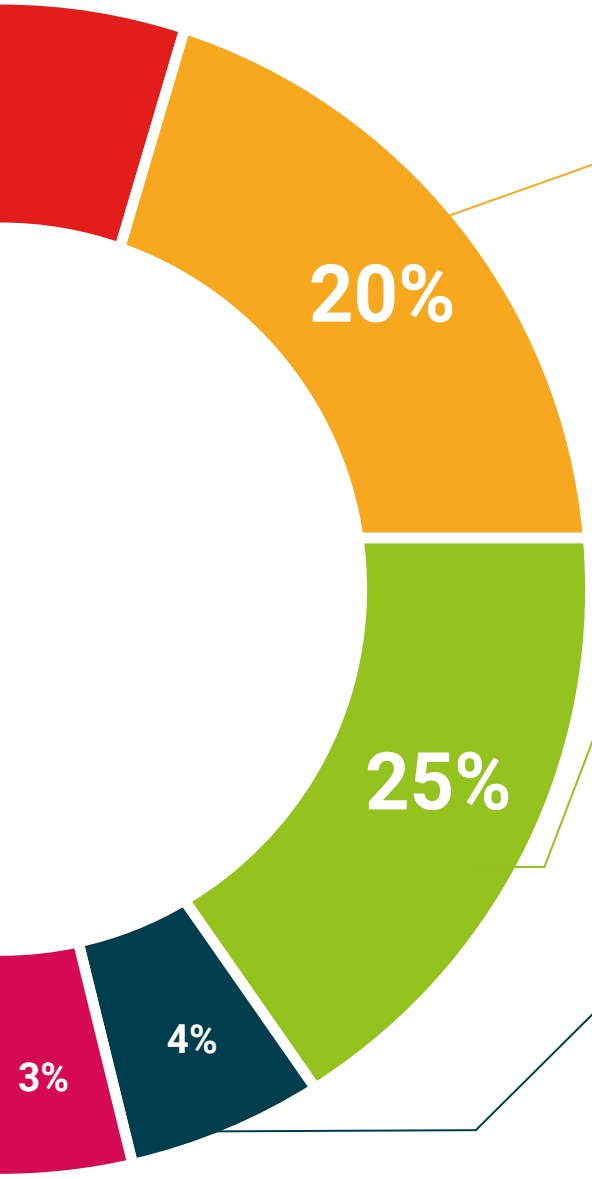
Practising Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic 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 Backend for GIS 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 Backend for GIS** 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 diploma 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 Backend for GIS**

Official Nº of Hours: **150 hours.**


tech technological university

Awards the following

DIPLOMA

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Backend for GIS

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

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