

Postgraduate Diploma Airport Infrastructure





Postgraduate Diploma Airport Infrastructure

- » 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-airport-infrastructure

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01

Introduction

Airport infrastructures have become increasingly important. A population that is constantly growing and needs to be connected, also needs the tools to be able to move safely by air. Therefore, this training combines the necessary notions about the air and ground dimensions of airports, as well as those related to signaling and beaconing, and airport pavements. All this, condensed in a totally online program, with the convenience of being able to combine the study with other professional and personal projects.





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This educational plan contains the most updated knowledge on airport infrastructures in all its dimensions”

The specific field of airports have undergone transformations at the same time as society has, in order to bring a higher level of safety to air travel.

This Postgraduate Diploma in Airport Infrastructures has been designed to design, manage and understand the "air side" of them, that is, everything related to the aeronautical outdoor areas such as the airfield, service roads and lanes, as well as everything related to air transport. On the other hand, it also focuses on non-aeronautical outdoor areas, i.e., those related to service roads for vehicles, power plants or fire stations, among others.

The study plan continues to delve into the entire dimension of airport signage, beaconing and lighting. This section delves into the lighting needs of runways for airplanes and helicopters, as well as for horizontal runway and taxiway markings. It also emphasizes braking and standby lights, and those issues that have to do with important aspects of airfield lighting.

Finally, the program ends by delving into airport pavement issues such as apron design and preparation, and the design of flexible and rigid airport pavements. Work is also done on materials and their sustainable use. This section has a practical dimension so that students can develop their own skills.

In the most convenient and practical way, this fully online program is designed to redirect their career path and update knowledge in design, construction and operation of airport infrastructures. In addition, it has teaching staff that are always available to the students and the pedagogical resources available on the virtual platform so that students can progress through the content at their own speed and pace.

This **Postgraduate Diploma in Airport Infrastructure** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The development of practical cases presented by experts in Airport Infrastructures
- ◆ 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
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



This Postgraduate Diploma has been designed for you to update your knowledge on Airport Infrastructures at your own pace"

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Take advantage of this opportunity to study online and in the most comfortable way in design, construction and operation of Airport Infrastructures"

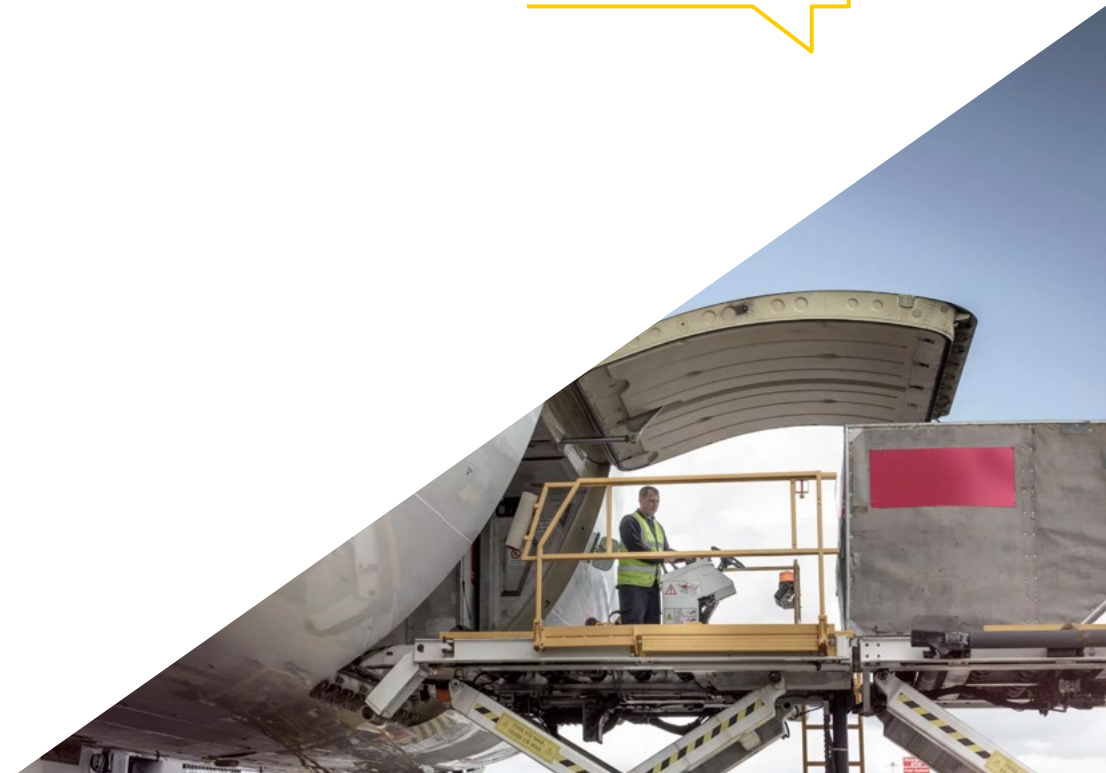
The program's teaching staff includes professionals from the sector who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive education programmed to prepare 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.

Become an expert in the field of "airside" Airport Infrastructures and everything related to the exterior of airports.

Learn all about lighting, beaconing and safety lighting, as well as runway paving with this Postgraduate Diploma.



02

Objectives

This educational program provides students with the skills to design, build and operate air-side airport infrastructures, i.e., external areas for aeronautical and non-aeronautical transport. It also deals with the issues of signage, lighting and signposting, as well as the choice and use of rigid or flexible pavement, suitable for esplanades.





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This complete program will give you the necessary notions about the "air side" or external side of an airport"



General Objectives

- ◆ Provide the professional with the specific and necessary knowledge to perform with a critical and formed opinion in any phase of planning, design, construction or operation of the airport
- ◆ Determine the problems of airport design and look for solutions adjusted to the airport's needs
- ◆ Master the main constraints involved in an airport project
- ◆ Acquire a specialized approach and be able to monitor the management of any airport department
- ◆ Apply the latest techniques used in the industry today
- ◆ Outline the new trends that airports plan to implement in the post-COVID era
- ◆ To deepen the knowledge of the different critical and common airside infrastructures and their design



Face new challenges in your professional career as an expert in outdoor areas in Airport Infrastructures with this fully online program”





Specific Objectives

Module 1. Airside Airport Infrastructures

- ◆ Identify the optimal location for an airport
- ◆ Detailing the content and drafting a master plan
- ◆ Master the airport manual, as a starting point for an airport
- ◆ Delve into runway types and runway designs
- ◆ Delve into the types and design of a taxiway and its parts
- ◆ Master the types and design of aprons
- ◆ Determine the problems in the construction of apron slabs on aprons
- ◆ Identify the drainage systems needed in an airport, as well as their design
- ◆ Analyze the safety areas and design of airports
- ◆ Master the minimum requirements of a heliport
- ◆ Acquire heliport design skills
- ◆ To delve into the requirements and design of the taxiways

Module 2. Airside Aeronautic Infrastructures

- ◆ Address the problems of operating a de-icing platform
- ◆ Identify the Location Requirements of an SSEI
- ◆ Identify the parts of a fire station
- ◆ Develop the ability to functionally design a power station
- ◆ Expand the knowledge to design signaling, hawkler, and state pavilion parks
- ◆ Delve into fencing design issues
- ◆ Design engine test areas
- ◆ Identify the functional requirements of boarding bridges
- ◆ Identify the functional requirements of airport service tunnels
- ◆ Master the airport simulation software

Module 3. VPAs and non-VPAs at the Airport

- ◆ In-depth depth horizontal runway markings, taxiways, apron horizontal markings, anywhere on the airfield
- ◆ Identify in depth runway, taxiway, apron and airfield lighting systems
- ◆ Detail the types of signs usable on an airfield
- ◆ Design the airfield signage information system
- ◆ Know the requirements for matching AAVV and radio aids
- ◆ Identify apron lighting requirements
- ◆ Monitor compliance with lighting requirements

Module 4. Airport Pavements

- ◆ Identify the importance of pavements in the life of the airport
- ◆ Identify the constituent materials of pavements
- ◆ Know the requirements for the installation of the work units that make up the pavements
- ◆ Learn more about the design parameters of an apron
- ◆ Go in depth into the dimensioning of rigid pavements, to dimension flexible pavements
- ◆ Detailing of pavement monitoring methods
- ◆ Identify pavement defects and the causes of these defects
- ◆ Distinguish the repair and reinforcement actions to be recommended in each situation

03

Course Management

This Postgraduate Diploma has a complete teaching staff made up of prestigious professionals in the sector. All of them have a long professional and teaching career that supports them and endorse this educational program. The faculty of this study plan will accompany students throughout the learning process, applying an updated syllabus and adjusted to the latest advances in Airport Infrastructures.





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Specialize with the most updated content and adjusted to the latest advances in the sector, provided by teaching staff with a proven competence in their field"

Management



D. Moreno Merino, Rafael

- ♦ High Speed Projects Technician. Risk Assessment Expert at INECO
- ♦ Airport Maintenance Project Manager at INECO
- ♦ Engineer at INECO
- ♦ Director of the Master's Degree in Project, Construction and Operation of Airport Infrastructures
- ♦ Head of Occupational Risk Prevention and Production at ACCIONA
- ♦ Professional Master's Degree in Business Administration at Polytechnic University of Madrid
- ♦ Professional Master's Degree in Business Administration from Polytechnic University of Madrid
- ♦ Degree in Civil Engineering from the Catholic University of San Antonio de Murcia



04

Structure and Content

The structure of the content of this Postgraduate Diploma in Airport Infrastructures is designed to introduce the student, in parts, to the outdoor areas of an airport and the main elements on which it depends. Therefore, the first module is introduced in depth in the runway and what is related to aeronautical transport, while the second module deals with what has to do with non-aeronautical transport. The third and fourth modules are aimed at understanding signaling and beaconing, and airport pavements.



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The management team of this Postgraduate Diploma has organized the syllabus into modules, so that you can follow a structured order of the content"

Module 1. Airside Airport Infrastructures

- 1.1. Airport Planning
 - 1.1.1. Location of an Airport
 - 1.1.2. Meteorological Requirements
 - 1.1.3. Master Plan Land Reserves
 - 1.1.4. Airport Certificate
- 1.2. The Track
 - 1.2.1. Design. Typology
 - 1.2.2. Construction
 - 1.2.3. Runway Operation
- 1.3. Road of Filming
 - 1.3.1. Design of Taxiways
 - 1.3.2. Operation Traffic Siding
 - 1.3.3. Platform Shooting Lanes
- 1.4. Platforms
 - 1.4.1. Parking Lot Design
 - 1.4.2. Dimensioning of Service Areas
 - 1.4.3. Platform Types
 - 1.4.4. Construction Slabs Joints
 - 1.4.5. Platform Operation
- 1.5. Aircraft Safety Areas
 - 1.5.1. Striping, RESAs, Clearways and Stopways Design
 - 1.5.2. Construction Earrings Resistance
 - 1.5.3. Operation
- 1.6. Drainages
 - 1.6.1. Drainage in Paved Areas
 - 1.6.2. Drainage in NO Paved Areas
 - 1.6.3. Hydrocarbon Separation Plants (HSP)
 - 1.6.4. Construction Problems

- 1.7. Obstacle Limiting Surfaces
 - 1.7.1. Declaration of Limiting Surfaces
 - 1.7.2. Obstacle Limitations in Municipalities
 - 1.7.3. Surveillance and Violation
- 1.8. Heliports
 - 1.8.1. Design. FATO and TLOF
 - 1.8.2. Construction
 - 1.8.3. Operation
- 1.9. Control Tower
 - 1.9.1. Functional Design
 - 1.9.2. Construction
 - 1.9.3. Operation
- 1.10. Carousel Courtyards
 - 1.10.1. Design and Functionality
 - 1.10.2. Construction Pavements
 - 1.10.3. Operation

Module 2. Airside Aeronautic Infrastructures

- 2.1. Service Roads for Vehicles
 - 2.1.1. Design
 - 2.1.2. Construction
 - 2.1.3. Operation
- 2.2. Thawing Platform
 - 2.2.1. Dimensioning
 - 2.2.2. Sanitation Design
 - 2.2.3. Operation
- 2.3. Fire Station
 - 2.3.1. Design and Location
 - 2.3.2. Construction
 - 2.3.3. Operation

- 2.4. Power Plant
 - 2.4.1. Design
 - 2.4.2. Construction
 - 2.4.3. Operation
- 2.5. Other Airport Buildings (Hangars, Signal Towers, Beaconing, Machinery Park, State Pavilion)
 - 2.5.1. Operational Requirements
 - 2.5.2. Non-Functional Requirements
 - 2.5.3. Design and Construction
 - 2.5.4. Operation
- 2.6. Fencing
 - 2.6.1. Regulatory Design Requirements
 - 2.6.2. Construction
 - 2.6.3. Surveillance and Operation
- 2.7. Engine Test Areas
 - 2.7.1. Functional Design
 - 2.7.2. Construction
 - 2.7.3. Operation Authorization
- 2.8. Airport Service Tunnels
 - 2.8.1. Functional Design
 - 2.8.2. Operation
 - 2.8.3. Particular Case of Service Galleries
- 2.9. Gangways and Aircraft Support Equipment
 - 2.9.1. Functional Requirements
 - 2.9.2. Supply Records
 - 2.9.3. Operation
- 2.10. Airport Software
 - 2.10.1. Aviplan. Utilities
 - 2.10.2. Aviplan. Operation
 - 2.10.3. Aviplan. Case Study

Module 3. VPAs and Non-VPAs at the Airport

- 3.1. Horizontal Runway Marking
 - 3.1.1. Threshold Signal
 - 3.1.2. Runway Designator Sign
 - 3.1.3. Track Shaft
 - 3.1.4. Side Girdle
 - 3.1.5. Contact Zone
 - 3.1.6. Waiting Point Signs
 - 3.1.7. Other Signs on the Runway
- 3.2. Horizontal Signaling in Filming
 - 3.2.1. TCL Taxiway Axle Signal
 - 3.2.2. Improved Signal
 - 3.2.3. Edge Signal
 - 3.2.4. Waiting Point Signs INTERMEDIATE
 - 3.2.5. Other Signs on the Filming
- 3.3. Horizontal Signaling in Platform
 - 3.3.1. Edge Signal
 - 3.3.2. ABL Safety Line
 - 3.3.3. Equipment Restriction Area Sign
 - 3.3.4. Signal Equipment Waiting Area
 - 3.3.5. Parking Stall Signs
 - 3.3.6. Post Entry Signal
 - 3.3.7. Pedestrian Path Sign
 - 3.3.8. Other Signs on the Filming
- 3.4. Signs
 - 3.4.1. Aircraft Signs. Information
 - 3.4.2. Aircraft Signs. Obligation
 - 3.4.3. Vehicle and Pedestrian Signs

- 3.5. Signs and Signs at Heliports
 - 3.5.1. Signs on Elevated Heliports
 - 3.5.2. Signals on Surface Heliports
 - 3.5.3. Helicopter Parking Sign
- 3.6. Visual Aids on the Track. Light
 - 3.6.1. Axle Lights
 - 3.6.2. Threshold and End Lights
 - 3.6.3. PAPIs
 - 3.6.4. Approach Lighting System
 - 3.6.5. Windssocks
 - 3.6.6. Other Visual Aids
- 3.7. Visual Aids on the Filming. Light
 - 3.7.1. Axle Lights
 - 3.7.2. Edge Lights
 - 3.7.3. Other Visual Aids
- 3.8. Other Visual Aids Radio Aids
 - 3.8.1. ILS
 - 3.8.2. VOR DME
 - 3.8.3. Other Non-Visual Aids
- 3.9. Lighting
 - 3.9.1. Lighting Requirements
 - 3.9.2. Mega Towers
 - 3.9.3. Lighting Studies
- 3.10. Waiting Points
 - 3.10.1. Track Entry Waiting Points
 - 3.10.2. Waiting Points
 - 3.10.3. Runway Protection Lights
 - 3.10.4. Stop Bars



Module 4. Airport Pavements

- 4.1. Airport Pavement Typology
 - 4.1.1. Pavements in the Life of the Airport
 - 4.1.2. Pavement Types and Design Parameters
 - 4.1.3. Economic Management of Pavements
- 4.2. Materials to Build Pavements
 - 4.2.1. Bituminous Mixtures
 - 4.2.2. Concretes
 - 4.2.3. Granular Bases
- 4.3. Design and Preparation of the Esplanade
 - 4.3.1. Types of Soils
 - 4.3.2. Parameters that Determine the Strength of a Slab
 - 4.3.3. Land Improvements
- 4.4. Design of Flexible Airport Pavements
 - 4.4.1. Standard Flexible Pavement Cross-Sections and Minimum Cross-Sections
 - 4.4.2. Design of Flexible Pavements. Airport Regulations
 - 4.4.3. Design of Flexible Resistance Pavements. Airport Regulations
- 4.5. Design of Rigid Airport Pavements
 - 4.5.1. Typical rigid Pavement Cross-Sections and Minimum Cross-Sections
 - 4.5.2. Design of Resistant Rigid Pavements Under Airport Regulations
 - 4.5.3. Design of NO Resistant Rigid Pavements Under Airport Regulations
 - 4.5.4. FAARFIELD Case Study
- 4.6. Evaluation of Surface Parameters
 - 4.6.1. Coefficient of Friction
 - 4.6.2. Surface Texture
 - 4.6.3. Surface Regularity
 - 4.6.4. Pavement Condition Index (PCI)
- 4.7. Evaluation of Structural Parameters
 - 4.7.1. Non-Destructive Testing for Structural Capacity Determination
 - 4.7.2. Destructive Testing to Determine Structural Capacity
 - 4.7.3. Notification and Action Procedures
- 4.8. Skill Evaluation
 - 4.8.1. Type of Esplanades
 - 4.8.2. Strength of Compacted Soils (CBR test)
 - 4.8.3. Strength of Compacted Soils (plate load)
- 4.9. Catalog of Pavement Defects
 - 4.9.1. Defects in Flexible Pavements
 - 4.9.2. Defects in Rigid Pavements
 - 4.9.3. Defects in Esplanades
- 4.10. Screening, Reinforcement or Deep Reclamation
 - 4.10.1. Pavement Service Life Analysis
 - 4.10.2. Screeds to Improve Pavement Surface Condition
 - 4.10.3. Reinforcements and Deep Renovation to Improve the Structural Condition of the Pavement



This is your opportunity to study comfortably and at your own pace this educational program specialized in Airport Infrastructures”

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.

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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.



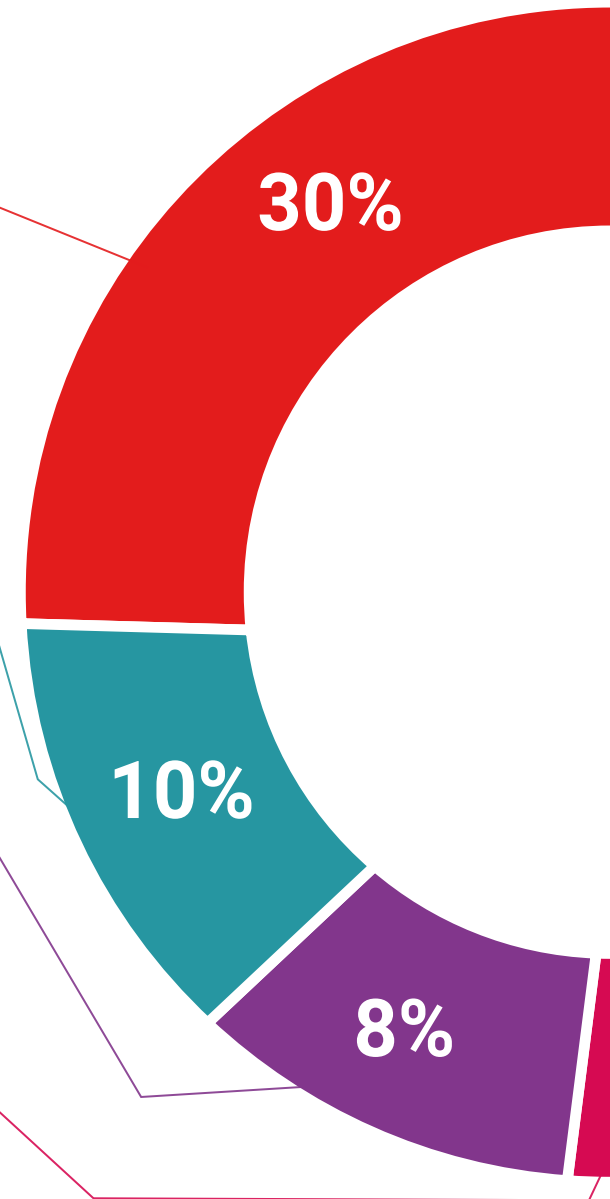
Practising Skills and Abilities

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 Airport Infrastructures 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 Airport Infrastructure** 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 Airport Infrastructures**

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



Postgraduate Diploma Airport Infrastructure

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

Postgraduate Diploma Airport Infrastructure

