

Postgraduate Diploma Drones





Postgraduate Diploma Drones

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

Website: www.techtute.com/pk/engineering/postgraduate-diploma/postgraduate-diploma-drones

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01

Introduction

Specialize in a profession of the future with this program on Drones. You will learn the necessary features of unmanned aircrafts in general, and the Eagle-6 features in particular, to conduct safe flights in different scenarios and different aircraft configurations. Likewise, the program will delve into the most specific, particular and individual aspects related to safety and will present a bilateral legislative vision; on the one hand, it addresses the international framework, including access to reference tools; and on the other, it specifies use in Europe, the USA and Latin America.

This program brings students closer to the field of Drones, with an up to date and quality program. A comprehensive specialization program that seeks to train students to be successful in their profession.





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

The emergence of drones has changed the world of aeronautics. 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.

Moreover, the advance of drones implies a growing need for pilots to specialize in their use. Flying a drone for entertainment purposes is not the same as flying a high value drone for specialized operations. That is why this intensive training is so vital, as it will provide professionals with the specialization that they need.

This program is aimed at those interested in attaining a higher level of knowledge of Drones. 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.

Additionally, as it is a 100% online Postgraduate Diploma, students are not constrained by fixed timetables or the need to commute to another physical location, rather, can access the contents at any time of the day, balancing their professional or personal life with their studies.

With this **Postgraduate Diploma in Drones**, students will be trained in the latest trends in the field related to maximum Energy Saving and Sustainability and will obtain an extensive body of knowledge of different applications and requirements at an international level.

- ◆ Practical cases presented by experts in Drones
- ◆ The graphic, schematic, and eminently 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
- ◆ A special emphasis on innovative methodologies in Drones
- ◆ 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 study this Postgraduate Diploma in Drones at TECH. It's the perfect opportunity to advance your career"

“ *This Postgraduate Diploma is the best investment you can make when choosing a refresher program to update your existing knowledge of Drones* ”

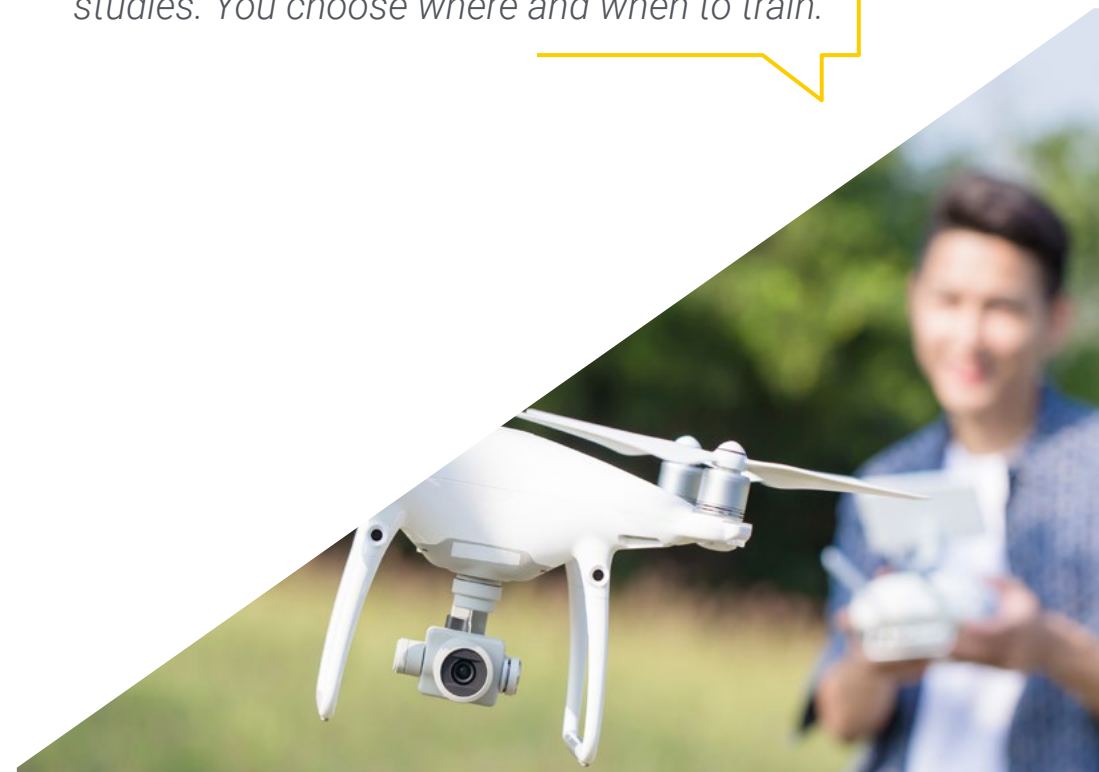
The teaching staff includes professionals in the field of Drones, who bring their experience to this specialization program, as well as renowned specialists from leading societies and prestigious universities.

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 training programmed to train 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 Drones.

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 balance your professional life with your studies. You choose where and when to train.



02

Objectives

The Postgraduate Diploma in Drones is designed to facilitate professional performance in the field to acquire knowledge of the main developments in the sector.





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*Our goal is to make you 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, checks, adjustments and substitution procedures in assemblies, elements, parts and indication systems to perform scheduled and corrective maintenance, both in an unmanned aerial platform and in the necessary accessory elements, such as ground stations, or accessories such as the payloads
- ◆ Select the procedures established in the maintenance manuals to store elements, parts and systems; including energy sources
- ◆ Apply the procedures established in maintenance manuals to perform weighing operations and aircraft payload calculations
- ◆ Analyze the management and organization models used in aeronautical maintenance
- ◆ Apply warehouse management techniques for stock control
- ◆ Perform the actions derived from the procedures established by the company to perform operations in manufacturing and assembly processes
- ◆ Evaluate situations of occupational risk prevention and environmental protection, proposing and applying prevention and protection measures, personal and collective, according to the applicable regulations in work processes, to ensure 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):
- ◆ 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 operations aeronautical operators perform 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 the rights and duties of an active agent in society, taking into account the legal framework that regulates social and working conditions, in order to participate as a democratic citizen



*Study at the world's
largest online university"*



Specific Objectives

Module 1. Specific Drone Features

- ◆ Acquire a particular vision of the peculiarities and features of world legislation and, more specifically, that of Europe, the USA and Spain
- ◆ Present the different uses of drones in different modalities such as: training, model airplanes and sport
- ◆ Structure, organize and define the different institutions that regulate non professional use of drones
- ◆ Implement and taxonomize the different professional applications of drones in functional operations through engineering: from cartography to agriculture, photogrammetry, civil engineering, thermography, environment, mining, various inspections, photography, advertising and emergency situations

Module 2. Occupational Risk Prevention with Drones

- ◆ Detail the specific regulatory framework
- ◆ Delve into work hygiene and ergonomics
- ◆ Adapt personal equipment to the specific needs of each use
- ◆ Detail the procedures to be followed in case of an accident
- ◆ Identify the possible dangers of outdoor and drone work to present prevention measures

Module 3. R&D&I: Aircraft Features

- ◆ Recognize the importance of unmanned aerial platform performance for aerial activity
- ◆ Develop basic skills and aptitudes in the knowledge of the origin of Remotely Piloted Aircraft System (RPAS) performance
- ◆ Recognize essential features in unmanned aircrafts to perform safe flights in different scenarios
- ◆ Identify required features in unmanned aircrafts to perform safe flights with different configurations; and other influencing factors
- ◆ Detail the forces and energies that act on aircrafts in the different phases of flight

Module 4. Design and Engineering I: Specific Knowledge of Drones

- ◆ Delve into the basic principles of flight from the laws of physics, specifically from aerodynamics
- ◆ Develop aptitude in the knowledge of basic unmanned aircrafts components, how they function and their potential
- ◆ Learn about the components and equipment requirements in unmanned aircrafts
- ◆ Delve into the importance of maintenance, as well as its obligatory nature and limitations

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.





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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 (A)
- PPL (A), ULM, RPAS Pilot
- RPAS theoretical and practical instructor and examiner
- University Professor UNEATLANTICO
- University Diploma, Secretary of State for Universities and Research
- Professor of Aircraft Maintenance European Social Fund Course (TMVV0004PO) FEMPA Business School 2019
- EP Teacher, University of Alicante
- CAP in Technology, University of Alicante
- EASA Authorized Operator
- EASA Authorized RPAS Manufacturer



Mr. Bazán González, Gerardo

- Electronic Engineer
- Specialist in aerial works, Spain and Latin America
- Expert in Large Accounts and Institutional
- RPAS Pilot



Mr. Saiz Moro, Víctor

- Industrial Technical Engineer
- RPAS Pilot
- RPAS theoretical and practical instructor
- EASA Authorized Operator
- EASA Authorized RPAS Manufacturer
- Specialist and expert in aeronautical consultancy

Professors

Ms. López Amedo, Ana María

- ◆ Vice-president of the Aerial Sports Federation of the Valencian Community
- ◆ President of San Vicente del Raspeig Air Sports Club
- ◆ Expert in Institutional Aviation
- ◆ Specialist and expert in unmanned aviation
- ◆ RPAS Pilot
- ◆ RPAS Instructor
- ◆ RPAS Examiner

Mr. Fernández Moure, Rafael L.

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

Mr. Buades Blasco, Jerónimo

- ◆ Geographer
- ◆ Specialist in Information Systems and Environment
- ◆ CAP, 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





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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. Specific Drone Features

- 1.1. Applicable Legislation
 - 1.1.1. International Legislation
 - 1.1.1.1. International Civil Aviation Organization (ICAO)
 - 1.1.1.2. JARUS
- 1.2. The USA: The Paradigm
 - 1.2.1. Requirements
 - 1.2.2. Pilot Profiles
 - 1.2.3. News in 2020: Low Altitude Authorization and Notification Capability (LAANC)
- 1.3. Europe
 - 1.3.1. European Union Aviation Safety Agency (EASA): General Aspects
 - 1.3.2. European Union Aviation Safety Agency (EASA): Features
- 1.4. Spain
 - 1.4.1. Professional Use
 - 1.4.2. Recreational Use
- 1.5. Drones as Training
 - 1.5.1. Federated Pilots
 - 1.5.2. RFAE (Royal Spanish Aeronautical Federation)
 - 1.5.3. Autonomic Federations
 - 1.5.4. FDACV (Valencian Community Air Sports Federation)
 - 1.5.5. Regulations and Licenses
- 1.6. Drones as Aeromodels
 - 1.6.1. Flight Categories
 - 1.6.1.1. Recreational Flights
 - 1.6.1.2. Free Flights: F1
 - 1.6.1.3. Circular Flights: F2
 - 1.6.1.4. Radio-Controlled Flights F3
 - 1.6.1.5. Scale Models: F4
 - 1.6.1.6. Electric Engine Models F5
 - 1.6.1.7. Spatial Models S

- 1.7. Types of Aeromodels
 - 1.7.1. Trainers
 - 1.7.2. Acrobatic
 - 1.7.3. FunFly
 - 1.7.4. Models
- 1.8. Drones as Sport
 - 1.8.1. FAI (World Air Sports Federation)
 - 1.8.1.1. Modalities
 - 1.8.1.1.1. Persecution
 - 1.8.1.1.2. Free Style
 - 1.8.2. Competitions
 - 1.8.2.1. At the International Level
 - 1.8.2.2. At the National Level
- 1.9. Drones Operational Applications in Engineering I
 - 1.9.1. Applications in Cartography-Photogrammetry
 - 1.9.2. Applications in Civil Engineering
- 1.10. Drones Operational Applications in Engineering II
 - 1.10.1. Applications in Thermography
 - 1.10.2. Environmental Applications
- 1.11. Drones Operational Applications in Engineering III
 - 1.11.1. Applications in Mining
 - 1.11.2. Inspection Applications
- 1.12. Drones Operational Applications in Engineering IV
 - 1.12.1. Applications in Artistic Photography and Shows
 - 1.12.2. Applications in Aerial Advertising, Radio and TV
 - 1.12.3. Security and Emergency Applications
 - 1.12.4. Agricultural Applications



Module 2. Occupational Risk Prevention with Drones

- 2.1. Specific Regulations
 - 2.1.1. Specific Regulations
 - 2.1.2. Risk Assessment
- 2.2. Equipment and Machinery
 - 2.2.1. Equipment
 - 2.2.2. Machinery
- 2.3. Dangerous Goods Regulation (DGR)
 - 2.3.1. Dangerous Goods
 - 2.3.2. Classification and Action in Accidents and Incidents Involving Dangerous Goods
- 2.4. Hygiene and Ergonomics
 - 2.4.1. Hygiene
 - 2.4.2. Ergonomics
- 2.5. Personal Protective Equipment (PPE)
 - 2.5.1. (PPE)
 - 2.5.2. Use
- 2.6. Emergency Situations
 - 2.6.1. Self Protection Plans
 - 2.6.2. Actions in Emergency Cases
- 2.7. Procedures in the Event of Industrial Accidents
 - 2.7.1. Procedures in the Event of Industrial Accidents
 - 2.7.2. Accident and Incident Investigations
- 2.8. Health Surveillance
 - 2.8.1. Company Obligations
 - 2.8.2. Emergency Planning
- 2.9. Outdoor Work
 - 2.9.1. Outdoor Work Hazards
 - 2.9.2. Preventive Measures for Outdoor Work
- 2.10. Work with Drones
 - 2.10.1. Outdoor Drone Work Hazards
 - 2.10.2. Preventive Measures for Drone Work

Module 3. R&D&I: Aircraft Features

- 3.1. Fixed-Wing Aircrafts I
 - 3.1.1. Energies Acting on the Aircraft
 - 3.1.2. Forces Acting on the Aircraft
- 3.2. Fixed-Wing Aircrafts II
 - 3.2.1. Glide ratio
 - 3.2.2. Stability: Aircraft Axes
 - 3.2.3. Center of Gravity and Center of Pressures
 - 3.2.4. Stall and Auger
- 3.3. Rotary-Wing Aircrafts I
 - 3.3.1. Energies Acting on the Aircraft
 - 3.3.2. Forces Acting on the Aircraft
- 3.4. Rotary-Wing Aircrafts II
 - 3.4.1. Rotor Systems
 - 3.4.2. Induced Oscillations:
 - 3.4.2.1. Pilot-Induced Oscillation (PIO)
 - 3.4.2.2. Mass-Induced Oscillation (MIO)
 - 3.4.2.3. Aircraft-Induced Oscillation (AIO)
- 3.5. RPAS Flying Methodology
 - 3.5.1. Preflight: Safety Checklist
 - 3.5.2. Take Off and Ascent
 - 3.5.3. Cruise
 - 3.5.4. Descent and Landing
 - 3.5.5. After Landing
- 3.6. Flight Profiles and Operation Features
 - 3.6.1. Object
 - 3.6.2. Operation Features
 - 3.6.3. Flight Preparation: What Is Involved
 - 3.6.4. Normal Operation
 - 3.6.5. Situations Arising from Abnormal and Emergency Situations
 - 3.6.6. Flight Operations Analysis and Closure
 - 3.6.7. Methodology to Elaborate Flight Profiles
- 3.7. Flight Planning: Risk Assessment
 - 3.7.1. Risk Factors
 - 3.7.2. Implementation
- 3.8. Methodology to Elaborate Emergency Alert Systems (EAS) for Declarative Operations I
 - 3.8.1. General Methodology
- 3.9. Methodology to Elaborate EAS for Declarative Operations II
 - 3.9.1. SORA Methodology
- 3.10. Requirements Established by RD 1036/2017 for EAS

Module 4. Design and Engineering I: Specific Knowledge of Drones

- 4.1. Aircraft Classification for Pilots and Engineers
 - 4.1.1. Generic
 - 4.1.2. According to EASA
- 4.2. Flight Principles for Pilots and Engineers
 - 4.2.1. Exogenous Principles
 - 4.2.1.1. Bernoulli's Theorem, Venturi's Effect, Action and Reaction Principle
 - 4.2.2. Endogenous Principles
 - 4.2.2.1. Plane, Airfoil, Angle of Attack, Boundary Layer, Performance
- 4.3. RPAS Requirements for Pilots and Engineers
 - 4.3.1. Identification, Registration and Airworthiness
 - 4.3.2. Registration: Registration, Types and Special Certificates
 - 4.3.3. Requirements
- 4.4. Design and Engineering: Aircraft Characterization
 - 4.4.1. Aircraft Cell
 - 4.4.2. On-Board Equipment
 - 4.4.3. Eagle-6 Characterization
- 4.5. Basic Maintenance Theory for Pilots and Engineers
 - 4.5.1. Purpose, Scope and Applicable Regulations
 - 4.5.2. Contents
- 4.6. Aircraft Component Design and Engineering Tools
 - 4.6.1. Components
 - 4.6.2. Tools
- 4.7. Basic Maintenance Practice for Pilots and Engineers
 - 4.7.1. Limitations
- 4.8. Types of Basic Maintenance Checks for Pilots and Engineers
 - 4.8.1. Initial Check
 - 4.8.2. Periodic Checks
- 4.9. Basic Aircraft and Ground Station Maintenance for Pilots and Engineers
 - 4.9.1. Preflight
 - 4.9.2. Postflight
- 4.10. Use of Lithium-Polymer Batteries
 - 4.10.1. Charging, Use and Storage
 - 4.10.2. Basic Calculation of Battery Autonomy



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

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.



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.



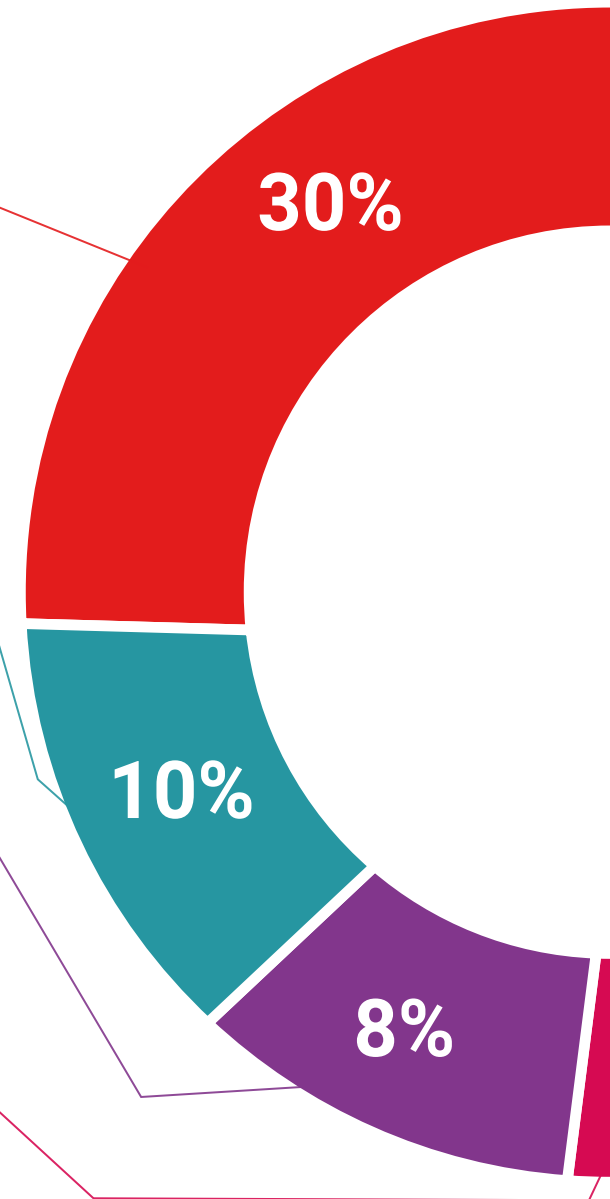
Practising Skills and Abilities

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 Drones 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 Drones** 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 from career evaluation committees.

Title: Postgraduate Diploma in Drones

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 quality
development languages
virtual classroom

tech technological
university

Postgraduate Diploma Drones

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

Postgraduate Diploma Drones

