

# Postgraduate Diploma

## 3D Modeling in Geomatics



## Postgraduate Diploma 3D Modeling in Geomatics

Course Modality: **Online**

Duration: **6 months**

Certificate: **TECH Technological University**

Official N° of Hours: **450 h.**

Website: [www.techtute.com/in/engineering/postgraduate-diploma/postgraduate-diploma-3d-modeling-geomatics](http://www.techtute.com/in/engineering/postgraduate-diploma/postgraduate-diploma-3d-modeling-geomatics)

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# 01

# Introduction

Geomatics has recently undergone numerous advances that have allowed it to incorporate new methods of measurement and data presentation into the discipline. Therefore, three-dimensional data collection has shifted from traditional methods to modern methods such as photogrammetry and laser scanning. This program focuses on the latest techniques in this area and delves into 3D modeling based on near object photogrammetry procedures. This will allow the professional who completes the program to integrate the most advanced processes in this field into their daily work. All this, following a 100% online learning methodology that allows the professional to choose the time and place to study.





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*Access the latest techniques in 3D modeling applied to geomatics thanks to this Postgraduate Diploma”*

The technological revolution brought about by the appearance of new computer tools and the popularization of drones has made it possible for geomatics to have innovative procedures with which to carry out its different tasks. Therefore, traditionally the three-dimensional measurement was done more manually, but nowadays there are 3D modeling processes that make this task very accurate and fast, thanks to its combination with the discipline of photogrammetry.

This Postgraduate Diploma in 3D Modeling in Geomatics offers the professional an in-depth study of the latest developments in issues such as mapping with LIDAR technology, 3D scanning and georeferencing, the capture of support and control points, BIM technologies or the planning and configuration of photogrammetric flights with drones, among many others.

To make learning much more effective, this program is presented through an online teaching system that adapts to the circumstances of each student. They will also be supported by a high-level teaching staff made up of active professionals who will provide them with all the keys to this field. And the contents will be provided through numerous multimedia resources such as videos, interactive summaries or master classes.

This **Postgraduate Diploma in 3D Modeling in Geomatics** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ Practical cases presented by experts in 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 self-assessment can be used 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



*Perfect your three-dimensional measurements by incorporating drone handling and 3D modeling into your work”*

“*TECH's teaching methodology has been designed with working professionals in mind, as it adapts to them so that they can study without problems or interruptions”*

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.

Thanks to multimedia content developed with the latest educational technology, you will be immersed in situated and contextual learning. In other words, a simulated environment that will provide immersive learning, programmed to prepare for 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.

*3D modeling is essential in current geomatics. Specialize in the field and develop exciting topographic projects with this program.*

*Geomatics is constantly evolving and this Postgraduate Diploma will provide you with everything you need to adapt to the latest developments in the discipline.*



# 02 Objectives

The main objective of this Postgraduate Diploma in 3D Modeling in Geomatics is to offer the professional the latest contents in the three-dimensional measurement of nearby objects from the latest photogrammetric methods. To achieve this, the program offers you innovative knowledge in this area, as well as a high-level faculty with extensive experience in the discipline and a flexible teaching methodology, presented through numerous multimedia resources.







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*Incorporate the latest 3D modeling techniques in geomatics into your professional practice thanks to this specialized qualification”*



## General Objectives

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- ◆ Generate specialized knowledge on LIDAR technology
- ◆ Analyze the impact of LIDAR data on the technology around us
- ◆ Compile LIDAR applications applied to Geomatics and future possibilities
- ◆ Examine the practical application of LIDAR by 3D laser scanning as applied to topography
- ◆ Design and develop near object photogrammetry projects
- ◆ Generate, measure, analyze and project three-dimensional objects
- ◆ Georeferencing and calibrating the project environment
- ◆ Define the parameters that need to be known for the elaboration of the various photogrammetric methods
- ◆ Prepare the three-dimensional object for 3D printing
- ◆ Integrate, manage and execute building information modeling projects
- ◆ Plan a photogrammetric survey according to requirements
- ◆ Develop a practical, useful and safe methodology for mapping with drones
- ◆ Analyze, filter and edit with topographic rigor, the results obtained
- ◆ Present in a clean, intuitive and practical way the cartography or reality represented



## Specific Objectives

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### Module 1. Mapping with LIDAR Technology

- ◆ Analyze LIDAR technology and its multiple applications in today's technology
- ◆ Specify the importance of LIDAR technology in geomatics applications
- ◆ Classify the different LIDAR mapping systems and their applications
- ◆ Define the use of 3D laser scanning as part of LIDAR technologies
- ◆ Propose the use of the 3D laser scanner for topographic surveys
- ◆ Demonstrate the advantages of the massive Geoinformation acquisition system using 3D laser scanning, as opposed to traditional topographic surveys
- ◆ Detail a clear and practical methodology of 3D laser scanning from the planning to a reliable delivery of results
- ◆ Examine, by means of real case studies, the use of 3D laser scanners in various sectors: mining, construction, civil engineering, deformation control or earthworks
- ◆ Recapitulate the impact of LIDAR technologies on current and future surveying

### Module 2. 3D Modelling and BIM Technology

- ◆ Determine how to proceed to capture with photographs the desired object to be modeled
- ◆ Obtain and analyze point clouds from these photographs using various specific photogrammetry software
- ◆ Process the different point clouds available, eliminating noise, georeferencing them, adjusting them and applying the mesh densification algorithms that best suit reality
- ◆ Edit, smooth, filter, merge and analyze 3D meshes resulting from the alignment and reconstruction of point clouds
- ◆ Specify the application parameters for curvature, spacing and environmental occlusion meshes
- ◆ Create an animation of the rendered mesh, textured and according to the set IPO curves
- ◆ Prepare and set up the model for 3D printing
- ◆ Identify the parts of a BIM project and present the 3D model as a base element for the BIM environment software

### Module 3. Photogrammetry with Drones

- ◆ Develop the strengths and limitations of a drone for mapping purposes
- ◆ Identify the reality of the surface to be represented, on the ground
- ◆ Provide topographical accuracy by means of conventional topography, prior to the photogrammetric flight
- ◆ Identify the actual volume where we are going to work in order to minimize any risk
- ◆ Control at all times the trajectory of the drone based on the programmed parameters
- ◆ Ensure the correct copying of files to minimize the risk of file loss
- ◆ Configure the best restitution of the flight according to the desired results
- ◆ Download, filter and clean the results obtained from the flight with the required accuracy
- ◆ Present the cartography in the most common formats according to the client's needs

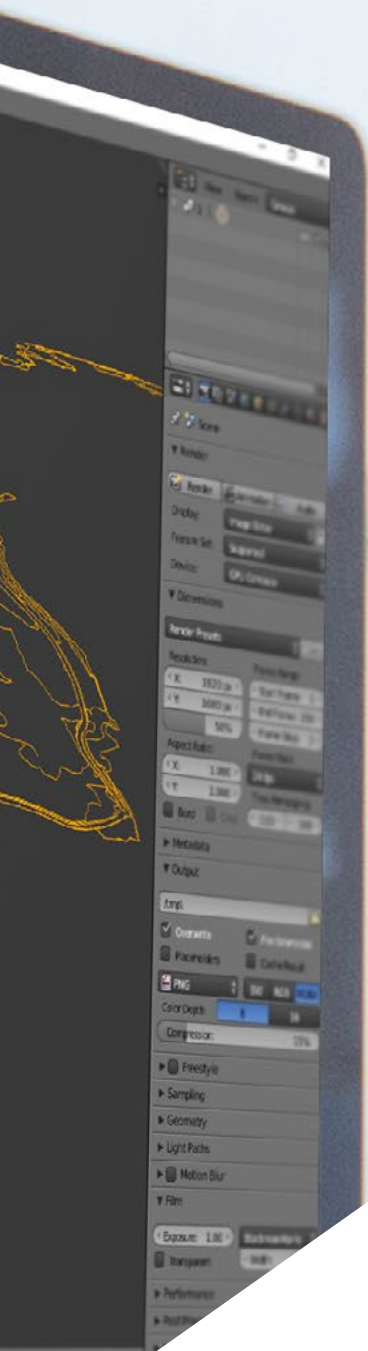
“Drones and photogrammetry are the future for data collection to enable the representation of geographic information in 3D. Don't miss this opportunity and enroll now”

# 03

# Course Management

The teaching staff of this Postgraduate Diploma in 3D Modeling in Geomatics is composed of true experts in this area, who are also active professionals, so they know perfectly all the advances and applications of these techniques in current geomatics. In this way, students from this program will be able to immediately apply everything they have learned to their own work, with knowledge that has been proven to be effective.





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*You will apply the best 3D modeling procedures in your work thanks to the knowledge transmitted to you from the first-class teaching staff”*

## 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 automatization in Python Milcom
- ◆ Development of applications in .Net environment. SQL Server management Own software support Ecomputer

## Professors

### 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)



**Mr. Ramo Maicas, Tomás**

- ◆ Administrator for the Revolotear company Technical director for the development of the use of drones and laser scanners to obtain topography through the handling and filtering of point clouds, meshes and textures applied to mining, construction, architecture and heritage
- ◆ Head of Topography at the Revolotear business Company dedicated mainly to photogrammetric surveys with drone Volumetric control of mining fronts and cubing of stockpiles, for the main mining companies
- ◆ Chief of Topography in Senegal for the company MOPSA (Marco Group in Senegal). Project design, volume study of materials, edition of plans, field and office topography, for the works of adaptation of the Pakh dam and CSS, in Guiers lake and adaptation of the Neti Yone canal
- ◆ Logistics implementation work for the company Blauverd, Korman, in Algeria Site manager and responsible for topography on several building sites, mainly in Algiers, Constantine and Oran
- ◆ Technical Engineer in Topography from the School of Geodesy, Cartography and Topography Engineering of the Polytechnic University of Valencia
- ◆ Technical Engineer in Topography from the School of Geodesy, Cartography and Topography Engineering of the Polytechnic University of Valencia
- ◆ Drone Pilot (RPAS), by FLYSCHOOL AIR ACADEMY aeronautical training center

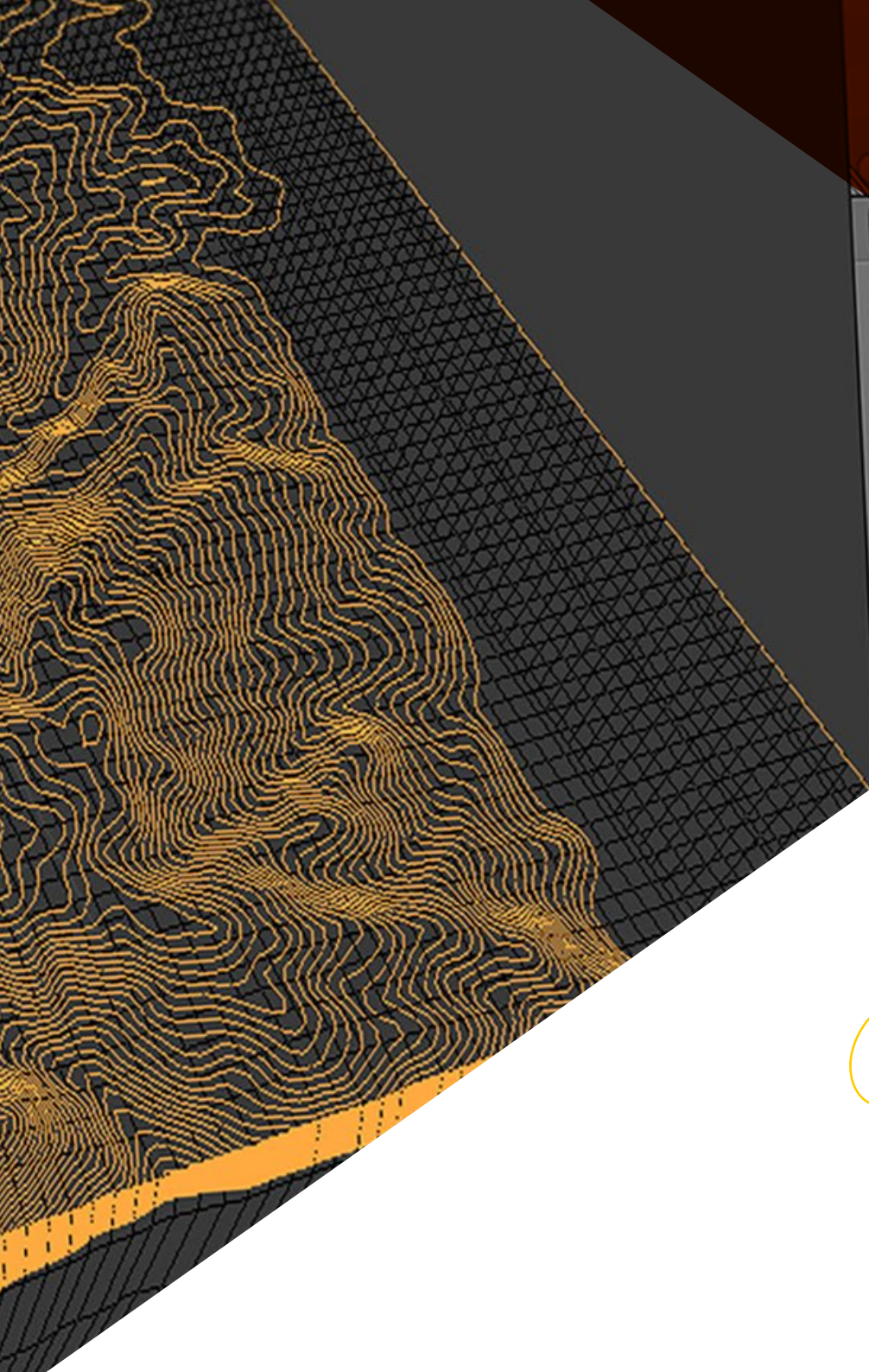
# 04

## Structure and Content

This Postgraduate Diploma in 3D Modeling in Geomatics is structured into 3 specialized modules through which the student will be able to deepen their knowledge in aspects such as the applications of LIDAR technology, especially in the field of Geomatics; 3D models, the types of camera used in this field and their adaptations to drones, classic topography and GNSS technology or the generation of the point cloud with Photomodeler Scanner, among many others.







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*You will enjoy access the most up-to-date content in 3D modeling applied to geomatics thanks to this Postgraduate Diploma”*

## Module 1. Mapping with LIDAR Technology

- 1.1. LIDAR Technology
  - 1.1.1. LIDAR Technology
  - 1.1.2. Functioning of the System
  - 1.1.3. Principal Components
- 1.2. LIDAR Applications
  - 1.2.1. Applications
  - 1.2.2. Classification
  - 1.2.3. Current Implementation
- 1.3. LIDAR Applied to Geomatics
  - 1.3.1. Mobile Mapping System
  - 1.3.2. Airborne LIDAR
  - 1.3.3. Ground-Based LIDAR. Backpack and Static Scanning
- 1.4. Topographic Surveys by 3D Laser Scanner
  - 1.4.1. Operation of 3D Laser Scanning for Topography
  - 1.4.2. Error Analysis
  - 1.4.3. General Survey Methodology
  - 1.4.4. Applications
- 1.5. 3D Laser Scanner Survey Planning
  - 1.5.1. Objectives to Scan
  - 1.5.2. Positioning and Georeferencing Planning
  - 1.5.3. Catch Density Planning
- 1.6. 3D Scanning and Georeference
  - 1.6.1. Scanner Configuration
  - 1.6.2. Acquisition of Data
  - 1.6.3. Target Reading: Georeferencing
- 1.7. Initial Management of Geoinformation
  - 1.7.1. Geoinformation Download
  - 1.7.2. Point Cloud
  - 1.7.3. Georeferencing and Export of Point Clouds

- 1.8. Point Cloud Editing and Application of Results
  - 1.8.1. Processing Point Clouds. Cleaning, Resampling or Simplification
  - 1.8.2. Geometric Extraction
  - 1.8.3. 3D Modelling. Mesh Generation and Texture Application
  - 1.8.4. Analysis. Transversal Sections and Measurements
- 1.9. Surveys by 3D Laser Scanner
  - 1.9.1. Planning: Precision and Instruments to Use
  - 1.9.2. Fieldwork: Scanning and Georeferencing
  - 1.9.3. Download Processing, Editing and Delivery
- 1.10. Repercussion of LIDAR Technologies
  - 1.10.1. General Repercussion of LIDAR Technologies
  - 1.10.2. Particular Impact of the 3D Scanner in Topography

## Module 2. 3D Modelling and BIM Technology

- 2.1. 3D Modelling
  - 2.1.1. Types of Data
  - 2.1.2. Medical History
    - 2.1.2.1. By Contact
    - 2.1.3.1. Without Contact
  - 2.1.3. Applications
- 2.2. The Camera as a Data Acquisition Tool
  - 2.2.1. Photographic Cameras
    - 2.2.1.2. Types of Cameras
    - 2.2.1.3. Control Elements
    - 2.2.1.4. Calibration
  - 2.2.2. EXIF Data
    - 2.2.2.1. Extrinsic Parameters (3D)
    - 2.2.2.2. Intrinsic Parameters (2D)
  - 2.2.3. Taking Photographs
    - 2.2.3.1. Dome Effect
    - 2.2.3.2. Flash
    - 2.2.3.3. Number of Collections
    - 2.2.3.4. Camera - Object Distances
    - 2.2.3.5. Method
  - 2.2.4. Necessary Quality

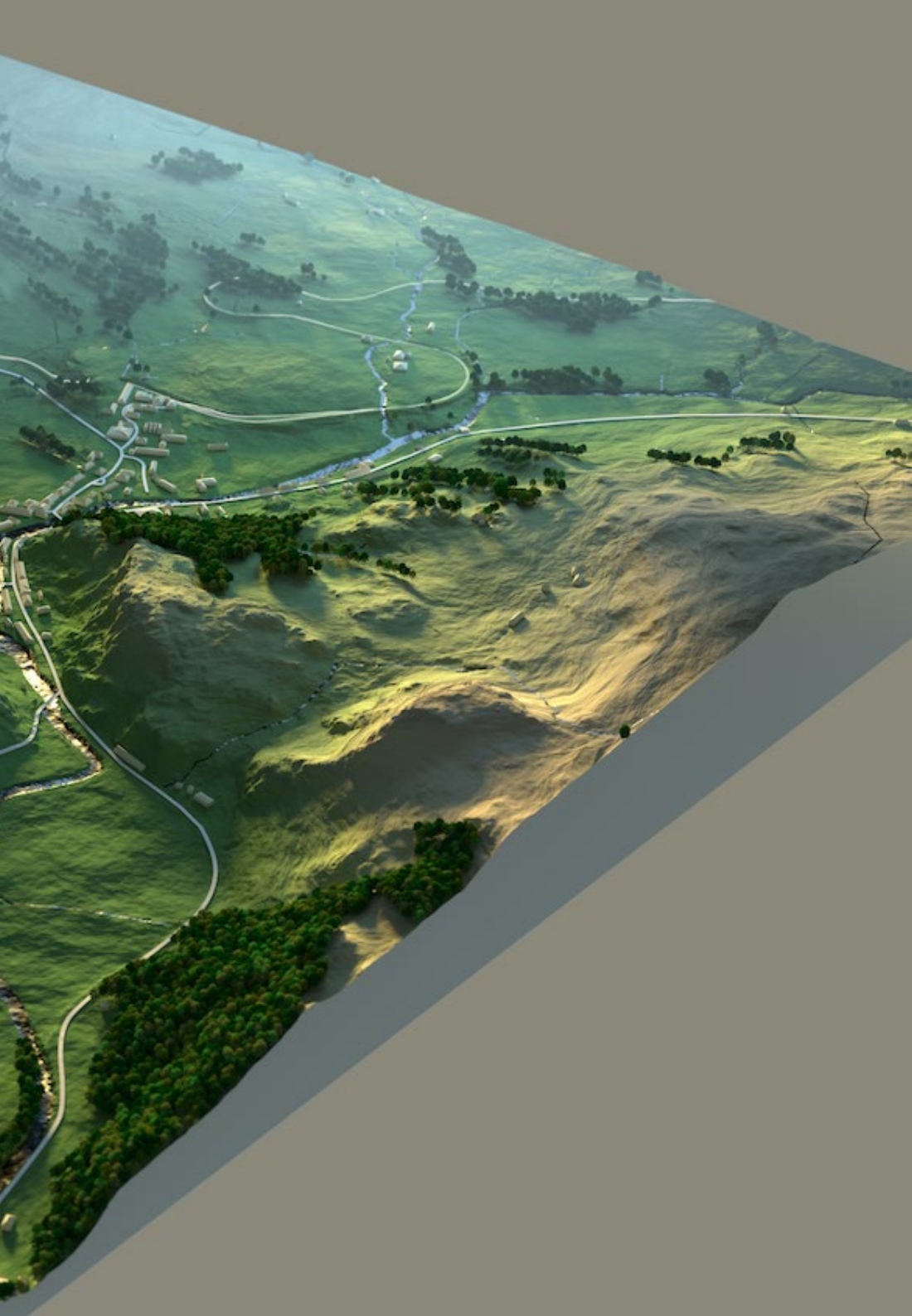
- 2.3. Collection of Support and Control Points
  - 2.3.1. Classic Topography and GNSS Technology
    - 2.3.1.1. Application of Photogrammetry of a Close Object
  - 2.3.2. Observation Methods
    - 2.3.2.1. Area Study
    - 2.3.2.2. Justification of the Method
  - 2.3.3. Observation Network
    - 2.3.3.1. Planning
  - 2.3.4. Precision Analysis
- 2.4. Generation of a Point Cloud with Photomodeler Scanner
  - 2.4.1. Medical History
    - 2.4.1.1. Photomodeler
    - 2.4.1.2. Photomodeler Scanner
  - 2.4.2. Requirements
  - 2.4.3. Calibration
  - 2.4.4. Smart Matching
    - 2.4.4.1. Obtaining the Dense Point Cloud
  - 2.4.5. Creation of a Textured Mesh
  - 2.4.6. Creation of a 3D Model from Images with Photomodeler Scanner
- 2.5. Generation of a Point Cloud with Structure from Motion
  - 2.5.1. Cameras, Point Clouds, Software
  - 2.5.2. Methodology
    - 2.5.2.1. Dispersed 3D Map
    - 2.5.2.2. Dense 3D Map
    - 2.5.2.3. Triangular Mesh
  - 2.5.3. Applications
- 2.6. Point Cloud Georeferencing
  - 2.6.1. Reference Systems and Coordinate Systems
  - 2.6.2. Transformation
    - 2.6.2.1. Parameters
    - 2.6.2.2. Absolute Orientation
    - 2.6.2.3. Support Points
    - 2.6.2.4. Control Points (GCP)
  - 2.6.3. 3DVEM
- 2.7. Meshlab. 3D Mesh Editing
  - 2.7.1. Formats
  - 2.7.2. Commands
  - 2.7.3. Tools
  - 2.7.4. 3D Reconstruction Methods
- 2.8. Blender. Rendering and Animation of 3D Models
  - 2.8.1. 3D Production
    - 2.8.1.1. Modeling
    - 2.8.1.2. Materials and Textures
    - 2.8.1.3. Lighting
    - 2.8.1.4. Animation
    - 2.8.1.5. Photorealistic Rendering
    - 2.8.1.6. Video Editing
  - 2.8.2. Interface
  - 2.8.3. Tools
  - 2.8.4. Animation
  - 2.8.5. Rendering
  - 2.8.6. Prepared for 3D Printing
- 2.9. 3D Printing
  - 2.9.1. 3D Printing
    - 2.9.1.1. Background
    - 2.9.1.2. 3D Manufacturing Technology
    - 2.9.1.3. Slicer
    - 2.9.1.4. Materials
    - 2.9.1.5. System of Coordinates
    - 2.9.1.6. Formats
    - 2.9.1.7. Applications
  - 2.9.2. Calibration
    - 2.9.2.1. X and Y Axis
    - 2.9.2.2. Z Axis
    - 2.9.2.3. Bed Alignment
    - 2.9.2.4. Flow
  - 2.9.3. Cura Printing

- 2.10. BIM Technologies
  - 2.10.1. BIM Technologies
  - 2.10.2. Parts of a BIM Project
    - 2.10.2.1. Geometric Information (3D)
    - 2.10.2.2. Project Times (4D)
    - 2.10.2.3. Costs (5D)
    - 2.10.2.4. Sustainability (6D)
    - 2.10.2.5. Operation and Maintenance (7D)
  - 2.10.3. BIM Software
    - 2.10.3.1. BIM Viewers
    - 2.10.3.2. BIM Model
    - 2.10.3.3. Construction Planning (4D)
    - 2.10.3.4. Measuring and Budget (5D)
    - 2.10.3.5. Environmental Management and Energy Efficiency (6D)
    - 2.10.3.6. Facility Management (7D)
  - 2.10.4. Photogrammetry in the BIM Environment with REVIT

### Module 3. Photogrammetry with Drones

- 3.1. Topography, Mapping and Geomatics
  - 3.1.1. Topography, Mapping and Geomatics
  - 3.1.2. Photogrammetry
- 3.2. Structure of the System
  - 3.2.1. UAVs (Military Drones), RPAS (Civilian Aircraft) or DRONES
  - 3.2.2. Photogrammetric Method with Drones
- 3.3. Work Planning
  - 3.3.1. Study of Airspace
  - 3.3.2. Meteorological Previsions
  - 3.3.3. Geographic Dimensioning and Flight Configuration
- 3.4. Field Topography
  - 3.4.1. Initial Inspection of the Area of Work
  - 3.4.2. Materialization of Supporting Points and Quality Control
  - 3.4.3. Complementary Topographic Surveys





- 3.5. Photogrammetric Flights
  - 3.5.1. Planning and Configuration of Flights
  - 3.5.2. Field Analysis and Take-Off and Landing Points
  - 3.5.3. Flight Review and Quality Control
- 3.6. Commissioning and Configuration
  - 3.6.1. Information Download. Support, Security and Communication
  - 3.6.2. Image and Topographic Data Processing
  - 3.6.3. Processing, Photogrammetric Restitution and Configuration
- 3.7. Results Editing and Analysis
  - 3.7.1. Interpretation of Results
  - 3.7.2. Cleaning, Filtering and Treatment of Point Clouds
  - 3.7.3. Obtaining Meshes, Surfaces and Orthomosaics
- 3.8. Presentation-Representation
  - 3.8.1. Mapped. Formats and Common Extensions
  - 3.8.2. 2D and 3D Representation. Level Curves, Orthomosaics and MDT
  - 3.8.3. Presentation, Diffusion and Storage of Results
- 3.9. Phases of a Project
  - 3.9.1. Planning
  - 3.9.2. Fieldwork (Topography and Flights)
  - 3.9.3. Download Processing, Editing and Delivery
- 3.10. Topography with Drones
  - 3.10.1. Parts of the Exposed Method
  - 3.10.2. Impact or Repercussion on Topography
  - 3.10.3. Future Projection of Topography with Drones

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.





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*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 Diploma in 3D Modeling in Geomatics guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"*

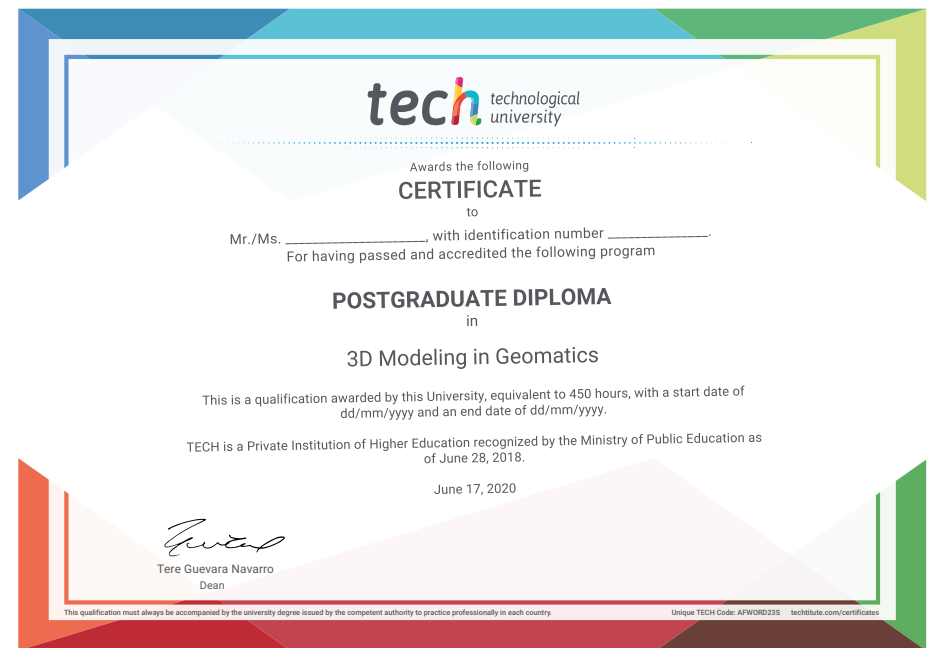
This **Postgraduate Diploma in 3D Modeling in Geomatics** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate 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 3D Modeling in Geomatics**

Official N° of Hours: **450 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 quality  
development languages  
classroom



## Postgraduate Diploma 3D Modeling in Geomatics

Course Modality: Online

Duration: 6 months

Certificate: TECH Technological University

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# Postgraduate Diploma 3D Modeling in Geomatics