Postgraduate Diploma
Specialized Aerial Operations

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Postgraduate Diploma
Specialized Aerial Operations

- » Modality: **online**
- » Duration: **6 months**
- » Certificate: **TECH Global University**
- » Accreditation: **24 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/engineering/postgraduate-diploma/postgraduate-diploma-specialized-aerial-operations**

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01

Introduction

The application of drones to engineering cannot ignore photogrammetry from a specialized point of view. Also, the student will learn with the completion of this program the operation to be performed with thermography applying it to various circumstances in which the Engineering must respond.

A unique opportunity to acquire in-depth knowledge and stand out in what will be a highly demanded profession of the future.

If you are looking for quality knowledge that will help you specialize in one of the fields with the most professional prospects, this is your best option"

The world of aeronautics has changed with the emergence of drones. Drone technology is advancing at great speed, evolving much faster even than mobile technology. This technology has advanced so much that, nowadays, there are drones with more than 20 hours of flight autonomy.

Another very important aspect is pilot training. Flying a drone for entertainment purposes is not the same as flying a high value drone for specialized operations. That is why this intensive program is so vital, as it will provide professionals with the specialization that they need.

This program is aimed at those people interested in reaching a higher level of knowledge about Specialized Aerial Operations. The main objective of this Postgraduate Diploma is for students to specialize their knowledge in simulated work environments and conditions in a rigorous and realistic manner so that they can later apply it in the real world.

In addition, as it is a 100% online Postgraduate Diploma, the student is not constrained by fixed timetables or the need to move to another physical location, but can access the contents at any time of the day, balancing their professional or personal life with their academic life.

This **Postgraduate Diploma in Specialized Aerial Operations** 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 Specialized Aerial Operations

♦ 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

♦ A special emphasis on innovative methodologies in the field of the Specialized journalism

♦ 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

Do not miss the opportunity to take this Postgraduate Diploma in Specialized Aerial Operations with us. It's the perfect opportunity to advance your career"

"

This Postgraduate Diploma is the best investment you can make when selecting a refresher program to update your existing knowledge in Specialized Aerial Operations"

This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.

This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work. You choose where and when to study.

Its teaching staff includes professionals belonging to the field of Specialized Aerial Operations, who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and 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 education 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 during the academic year For this, the professional will have the help of an innovative, interactive video system made by recognized and experienced experts in Specialized Aerial Operations
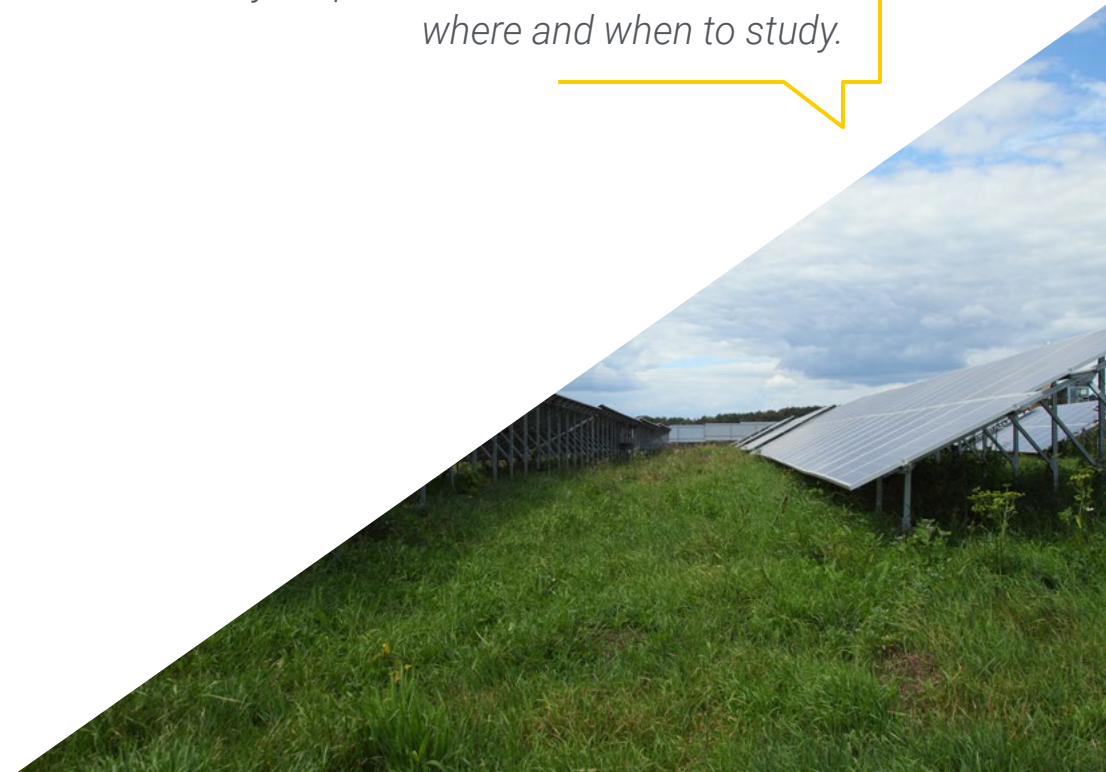
02
Objectives

This Postgraduate Diploma in Specialized Aerial Operations designed to facilitate professional performance in the field to acquire knowledge of the main developments in the sector.

"*Our goal is for you to become the best professional in your sector. And for this we have the best methodology and content*"

General Objectives

- Specify and establish a joint vision of unmanned aviation in the world and, more specifically, in Europe and the USA

- Delimit the roles of different types of pilots: professional and sport pilots

- Characterize unmanned aerial platforms from a pragmatic point of view

- Apply inspection, checking, adjustment and replacement procedures on assembling, elements, parts and indication systems to perform scheduled and corrective maintenance on them, both on the unmanned aerial platform and on the necessary accessory elements, such as the ground station or accessories such as payload

- Select the procedures established in the maintenance manuals to perform the storage of elements, parts and systems, including energy sources

- Apply the procedures established in the maintenance manuals to perform aircraft weighing and payload calculation operations

- Analyze the management and organization models used in aeronautical maintenance in order to carry out related actions

- Apply warehouse management techniques to perform stock control

- Perform the procedures established by the company in order to carry out operations in the manufacturing and assembly processes

- Evaluate situations of occupational risk prevention and environmental protection. Propose and apply prevention and protection measures, both personal and collective, according to the applicable regulations in the work processes, in order to guarantee safe environments

- Identify and propose the professional actions necessary to respond to universal accessibility and "design for all"

♦ Detail the use and application of drones in technological engineering activities as specified in the RD 1036 (Royal Decree 1036/2017): BORRAR

♦ Identify and apply quality parameters in the work and activities performed during the learning process to assess the culture of assessment and quality and to monitor and improve quality management procedures

♦ Specify the role and responsibilities of an aeronautical operator. Detail the internal and management operations of this "small airline" in relation to the aeronautical authority

♦ Use procedures related to entrepreneurial culture, business and professional initiative to carry out basic small company management or start a new business

♦ Recognize their rights and duties as active agents in society, taking into account the legal framework that regulates social and labor conditions, in order to participate as democratic citizens

Specific Objectives

Module 1. Thermography with Drones I
- Gain access the fundamental knowledge of thermography
- Apply and integrate drones in heat technology
- Select the camera in function with its usefulness and versatility
- Adapt the functionality of the infra-red camera to the proposed mission
- Process and analyze images until finding the end result
- Apply the acquired knowledge to different aeronautical jobs
- Visualize, edit and analyze the infra-red images taken with the proposed software
- Identify the most frequent mitigation errors in deliverable products to the final customer

Module 2. Thermography with Drones II
- Develop thermal imaging analysis as a foundation for various applications
- Identify thermal technology capabilities and implementation
- Develop field work methodologies to generate effective diagnostics
- Enhance the personal skills of the image analyst based on scientific analysis
- Develop skills for an informed diagnosis
- Specify and infer situations on the basis of facts gathered
- Apply infrared technology to develop procedures for future, immediately applicable, remedial actions
- Solve application needs that cannot be met by other technologies
- Issue justified thermographic reports as a basis for improvement actions

Module 3. Aerial Surveys and Photogrammetry with Drones
- Know the fundamental principles of photogrammetry
- Specifically delve into the fundamentals and operations of photogrammetry with drones
- Define the different flight options and camera to carry out the mission
- Analyze, in a practical way, exogenous conditions
- Identify and interpret the software options proposed for particular jobs
- Prepare a final result as a deliverable product

Module 4. Operations Manual
- Gain in-depth knowledge of the inner workings of an unmanned aircraft
- Gain in-depth knowledge of a drone operator's relations with the competent authority
- Formalize operational procedures in the form of planning, organization, direction, coordination and control of the established requirements
- Recognize aspects for continuous improvement in training
- Develop and implement the necessary constraints
- Identify and evaluate possible risks
- Specify methodologies for the adequate maintenance of the Unmanned Aviation System (UAS)
- Gain in-depth knowledge of the safe conduct of aviation operations
- Develop the capabilities, skills and competences to implement operator configurations under safety standards

"A path to achieve education and professional growth that will propel you towards a greater level of competitiveness in the employment market".

03

Course Management

In keeping with the total quality standard of this Postgraduate Diploma, TECH is proud to provide students with a teaching staff of the highest level, chosen for their proven experience. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.

Our university employs the best professionals in all areas who share their knowledge to help you"

Management

Mr. Pliego Gallardo, Ángel Alberto

- Airline Transport Pilot (ATPL)
- PPL (A), ULM, RPAS Pilot
- RPAS theoretical and practical instructor and examiner
- University Professor in at UNEATLANTICO
- University Diploma from the Secretary of State for Universities and Research
- Professor of "Aircraft Maintenance" European Social Fund Course (TMVVO004PO) FEMPA 2019
- Degree in Primary Education Teaching from the University of Alicante
- Pedagogical Aptitude Course from the University of Alicante
- Authorised Operator for AESA (State Aviation Safety Agency)
- EASA Authorized RPAS Manufacturer

Mr. Bazán González, Gerardo

- Electronic Engineer
- Specialist in Aviation Works in Spain and Latin America
- Key Account and Institutional Expert
- RPAS Pilot

Mr. Saiz Moro, Víctor

- Industrial Technical Engineer
- RPAS Pilot
- RPAS theoretical and practical instructor
- Authorised Operator for AESA (State Aviation Safety Agency)
- Manufacturer of RPAS authorized by AESA
- Specialist and Expert in Aeronautical Consulting

Professors

Ms. López Amedo, Ana María

- Vice president of the Federation for Air Sports in the Community of Valencia
- President of the San Vicente del Raspeig Air Sports Club
- Institutional Expert
- Specialist and Expert in Unmanned Aviation
- RPAS Pilot
- RPAS Instructor
- RPAS Examiner

Mr. Fernández Moure, Rafael L.

- Specialist in Airport Security
- Expert in Airport Security
- RPAS Pilot RPAS Instructor

Mr. Buades Blasco, Jerónimo

- Geographer
- Specialist in Information Systems and Environment
- Pedagogical Aptitude Course from the University of Alicante
- RPAS Pilot

04

Structure and Content

The structure of the contents has been designed by the best professionals in the from the engineering sector, with extensive experience and recognized prestige in the profession

"

We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too"

Module 1. Thermography with Drones I

1.1. Thermography and Drones
    1.1.1. Definitions
    1.1.2. Background
1.2. Physical Basics of Infrared Thermography
    1.2.1. Transmission of Heat
    1.2.2. Electromagnetic Radiation
1.3. Application in RPAS
    1.3.1. Typology
    1.3.2. RPAS Components
1.4. Integration in Unmanned Aerial Platforms
    1.4.1. Choice of Camera
    1.4.2. Image
1.5. Thermal Cameras
    1.5.1. Functioning and Characteristics
    1.5.2. Main Cameras on the Market
1.6. Applications in Thermal Imaging Engineering
    1.6.1. In Construction and Industry
    1.6.2. In Agriculture and Livestock Farming
    1.6.3. In Emergencies
1.7. Taking Thermographic Images
    1.7.1. Taking Images
    1.7.2. Calibration
1.8. Processing of Thermographic Data
    1.8.1. Preliminary Process
    1.8.2. Image Analysis
1.9. Visualization, Editing and Analysis Software
    1.9.1. *Flir Tools*
    1.9.2. Program Management
1.10. Most Frequent Errors
    1.10.1. Taking Images
    1.10.2. Image Interpretation

Module 2. Thermography with Drones II

2.1. Applied Theory
    2.1.1. The Blackbody and Hot Spot
    2.1.2. Radiation Theories
2.2. Infra Red Thermography II
    2.2.1. Active and Passive Thermography
    2.2.2. The Thermogram
    2.2.3. Conditions of Application
2.3. Causes and Effects of the Measurement
    2.3.1. Physical Laws and Principles
    2.3.2. The Measured Object. Factors Affecting It
2.4. Temperature and Distortions
    2.4.1. Measuring Systems and Units
    2.4.2. Distortions
2.5. Software and Hardware
    2.5.1. Software
    2.5.2. Hardware
2.6. Missions
    2.6.1. Static Mission: Wind Farms and Solar Plants
    2.6.2. Dynamic Mission: Vigilance and Security
2.7. Social Applications
    2.7.1. Fire Fighting
    2.7.2. Rescue and Emergency
2.8. Analysis and Diagnosis
    2.8.1. Interpretive Analysis and Diagnosis
    2.8.2. Functional Analysis and Diagnosis
2.9. Reports
    2.9.1. Thermal Reports
    2.9.2. Field Analysis
2.10. Report to be Submitted
    2.10.1. Equipment and Criteria
    2.10.2. Report Example

Module 3. Aerial Surveys and Photogrammetry with Drones

This program will allow you to advance in your career comfortably"

05
Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.
The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

"

At TECH you will NOT have live classes
(which you might not be able to attend)"

The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.

Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.

The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.

2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.

3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.

4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:

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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.

Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.

Interactive Summaries

We present 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".

Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.

20%

15%

15%

3%

20%

17%

7%

3%
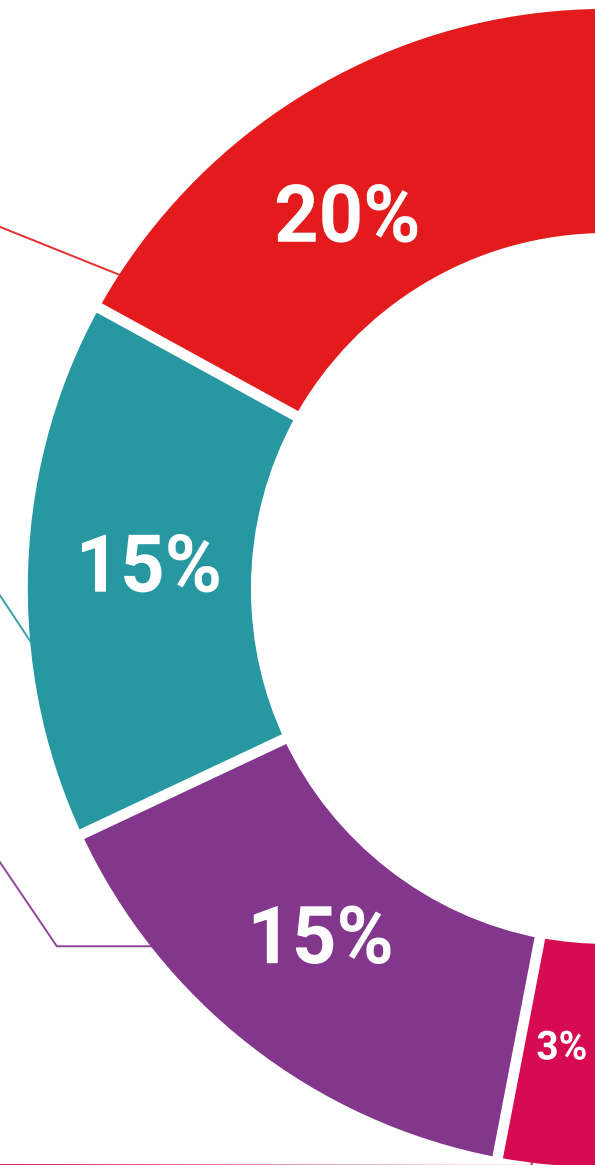
Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

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 for future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

Certificate

This Postgraduate Diploma in Specialized Aerial Operations, guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

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

This private qualification will allow you to obtain a **Postgraduate Diploma in Specialized Aerial Operations**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** private qualification 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 Specialized Aerial Operations**

Modality: **online**

Duration: **6 months**

Accreditation: **24 ECTS**

tech global university

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

Postgraduate Diploma in Specialized Aerial Operations

This is a private qualification of 720 hours of duration equivalent to 24 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
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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