

# Postgraduate Diploma GIS (Geographical Information Systems)



## Postgraduate Diploma GIS (Geographical Information Systems)

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

Website: [www.techtute.com/in/engineering/postgraduate-diploma/postgraduate-diploma-gis-geographical-information-systems](http://www.techtute.com/in/engineering/postgraduate-diploma/postgraduate-diploma-gis-geographical-information-systems)

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# 01

# Introduction

This program delves into the latest developments in geographic information systems, thus offering the engineer the best tools for the creation of maps with vector and raster models. Therefore, throughout this program, the professional will discover the most recent advances in issues such as georeferencing systems, GNSS technologies, the differences between a CAD and a GIS or the visualization of elements in QGIS. And they will do so with the help of an expert teaching staff made up of active professionals and with a 100% online teaching methodology that adapts to the personal circumstances of each student.



“

*Integrate the latest developments in geographic information systems into your practice and create accurate maps with vector and raster models”*

The application of new digital technologies has revolutionized the geomatics sector. Therefore, the emergence of disruptive software in the area of geographic information systems has enabled professionals in this field to incorporate tools that can facilitate and make their work more precise. This Postgraduate Diploma responds to this situation, providing the engineer with the most innovative techniques.

In this way, this qualification provides an in-depth study of issues such as cartographic projections, geodesy, the UTM coordinate system, cadastral valuation, urban planning legislation, positioning systems, types of data viewers, and an analysis of the differences between heavy and light clients and the vector model, among many others.

This is achieved through a flexible online learning system that allows the student to choose the time and place to study, while enjoying numerous multimedia contents such as lectures, practical exercises, multimedia summaries or explanatory videos.

This **Postgraduate Diploma in GIS (Geographical Information Systems)** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ◆ Practical cases presented by experts in Topography, Civil Engineering and Geomatics
- ◆ 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



*Learn about all the possibilities offered by geographic information systems thanks to this Postgraduate Diploma"*

“ *Geographical Information Systems are a basic part of the field of geomatics. Gain in-depth knowledge of them with this specialized program*”

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.

*TECH's 100% online methodology will allow you to study without affecting your career. Don't think twice and enroll now.*

*Gain in-depth knowledge in the vector model in order to create the best topographic maps.*



# 02 Objectives

The main objective of this Postgraduate Diploma in GIS (Geographical Information Systems) is to provide the professional with the most innovative tools in this complex field of geomatics. Therefore, after they have finished the program, the student will have the best knowledge and will be able to directly and immediately apply powerful topographical techniques in their professional practice, creating precise vector and raster maps thanks to everything they have learned throughout the program.







“

*Progress professionally thanks to the innovative knowledge that you will master upon finishing this Postgraduate Diploma”*



## General Objectives

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- ◆ Plan, structure and develop expert reports
- ◆ Gather knowledge from different disciplines of topography and focus them towards the expert environment
- ◆ Establish the legislative environment in which expert topography takes place
- ◆ Determine expert topography as a branch of Geomatics
- ◆ Analyze the particularities of the cadaster in depth in order to identify the current characteristics that define/compose it
- ◆ Present the range of possibilities of the cadaster's service through the land registry
- ◆ Evaluate the positioning of urban and land planning within the concept of land, as well as the resources available on the Internet
- ◆ Determine the different positioning systems by studying their operation
- ◆ Develop GNSS systems and assess their capabilities
- ◆ Study the possible errors in GNSS systems
- ◆ Analyze the GNSS results obtained
- ◆ Plan, design and execute a cartographic plan with Geographic Information Systems (GIS)
- ◆ Gather, review and interpret terrain and geographically related information
- ◆ Plan, design and execute a demographic or other analysis study linked to geographic information
- ◆ Compile, set up and process navigation and GIS systems for implementation on mobile devices



## Specific Objectives

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### Module 1. Expert Topography

- ◆ Analyze the elements of property-oriented surveying
- ◆ Develop the concept of expert evidence
- ◆ Determine the structure of an expert report
- ◆ Establish the requirements for being an expert
- ◆ Analyze the performance mode of an expert witness
- ◆ Identify the different actors in an expert procedure

### Module 2. Cadaster and Urban Planning

- ◆ Evaluate the cadastral information system in the network
- ◆ Analyze cadastral mapping services and their different download formats
- ◆ Develop the fundamentals of cadastral value / valuation and land registry
- ◆ Determine the basis for urban planning
- ◆ Examine urban planning on the Internet

### Module 3. Geopositioning

- ◆ Create the reference systems and reference frames on which geopositioning is based
- ◆ Analyze the operation of Wlan, Wi-Fi, celestial and underwater positioning systems, paying special attention to GNSS and mobile systems
- ◆ Examine GNSS augmentation systems, their purpose and function
- ◆ Develop the signal propagation from its transmission on the satellite to its reception
- ◆ Discriminate the different GNSS observation methods and study differential GNSS systems and their protocols and standards
- ◆ Determining the positioning per precise point (PPP)
- ◆ Evaluate assisted positioning systems (A-GNSS) and their widespread use among mobile positioning systems

### Module 4. Geographical Information Systems

- ◆ Analyze the elements, process steps and storage essential to the management of a GIS
- ◆ Develop georeferenced cartographic maps with overlapping layers from various sources from various sources using GIS software
- ◆ Evaluate the topological problems that occur in processes with vector models
- ◆ Spatially analyze the different layers required for the project, developing studies of affected areas or specific space searches or other working environments
- ◆ Present projects analyzed by pixel functions and surfaces in raster layers to determine information of interest
- ◆ Work with digital terrain models and modeling, representing and visualizing territorial information on and below the earth's surface
- ◆ Consult routes and navigation *tracks* interacting in mobile device environments



*This program will provide you with the new tools you need to carry out your work. Enroll now”*

# 03

# Course Management

The teaching staff of this Postgraduate Diploma in GIS (Geographical Information Systems) is made up of practising professional with perfect knowledge of the latest innovations in GIS. Therefore, the student of this program will be in contact with real specialists who will transmit all the keys in this field, so that the student can later transfer them to their work.



“

*Study the best content, taught  
by the best professionals”*

## 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. Moll Romeu, Kevin

- ◆ Graduate in Geodesic Engineering, Topography and Cartography from the Polytechnic University of Valencia
- ◆ Soldier in the Air Force at the Alcantarilla Air Base

### Mr. Aznar Cabotá, Sergio

- ◆ Head of the GIS Department at Idrica
- ◆ GIS Analyst and Developer at Belike
- ◆ GIS Analyst and Developer at Aditelsa
- ◆ GIS Developer at Visual
- ◆ Engineer in Geodesy and Cartography in Valencia by the Polytechnic University of Valencia
- ◆ Technical Engineer in Topography in Valencia by the Polytechnic University of Valencia
- ◆ Professor at the Polytechnic University of Valencia for the University Expert Degree in Digital Technologies for the Agri-Food Sector



**Mr. Encinas Pérez, Daniel**

- ◆ Enusa Advanced Industries Environmental Center Head of the Technical and Topographical Office
- ◆ Ortigosa dismantling and excavations Head of Projects and Topography
- ◆ Epsa Internacional. Head of Production and Topography
- ◆ Palazuelos de Eresma Town Hall Topographic survey for Administration for the Mojón Partial Plan
- ◆ Degree in Engineering in Geomatics and Topography from the University of Salamanca
- ◆ Master's Degree in Cartographic Geotechnologies applied to Engineering and Architecture from the University of Salamanca (in progress)
- ◆ Higher Technician in Development of Urban Planning Projects and Topographic Operations
- ◆ RPAS Professional Pilot (Issued by Aerocámaras - AESA)

“Take the step to get up to date on the latest developments in GIS (Geographical Information Systems)”

# 04

# Structure and Content

This Postgraduate Diploma in GIS (Geographical Information Systems) is comprised of 4 modules, each one divided into 10 topics, which delve into questions such as orthometrics, topographic methods, visualization of elements in QGIS, the vector model, the superimposition of layers of different coverages with QGIS, the raster model or positioning in mobile devices, among many others.







“

*This syllabus contains the best knowledge in Geographic Information Systems. Don't wait any longer. This is the opportunity you were looking for”*

## Module 1. Expert Topography

- 1.1. Classic Topography
  - 1.1.1. Total Station
    - 1.1.1.1. Stationing
    - 1.1.1.2. Automatic Monitoring Total Station
    - 1.1.1.3. Measurement without a Prism
  - 1.1.2. Coordinate Transformation
  - 1.1.3. Topographic Methods
    - 1.1.3.1. Free Stationing
    - 1.1.3.2. Measuring Distance
    - 1.1.3.3. Stakeout
    - 1.1.3.4. Area Calculation
    - 1.1.3.5. Remote Height
- 1.2. Cartography
  - 1.2.1. Cartographic Projections
  - 1.2.2. UTM Projection
  - 1.2.3. System of UTM Coordinates
- 1.3. Geodesy
  - 1.3.1. Geoid and Ellipsoid
  - 1.3.2. The Datum
  - 1.3.3. System of Coordinates
  - 1.3.4. Types of Elevations
    - 1.3.4.1. Height of the Geoid
    - 1.3.4.2. Ellipsoid
    - 1.3.4.3. Orthometric
  - 1.3.5. Geodetic Reference Systems
  - 1.3.6. Leveling Networks
- 1.4. Geopositioning
  - 1.4.1. Satellite Positioning
  - 1.4.2. Errors
  - 1.4.3. GPS
  - 1.4.4. GLONAS
  - 1.4.5. Galileo
  - 1.4.6. Positioning Methods
    - 1.4.6.1. Static
    - 1.4.6.2. Static-Rapid
    - 1.4.6.3. RTK
    - 1.4.6.4. Real Time
- 1.5. Photogrammetry and LIDAR Techniques
  - 1.5.1. Photogrammetry
  - 1.5.2. Digital Elevation Model
  - 1.5.3. LIDAR
- 1.6. Property-Oriented Topography
  - 1.6.1. Measuring Systems
  - 1.6.2. Boundaries
    - 1.6.2.1. Types
    - 1.6.2.2. Regulation
    - 1.6.2.3. Administrative Boundaries
  - 1.6.3. Easements
  - 1.6.4. Segregation, Division, Grouping and Aggregation

- 1.7. Property Registration
  - 1.7.1. Cadaster
  - 1.7.2. Property Registration
    - 1.7.2.1. Organization
    - 1.7.2.2. Registration Discrepancies
  - 1.7.3. Notary
- 1.8. Expert Test
  - 1.8.1. Expert Evidence
  - 1.8.2. Requirements for Being an Expert
  - 1.8.3. Types
  - 1.8.4. Expert Role
  - 1.8.5. Property Delimitation Tests
- 1.9. Expert Report
  - 1.9.1. Steps Before the Report
  - 1.9.2. People Involved in the Expert Procedure
    - 1.9.2.1. Judge-Magistrate
    - 1.9.2.2. Judicial Secretary
    - 1.9.2.3. Procurators
    - 1.9.2.4. Lawyers
    - 1.9.2.5. Plaintiff and Defendant
  - 1.9.3. Parts of the Expert Report

## Module 2. Cadaster and Urban Planning

- 2.1. The Cadaster
  - 2.1.1. Cadaster
- 2.2. The Real Estate Cadaster
  - 2.2.1. The Real Estate Cadaster
  - 2.2.2. Cadastral Mapping
  - 2.2.3. Cadastral Reference
  - 2.2.4. Descriptive and Graphic Cadastral Certification
- 2.3. Presence of the Cadaster on the Internet
  - 2.3.1. Cadastral Mapping
  - 2.3.2. Format of the Gml Inspire Download
    - 2.3.2.1. WMS Service to Visualize Maps
    - 2.3.2.2. WFS Download Service
    - 2.3.2.3. Atom Download Service
  - 2.3.3. Cadastral Mapping: *Shapefile* Format
  - 2.3.4. Cadastral Mapping: *Cat* Format
  - 2.3.5. Other Formats
- 2.4. Cadastral Valuation
  - 2.4.1. Cadastral Value
  - 2.4.2. Urban Cadastral Valuation
  - 2.4.3. Rustic Cadastral Valuation
  - 2.4.4. Ground Valuation
- 2.5. Property Registry and Notary's Office
  - 2.5.1. Simple Note and Certification
  - 2.5.2. Registration and Cadastral Reference
  - 2.5.3. Notary
  - 2.5.4. The Expert Geometer

- 2.6. The Real Estate Cadaster Coordination. Property Registration
  - 2.6.1. Cadaster and Registration
  - 2.6.2. Registered Property and Cadastral Parcel
  - 2.6.3. Cadastral - Registration Coordination
  - 2.6.4. Graphic Coordination
- 2.7. Urban and Regional Planning
  - 2.7.1. Urban and Regional Planning
  - 2.7.2. Planning Instruments
  - 2.7.3. Urban Planning Instruments
- 2.8. Presence of Urban Planning on the Internet
  - 2.8.1. Urban Planning and Urban Sustainability
  - 2.8.2. Urban Information Systems
  - 2.8.3. SIU Map Viewer
  - 2.8.4. Urban Planning
  - 2.8.5. Network Urban Planning

### Module 3. Geopositioning

- 3.1. Geopositioning
  - 3.1.1. Geopositioning
  - 3.1.2. Objectives of the Positioning
  - 3.1.3. Earth Movements
    - 3.1.3.1. Translation and Rotation
    - 3.1.3.2. Precession and Nutation
    - 3.1.3.3. Pole Movements
- 3.2. Georeferencing Systems
  - 3.2.1. Reference Systems
    - 3.2.1.1. International Terrestrial Reference Systems. ITRS
    - 3.2.1.2. Local Reference Systems. ETRS 89 (European Datum)
  - 3.2.2. Reference Framework
    - 3.2.2.1. International Territorial Reference Framework. ITRF
    - 3.2.2.2. International GNSS Reference Framework. Materialization of ITRS
  - 3.2.3. International Ellipsoids of Revolution GRS-80 and WGS-84

- 3.3. Positioning Mechanisms or Systems
  - 3.3.1. GNSS Positioning
  - 3.3.2. Mobile Positioning
  - 3.3.3. WLAN Positioning
  - 3.3.4. Wi-Fi Positioning
  - 3.3.5. Celestial Positioning
  - 3.3.6. Submarine Positioning
- 3.4. GNSS Technologies
  - 3.4.1. Types of Satellite According to Orbit
    - 3.4.1.1. Geostations
    - 3.4.1.2. Medium Orbit
    - 3.4.1.3. Low Orbit
  - 3.4.2. Multiconstellation GNSS Technologies
    - 3.4.2.1. NAVSTAR Constellation
    - 3.4.2.2. GALILEO Constellation
      - 3.4.2.2.1. Phases and Carrying Out the Project
  - 3.4.3. GNSS Clock or Oscillator
- 3.5. Augmentation Systems
  - 3.5.1. Satellite-Based Augmentation System (SBAS)
  - 3.5.2. Ground-Based Augmentation System (GBAS)
  - 3.5.3. Assisted GNSS (A-GNSS)

- 3.6. Propagation of the GNSS Signal
  - 3.6.1. GNSS Signal
  - 3.6.2. Atmosphere and Ionosphere
    - 3.6.2.1. Elements of Wave Propagation
    - 3.6.2.2. Behavior of the GNSS Signal
    - 3.6.2.3. Ionospheric Effect
    - 3.6.2.4. Ionospheric Models
  - 3.6.3. Troposphere
    - 3.6.3.1. Tropospheric Refraction
    - 3.6.3.2. Tropospheric Models
    - 3.6.3.3. Tropospheric Delays
- 3.7. GNSS Error Sources
  - 3.7.1. Satellite and Orbit Errors
  - 3.7.2. Atmospheric Errors
  - 3.7.3. Errors in Signal Reception
  - 3.7.4. Errors due to External Devices
- 3.8. Observation and GNSS Positioning Techniques
  - 3.8.1. Observation Methods
    - 3.8.1.1. By Type of Observable
      - 3.8.1.1.1. Code Observable/Pseudo Distances
      - 3.8.1.1.2. Phase Observable
    - 3.8.1.2. According to Receptor Action
      - 3.8.1.2.1. Static
      - 3.8.1.2.2. Kinematic
    - 3.8.1.3. According to Moment in Which the Calculation is Done
      - 3.8.1.3.1. Post-Process
      - 3.8.1.3.2. Real Time
      - 3.8.1.4. According to the Type of Solution
        - 3.8.1.4.1. Absolute
        - 3.8.1.4.2. Relative/ Difference
      - 3.8.1.5. According to Time of Observation
        - 3.8.1.5.1. Static
        - 3.8.1.5.2. Static-Rapid
        - 3.8.1.5.3. Kinematic
        - 3.8.1.5.4. RTK Kinematic
    - 3.8.2. Precise Point Positioning PPP
      - 3.8.2.1. Principles
      - 3.8.2.2. Advantages and Disadvantages
      - 3.8.2.3. Errors and Corrections
    - 3.8.3. Differential GNSS
      - 3.8.3.1. Kinematics in RTK Real Time
      - 3.8.3.2. NTRIP Protocol
      - 3.8.3.3. NMEA Standard
    - 3.8.4. Types of Receptors
  - 3.9. Analysis of Results
    - 3.9.1. Statistical Analysis of Results
    - 3.9.2. Test After Adjustment
    - 3.9.3. Error Detection
      - 3.9.3.1. Internal Reliability
      - 3.9.3.2. Baarda Test
    - 3.9.4. Error Figures
  - 3.10. Positioning of Mobile Devices
    - 3.10.1. A-GNSS Positioning Systems
    - 3.10.2. Location-Based System
    - 3.10.3. Satellite-Based Systems
    - 3.10.4. CELL ID Mobile Phone
    - 3.10.5. Wi-Fi Networks

## Module 4. Geographical Information Systems

- 4.1. Geographical Information Systems (GIS)
  - 4.1.1. Geographical Information Systems (GIS)
  - 4.1.2. Differences Between CAD and a GIC
  - 4.1.3. Types of Data Visualizers (Heavy or Light Clients)
  - 4.1.4. Types of Geographical Data
    - 4.1.4.1. Geographic Information
  - 4.1.5. Geographical Representations
- 4.2. Visualization of Elements in QGIS
  - 4.2.1. QGIC Installation
  - 4.2.2. Visualization of Data with QGIS
  - 4.2.3. Labelled Data with QGIS
  - 4.2.4. Overlaying Layers of Different Coverages with QGIS
  - 4.2.5. Maps
    - 4.2.5.1. Parts of a Map
  - 4.2.6. Printing a Plan with QGIS
- 4.3. Vector Model
  - 4.3.1. Types of Vector Geometries
  - 4.3.2. Attribute Tables
  - 4.3.3. Topology
    - 4.3.3.1. Topological Rules
    - 4.3.3.2. Application of Topologies in QGIS
    - 4.3.3.3. Application of Database Topologies
- 4.4. Vector Model. Operators
  - 4.4.1. Functional Criteria
  - 4.4.2. Spatial Analysis Operators
  - 4.4.3. Examples of Geospatial Operations
- 4.5. Generation of a Data Model with a Database
  - 4.5.1. Installation of PostgreSQL and POSTGIS
  - 4.5.2. Creation of a Geospatial Database with PGAdmin
  - 4.5.3. Elements Creation
  - 4.5.4. Geospatial Consultations with POSTGIS
  - 4.5.5. Visualization of Elements of a Database with QGIS
  - 4.5.6. Maps Server
    - 4.5.6.1. Types and Creation of Maps Server with Geoserver
    - 4.5.6.2. Types of WMS/WFS Data Services
    - 4.5.6.2. Visualization of Services in QGIS
- 4.6. Raster Model
  - 4.6.1. Raster Model
  - 4.6.2. Color Bands
  - 4.6.3. Storage in Databases
  - 4.6.4. Raster Calculator
  - 4.6.5. Image Pyramids
- 4.7. Raster Model. Operations
  - 4.7.1. Image Georeferencing
    - 4.7.1.1. Control Points
  - 4.7.2. Raster Functionalities
    - 4.7.2.1. Surface Functions
    - 4.7.2.2. Distance Function
    - 4.7.2.3. Reclassification Functions
    - 4.7.2.4. Superposition Analysis Functions
    - 4.7.2.5. Statistical Analysis Functions
    - 4.7.2.6. Selection Functions



- 4.7.3. Loading Raster Data into a Database
- 4.8. Practical Applications of Raster Data
  - 4.8.1. Application in the Agrarian Sector
  - 4.8.2. MDE Treatment
  - 4.8.3. Automation of Element Classification on a Raster
  - 4.8.4. Treatment of LIDAR Data
- 4.9. Open Data
  - 4.9.1. Open Street Maps (OSM)
    - 4.9.1.1. Cartographic Editing and Community
  - 4.9.2. Obtaining Free Vector Mapping
  - 4.9.3. Obtaining Free Raster Mapping

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.*



### **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 student will learn to solve complex situations in real business environments through collaborative activities and real cases.*

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 Diploma in SIG (Geographical Information Systems) guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in GIS (Geographical Information Systems)** contains the most complete and up-to-date educational program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in GIS (Geographical Information Systems)**

Official N° of hours: **600 h.**



\*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.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present

development language

virtual classroom

**tech** technological  
university

## Postgraduate Diploma GIS (Geographical Information Systems)

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

# Postgraduate Diploma GIS (Geographical Information Systems)

