Professional Master's Degree

Design, Construction and Operation of Airport Infrastructures

tech global university

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Professional Master's Degree

Design, Construction and Operation of Airport Infrastructures

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/engineering/professional-master-degree/master-design-construction-operation-airport-infrastructures**

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01

Introduction

Airports are complex infrastructures, very specific spaces designed to facilitate connections between different parts of the world. Normally, they are comprised of different elements, among which: the runway, the control tower, power station, beaconing and communications facilities, as well as approach and navigation aids all stand out. All of them are explained in this training, so that the student understands in depth how they are developed and how they depend on each other to ensure the operation as a whole. In addition, the online mode in which it is taught ensures that the course can be combined with other personal and professional projects.

An online program that will make you specialize as a true expert in charge of the main areas of an airport"

The Professional Master's Degree in Design, Construction and Operation of Airport Infrastructures is a complete educational program that delves into the various areas related to the construction and operation of all areas that are part of the usual and common activity of an airport. Therefore, the study plan has a comprehensive development with respect to the analysis of both infrastructure and airport operations and management systems.

Therefore, in the first instance, the first contents are dedicated in greater depth to the analysis of the infrastructures. The first sections are dedicated to the main air side infrastructures, such as runway, taxiways and aprons, to later focus on the ground side of the building: access to the airport and configuration of the airport areas.

The plan continues with an in-depth study of signaling, beaconing and visual aids for the airfield, and the fifth module deals with airport pavements. The last module of the infrastructure block closes with a sixth section, which deals in depth with the maintenance of the aforementioned spaces and areas.

In terms of airport operations and their management systems, this Professional Master's Degree delves into the analysis of airport operations, as well as the development of the airport manual and the analysis of multi-management, illustrating the student in the different management systems implemented at the airport.

All this in a comfortable study format, totally online and with all the pedagogical resources and multimedia materials available so that this training is compatible with other personal or professional projects of the routine. With Relearning and Learning by Doing methodology, learning will have an eminently practical dimension, although always accompanied by an updated theoretical conceptualization appropriate to the field of work.

This **Professional Master's Degree in Design, Construction and Operation of Airport Infrastructures** contains the most complete and up-to-date educational program on the market. The most important features include:

- The development of case studies presented by experts in Design, Construction and Operation of 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

Train yourself as a manager in the most important areas of airport infrastructures with this Professional Master's Degree fully online"

Don't wait any longer: specialize your resume with this Professional Master's Degree in Design, Construction and Operation of Airport Infrastructures totally online"

Thanks to this complete educational program, you will be able to delve into the air and ground infrastructures that are part of an airport.

Understand the vicissitudes of airport operations and the management systems involved.

The program's teaching staff includes professionals from sector who contribute their work experience to this educational 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 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 purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

The objectives of this study plan are intended to enable students to develop the professional judgment and ability to manage any phase of airport planning, design, construction or operation. The student will be perfectly qualified to analyze problems in airport ground and air infrastructures, acquire a specialized approach and be able to monitor the management of any airport department, as well as outline new trends in the post-COVID era.

With clear and defined objectives, you will be able to bring out the best version of the professional in you and assume positions of responsibility"

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 in the post-COVID era
- Expand the knowledge of the different critical and common airside infrastructures and their design

Get a comprehensive learning experience thanks to TECH's perfectly structured curricula"

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
- Deepen 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
- 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, hawker, 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. Landside and Terminal

- Identify the state of the art regarding rail connections to airports
- Detail the functional problems of airport accesses
- Know the airport accesses and airport parking areas
- Master the functional requirements of each terminal area
- Master terminal simulation software

Module 4. VPAs and Non-VPAs at the Airport

- Delve into 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 5. Operations Manual

- Master the contents of the airport manual
- Delve into the content of the access control procedure
- Master the content of the procedure for the control of inspections of the movement area
- Know the contents of the procedure for work on the aerodrome
- Identify the contents of the apron management procedure
- Recognize the content of the wildlife hazard management procedure
- Know the content of the surface and protection area control procedure
- Master the content of the procedure for the transfer of disabled aircraft
- Know the content of other procedures affecting operation and exploitation (maintenance, degraded atmospheric conditions, and aircraft operations beyond those authorized)

Module 6. Airport Operations

- Delve into the categorization of the operations that take place at the airport
- Learn about the singularity of helicopter operations
- Delve into the problematic of the existence of special operations
- Examine the apron safety regulations governing ground activities
- Master the functions and requirements of the airport firefighting service
- Know the scope, interconnections with other documents, and action requirements of the emergency plan
- Delimit the main services provided by or at the airport to airlines
- Interrelate the administrative classification of Handling
- Delve into the structure and scope of the main Safety programs in place at the airport
- Determine the activities planned at the airport to carry out an adequate obstacle control

Module 7. Multi-Management

- Examine the existence and scope of the airport regulatory document, as well as the operational safety management systems
- Examine the existence and scope of environmental management systems
- Determine the existence of the quality system and processes, safety management systems and their scope

- Delve into the existence of CGA and CEOPS management centers and their functions
- Know the particularities of the network operation and its impact on the HR involved Detail the annual budgets
- Identify the particularities of the change management process for the maintenance of the airport certificate

Module 8. 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
- Detail pavement monitoring methods
- Identify pavement defects and the causes of these defects
- Distinguish the repair and reinforcement actions to be recommended in each situation

Module 9. Airport Maintenance

- Master the regulatory requirements to the airport maintenance plan
- Determine the structure, scope and periodic review of the maintenance plan
- Address visual aids maintenance requirements
- Identify signage maintenance requirements
- Analyze maintenance requirements for low voltage electrical systems
- Specify maintenance requirements for high voltage electrical systems
- Identify system testing protocols
- Specify maintenance requirements for motion area surfaces surfaces
- Address maintenance requirements for fencing and other features
- Delve into the maintenance requirements of other equipment

Module 10. Systemic Airport Management

- Identify the relationships of each stakeholder in the management of an airport
- Delve into the use of scorecards as a decision making tool
- Master the global management of an airport

03

Skills

By completing this Professional Master's Degree, professionals in the sector who want to direct their career towards the airport sector, will achieve technical training in areas such as engineering or architecture, as well as in general issues related to the creation of infrastructures. Those who want to specialize in this technical knowledge to improve their performance will also develop management and regulatory skills and abilities. It also provides operations, maintenance and other technical staff with greater knowledge of the airport business.

The skills acquired after completing this Professional Master's Degree will position you as a qualified professional, prepared to manage and take responsibility for the area of airport infrastructure of your choice"

General Skills

- Acquire skills to perform successfully in various departments of any airport, such as operations, infrastructure, engineering, maintenance, services or office
- Achieve a complete and global analysis of airports, the design of their infrastructures and their operation, necessarily conditioned by the management systems implemented in European airports
- To develop professional criteria and the ability to manage any phase of airport planning, design, construction or operation
- To be able to perform various executive functions in an efficient and effective manner
- Analyze the latest regulations

Become proficient in all the airport infrastructures that make up an airport and specialize your career in the one you like the most"

Specific Skills

- Progress in consulting or construction companies
- Analyze problems in the ground and air infrastructures of airport infrastructure
- Outline new trends set in the post-COVID era
- Provide a detailed overview of airside aeronautical infrastructures, updated with the latest regulatory review
- Identify the drainage systems needed in an airport, as well as their design
- Analyze the safety areas and design of airports
- Train for the design of a service road, a fire station and the functional design of a power plant
- Master airport and terminal simulation software
- Understand the requirements and implementation of airport signage and beaconing
- Acquire a specialized approach and be able to monitor the management of any airport department
- Enable the use of different computer programs used in airport design and operation

04

Course Management

This Professional Master's Degree has an exceptional management and teaching staff, as do all the qualifications offered by TECH Global University Prestigious professionals in their sector, with long and consolidated careers that give even more value to the content they teach. TECH always insists on providing students with theoretical and practical notions, but also professional skills that make the student a professional with criteria in their field of action. The teachers of this program will be available to solve doubts, explain questions in a personalized way and, in short, to tutor the students while they are taking this study plan.

The faculty of this educational program will always be available to answer your questions and guide your learning"

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
- Master's Degree in Business Administration at Polytechnic University of Madrid
- Master's Degree in Business Administration from Polytechnic University of Madrid
- Degree in Civil Engineering from San Antonio Catholic University of Murcia

Professors

Ms. Redondo de la Mata, Elisa

- Aerospace Engineer Aviation and Safety Expert
- System security engineer. Plan Safe, Australia
- Expert in Airport Operations Security. Aena
- Team Leader of airport projects at Ineco
- ATCO training specialist. SAERCO (Aeronautical Services Control and Navigation S.L)
- ATM security specialist. FerroNATS
- Degree in Aerospace Engineering, Navigation and Aerospace Systems. Polytechnic University of Madrid
- Professional Master's Degree in Industrial Management, Project Management. Polytechnic University of Madrid

Ms. Blázquez del Rivero, Miriam

- Aeronautical Engineer at Gesnaer Consulting
- Airport Engineer for INECO
- Junior Aeronautical Engineer for ALBEN 4000 Engineering and Consulting
- Consultant for Altran and Alben 4000
- Aeronautical Technical Engineer at Polytechnic University of Madrid

D. Martín Ramos, Jorge

- Specialist in Airport Pavements
- Experience in airport pavements in airports in different continents
- Trainer for the Spanish Ministry of Public Works in Airport Issues
- Professional Master's Degree in Physical Sciences
- Professional Master's Degree en Airport Systems by the Polytechnic University of Madrid
- Bituminous Mixes Course: Dosage, Manufacture, Laying and Quality Control by INTEVÍA
- Professional Expert Course on Civil Works Pavements at the Technical Association of Roads
- Course on Pavement Evaluation Software Program ELMOD 6 by DYNATEST

Ms. Fernández Espiniella, Inés

- Operations and Airport Services Technician in Aena
- Team Leader in the Operations Management Division at Aena
- Degree in Aerospace Engineering from the University of León
- Aeronautical Technical Engineering, Airport Specialty, Polytechnic University of Madrid
- Executive MBA in Business Administration from the School of Industrial Organization (EOI)

05

Structure and Content

The content of this Professional Master's Degree has been designed and divided into two main areas: the first focuses on air and ground infrastructures, with several sections that delve into these areas, while the area of operations management and airport systems is contained in other more specific sections on issues of documentation, multi-management and management systems implemented in airports. The student will obtain a systemic view of the airport as a living, changing and interdependent system in a final module that brings together the most important approaches that are subtracted from the course.

Learn the fundamentals of ground and air infrastructure management, as well as how to manage the daily operations of an airport"

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 Runway
- 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, Beacons, 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. Landside and Terminal

3.1. Railway Accesses
- 3.1.1. Metro
- 3.1.2. AVE
- 3.1.3. Suburban
- 3.1.4. Streetcars

3.2. Access for Vehicles and Municipal Services
- 3.2.1. Private Vehicle Access
- 3.2.2. Cab Exchange and VTC Platforms
- 3.2.3. Bus Stations
- 3.2.4. Municipal Police and Tow Truck

3.3. Public and Staff Parking Lots
- 3.3.1. Design
- 3.3.2. Construction
- 3.3.3. Operation

3.4. The Terminal. Check-In Area
- 3.4.1. Dimensioning
- 3.4.2. Functionality
- 3.4.3. Operation

3.5. The Terminal. Boarding Area
- 3.5.1. Dimensioning
- 3.5.2. Functionality
- 3.5.3. Operation

3.6. Baggage Claim Area
- 3.6.1. Dimensioning
- 3.6.2. Racetracks
- 3.6.3. Operation

3.7. The Terminal Commercial Areas
- 3.7.1. Passenger Flows Domestic and International Flights
- 3.7.2. Commercial Areas Location
- 3.7.3. Security Filter Management

3.8. Accessibility and Signage
- 3.8.1. Accessibility
- 3.8.2. Signage
- 3.8.3. Wayfinding Intelligent

3.9. Airport Passenger Services
- 3.9.1. Information
- 3.9.2. PMRs
- 3.9.3. Facilities

3.10. Airport Software
- 3.10.1. ARTport Utilities
- 3.10.2. ARTport Operation

Module 4. VPAs and Non-VPAs at the Airport

4.1. Horizontal Runway Marking
- 4.1.1. Threshold Signal
- 4.1.2. Runway Designator Sign
- 4.1.3. Track Shaft
- 4.1.4. Side Girdle
- 4.1.5. Contact Zone
- 4.1.6. Waiting Point Signs
- 4.1.7. Other Signs on the Runway

4.2. Horizontal Signaling in Filming
- 4.2.1. TCL Taxiway Axle Signal
- 4.2.2. Improved Signal
- 4.2.3. Edge Signal
- 4.2.4. Waiting Point Signs INTERMEDIATE
- 4.2.5. Other Signs on the Filming

4.3. Horizontal Signaling in Platform
- 4.3.1. Edge Signal
- 4.3.2. ABL Safety Line
- 4.3.3. Equipment Restriction Area Sign
- 4.3.4. Signal Equipment Waiting Area
- 4.3.5. Parking Stall Signs
- 4.3.6. Post Entry Signal
- 4.3.7. Pedestrian Path Sign
- 4.3.8. Other Signs on the Filming

4.4. Signs
- 4.4.1. Aircraft Signs. Information
- 4.4.2. Aircraft Signs. Obligation
- 4.4.3. Vehicle and Pedestrian Signs

4.5. Signs and Signs at Heliports
- 4.5.1. Signs on Elevated Heliports
- 4.5.2. Signals on Surface Heliports
- 4.5.3. Helicopter Parking Sign

4.6. Visual Aids on the Track. Lighting
- 4.6.1. Axle Lights
- 4.6.2. Threshold and End Lights
- 4.6.3. PAPIs
- 4.6.4. Approach Lighting System
- 4.6.5. Windsocks
- 4.6.6. Other Visual Aids

4.7. Visual Aids of Filming. Light
- 4.7.1. Axle Lights
- 4.7.2. Edge Lights
- 4.7.3. Other Visual Aids

4.8. Other Visual Aids Radio Aids
- 4.8.1. ILS
- 4.8.2. VOR DME
- 4.8.3. Other Non-Visual Aids

4.9. Lighting
- 4.9.1. Lighting Requirements
- 4.9.2. Mega Towers
- 4.9.3. Lighting Studies

4.10. Waiting Points
- 4.10.1. Track Entry Waiting Points
- 4.10.2. Waiting Points
- 4.10.3. Runway Protection Lights
- 4.10.4. Stop Bars

Module 5. Operations Manual

5.1. Structure and Maintenance of the Airport Manual
- 5.1.1. Structure and Contents of the Manual
- 5.1.2. Operational Uses Document
- 5.1.3. Manual Updates. Change Management

5.2. Access Control to the Movement Area
- 5.2.1. Mandatory Controls Scope
- 5.2.2. Random Checks
- 5.2.3. Records

5.3. Inspections of the Movement Area
- 5.3.1. Track Inspections Methodology. Frequency (F)
- 5.3.2. Other Inspections
- 5.3.3. Records

5.4. Work at the Airfield
- 5.4.1. Instructions for the Execution of in Airports Works
- 5.4.2. Work Permits
- 5.4.3. Records

5.5. Platform Operation
- 5.5.1. Platform Operation
- 5.5.2. Platform Saturation
- 5.5.3. Platform Management Software Restrictions and Incompatibilities
- 5.5.4. Other Situations
- 5.5.5. Records

5.6. Wildlife Hazard Management
- 5.6.1. The Wildlife Coordinator
- 5.6.2. Bird Repellers
- 5.6.3. Wildlife Control Program
- 5.6.4. Obligations
- 5.6.5. Records

5.7. Control of Airport Protection Areas and Surfaces
- 5.7.1. Surveillance Inside the Airport
- 5.7.2. Frangibility
- 5.7.3. Surveillance Inside the Airport
- 5.7.4. Records

5.8. Transfer of Disabled Aircraft
- 5.8.1. Necessary Resources Agreements
- 5.8.2. Records

5.9. Nexus planes
- 5.9.1. Air Side Infrastructure plans
- 5.9.2. Operational Drawings
- 5.9.3. Maintenance and Updating of Plans

5.10. Other Operational Procedures
- 5.10.1. Maintenance Plans
- 5.10.2. Operations in Non-Standard Weather Conditions
- 5.10.3. Higher Key Aircraft Operations Affections to Pavements

Module 6. Airport Operations

6.1. Track Operation Categories
- 6.1.1. Visual Operations
- 6.1.2. NP Instruments
- 6.1.3. Precision Instrumentation
- 6.1.4. Minimum Requirements for Each Category

6.2. Helicopter Operations
- 6.2.1. Aerial Filming
- 6.2.2. Interference
- 6.2.3. Helicopter Performances

6.3. Special Operations

6.3.1. Drones
6.3.2. Helicopters
6.3.3. Flights with Exemption Letter
6.3.4. Hospital Flights
6.4. Platform Safety Regulations
6.4.1. NSP Contents
6.4.2. The PCP and the PCP R
6.4.3. ERA; EPA
6.4.4. Inspections and Penalties
6.5. The SSEI
6.5.1. Fire Department
6.5.2. Categories by Operations
6.5.3. SSEI Service Degradation
6.5.4. Simulations. Response Times
6.6. The Self-Protection Plan
6.6.1. Structure and Scope of the Plan
6.6.2. Involved Parties and Obligations
6.6.3. Coordination with Higher Level Plans
6.6.4. Simulation Program
6.6.5. Crisis Management
6.7. Airport Services to Airlines
6.7.1. Refills
6.7.2. Thaws
6.7.3. Procurement
6.8. The Handling
6.8.1. Scope of Handling
6.8.2. Handling Agent Classification
6.8.3. Service Contract Handling
6.9. Safety Programs
6.9.1. FOD Prevention Program
6.9.2. Track Safety Program
6.9.3. Platform Safety Programming

6.10. Television Control
- 6.10.1. Obstacle Identification and Assessment Documents
- 6.10.2. Obstacles Inside the Airport
- 6.10.3. Obstacles Outside the Airport

Module 7. Multi-Management

7.1. SGSO
- 7.1.1. Structure of SGSO
- 7.1.2. Risk Management
- 7.1.3. Annual Operational Safety Program

7.2. Security/Safety
- 7.2.1. Security Responsible Parties. FFCCSSEE
- 7.2.2. Airport Security Management
- 7.2.3. Safety Versus Convenience

7.3. Environmental Management Systems
- 7.3.1. The Environmental Management System
- 7.3.2. Noise Actions
- 7.3.3. Actions on Light Pollution
- 7.3.4. Other Lines of Action

7.4. Quality
- 7.4.1. The Quality Management System
- 7.4.2. The Quality of Aeronautical Data
- 7.4.3. Quality Required from Suppliers
- 7.4.4. Internal Audits and Other Actions

7.5. The EGC and CEOPS
- 7.5.1. CEOPS Aeronautical Management
- 7.5.2. CGA Airport Management
- 7.5.3. Coordination with Air Navigation

7.6. Networks Management and HR Management
- 7.6.1. Network Concept
- 7.6.2. Alternative Airport
- 7.6.3. HR Management H24; H12
- 7.6.4. Agreements

7.7. Annual Budget
- 7.7.1. Aeronautical Revenues
- 7.7.2. Aeronautical Revenues
- 7.7.3. Annual Budget. Follow-Up and Compliance
- 7.7.4. Restrictions and Financial Obligations

Module 8. Airport Pavements

8.1. Airport Pavement Typology
- 8.1.1. Pavements in the Life of the Airport
- 8.1.2. Pavement Types and Design Parameters
- 8.1.3. Economic Management of Pavements

8.2. Materials to Build Pavements
- 8.2.1. Bituminous Mixtures
- 8.2.2. Concretes
- 8.2.3. Granular Bases

8.3. Design and Preparation of the Esplanade
- 8.3.1. Types of Soils
- 8.3.2. Parameters that Determine the Strength of a Slab
- 8.3.3. Land Improvements

8.4. Design of Flexible Airport Pavements
- 8.4.1. Standard Flexible Pavement Cross-Sections and Minimum Cross-Sections
- 8.4.2. Design of Flexible Pavements Airport Regulations
- 8.4.3. Design of Flexible Resistance Pavements Airport Regulations

8.5. Design of Rigid Airport Pavements
- 8.5.1. Typical rigid Pavement Cross-Sections and Minimum Cross-Sections
- 8.5.2. Design of Resistant Rigid Pavements Under Airport Regulations
- 8.5.3. Design of NO Resistant Rigid Pavements Under Airport Regulations
- 8.5.4. FAARFIELD Case Study

8.6. Evaluation of Surface Parameters
- 8.6.1. Coefficient of Friction
- 8.6.2. Surface Texture
- 8.6.3. Surface Regularity
- 8.6.4. Pavement Condition Index (PCI)

8.7. Evaluation of Structural Parameters
- 8.7.1. Non-Destructive Testing for Structural Capacity Determination
- 8.7.2. Destructive Testing to Determine Structural Capacity
- 8.7.3. Notification and Action Procedures

8.8. Skill Evaluation
- 8.8.1. Type of Esplanades
- 8.8.2. Strength of Compacted Soils (CBR Test)
- 8.8.3. Strength of Compacted Soils (Plate Load)

8.9. Catalog of Pavement Defects
- 8.9.1. Defects in Flexible Pavements
- 8.9.2. Defects in Rigid Pavements
- 8.9.3. Defects in Esplanades

8.10. Screening, Reinforcement or Deep Reclamation
- 8.10.1. Pavement Service Life Analysis
- 8.10.2. Screeds to Improve Pavement Surface Condition
- 8.10.3. Reinforcements and Deep Renovation to Improve the Structural Condition of the Pavement

Module 9. Airport Maintenance

9.1. Regulatory framework. Maintenance Instructions
- 9.1.1. Regulations: Spanish and European
- 9.1.2. International Regulations (FAA and ICAO)
- 9.1.3. Types of Maintenance Corrective, Predictive, Modifying

9.2. Maintenance Program
- 9.2.1. Definitions, Specifications and Implications
- 9.2.2. Scope of a Maintenance Program Continuous Improvement
- 9.2.3. Compliance Indicators
- 9.2.4. Auditable Maintenance Records

9.3. Maintenance of Visual Aids
- 9.3.1. Maintenance of Overhead Lights
- 9.3.2. Maintenance of Recessed Lighting
- 9.3.3. Mega Tower Maintenance

9.4. Maintenance of Signage
- 9.4.1. Horizontal Runway Marking
- 9.4.2. Horizontal Signaling in Platform Shooting
- 9.4.3. Signs

9.5. Maintenance of Low Voltage Electrical Systems
- 9.5.1. Pictures
- 9.5.2. Distribution Lines
- 9.5.3. Thermography

9.6. Maintenance of HIGH Voltage Electrical Systems
- 9.6.1. Booths
- 9.6.2. Distribution Lines
- 9.6.3. Electric Machines

9.7. Test Protocols
- 9.7.1. Power Supply Outage Tests
- 9.7.2. SMP B
- 9.7.3. SMP E

9.8. Surface Maintenance in the Movement Area
- 9.8.1. Paved Areas
- 9.8.2. Paved Areas
- 9.8.3. Drainage System

9.9. Maintenance of Security Fences and Other Control Devices
- 9.9.1. Fence Maintenance
- 9.9.2. Maintenance of Buildings Related to Aeronautical Operations
- 9.9.3. Maintenance of Buildings Not Related to the Aeronautical Operation
- 9.9.4. Maintenance of Other Installations

9.10. Equipment Maintenance
- 9.10.1. Maintenance of Airport Vehicles. Airport ITV
- 9.10.2. Machinery
- 9.10.3. Computer and Communication Systems Related to Airside Operation

Module 10. Systemic Airport Management

10.1. Air Transportation
- 10.1.1. Elements of Air Transportation
- 10.1.2. Air Transport Institutions
- 10.1.3. Impact on Socioeconomic Development
- 10.1.4. Relationship of Air Transportation with Other Transportation Systems

10.2. Airport Technical Office
- 10.2.1. Air Side Plans
- 10.2.2. Land Side Plans
- 10.2.3. As Built and DFO
- 10.2.4. Other functionalities

10.3. Infrastructure
- 10.3.1. Interrelation Between Track and Shooting
- 10.3.2. Interrelation between Track and Platform
- 10.3.3. Interrelation between Track and Electrical Systems
- 10.3.4. Runway Extensions
- 10.3.5. Track Reductions
- 10.3.6. Platform Modifications

10.4. HR at Airports
- 10.4.1. Airport Buses
- 10.4.2. Public Service
- 10.4.3. Agreements

10.5. Financial Management
- 10.5.1. Aeronautical Revenues
- 10.5.2. Aeronautical Revenues
- 10.5.3. Project Profitability

10.6. The Airport's Public Service
- 10.6.1. Territorial Cohesion
- 10.6.2. Non-Commercial Flights
- 10.6.3. Utility Flights

10.7. Types of Files
- 10.7.1. State Contracts Law
- 10.7.2. Contests
- 10.7.3. Grants

10.8. Airport Project Management
- 10.8.1. The Airport Project Manager
- 10.8.2. Scope
- 10.8.3. Cost Estimation and Control
- 10.8.4. Project Quality Management
- 10.8.5. Contractual Term. Project Planning
- 10.8.6. Transition and Training

10.9. The Scorecard at the Airport
- 10.9.1. Descriptive Scorecards
- 10.9.2. Control Panels
- 10.9.3. Implementation of the Scorecard in Airport Management
- 10.9.4. Case Study

10.10. The Systemic Approach to the Airport
- 10.10.1. Relationships between Infrastructure and Operations
- 10.10.2. Relationships between Infrastructure and HR
- 10.10.3. Relationships between Operation and HR

06

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"

You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.

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

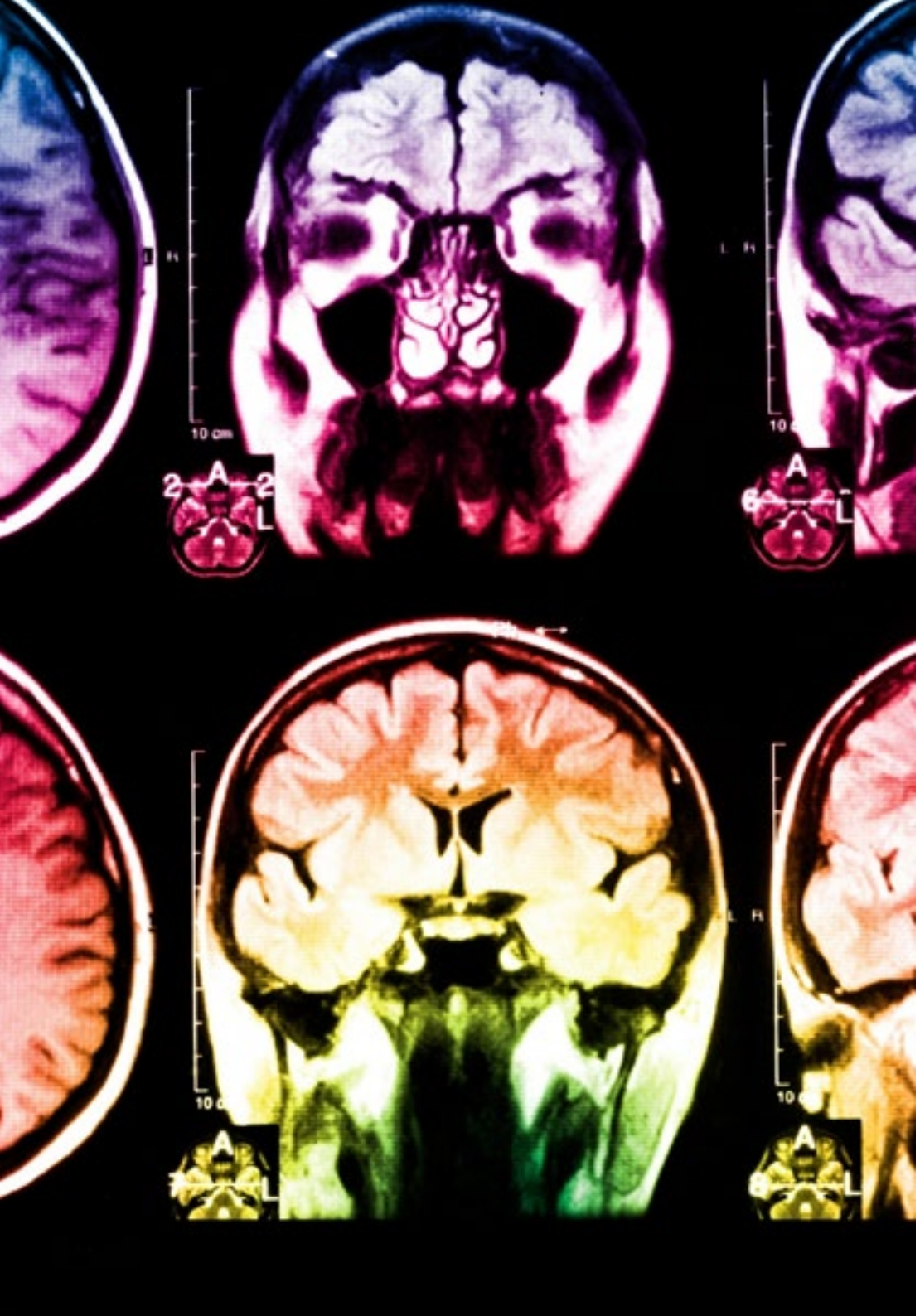
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

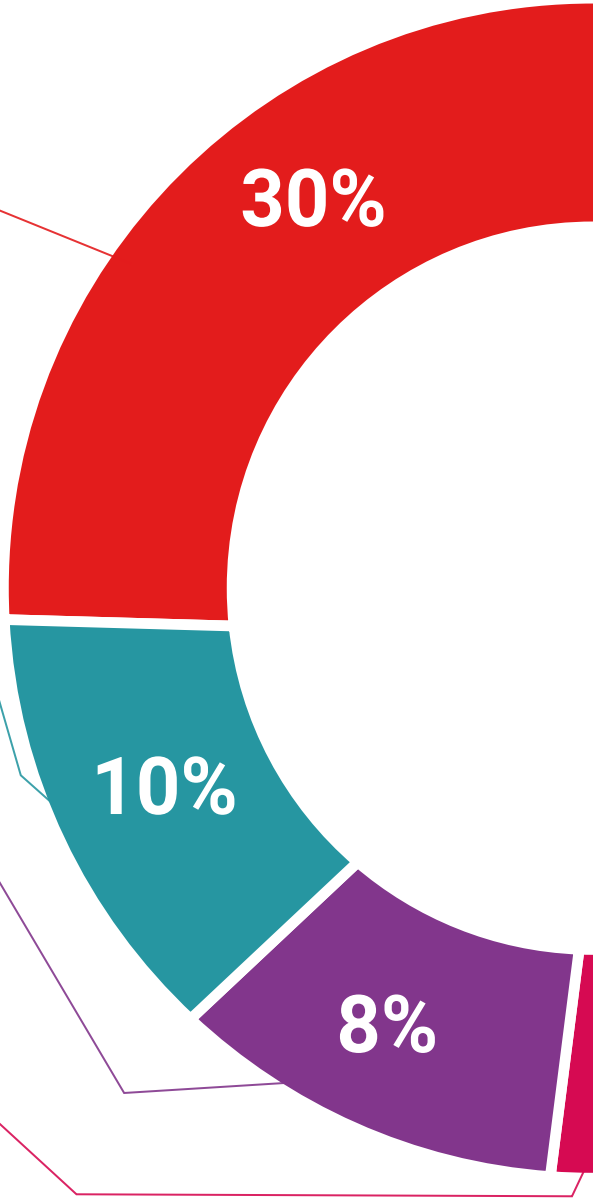
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

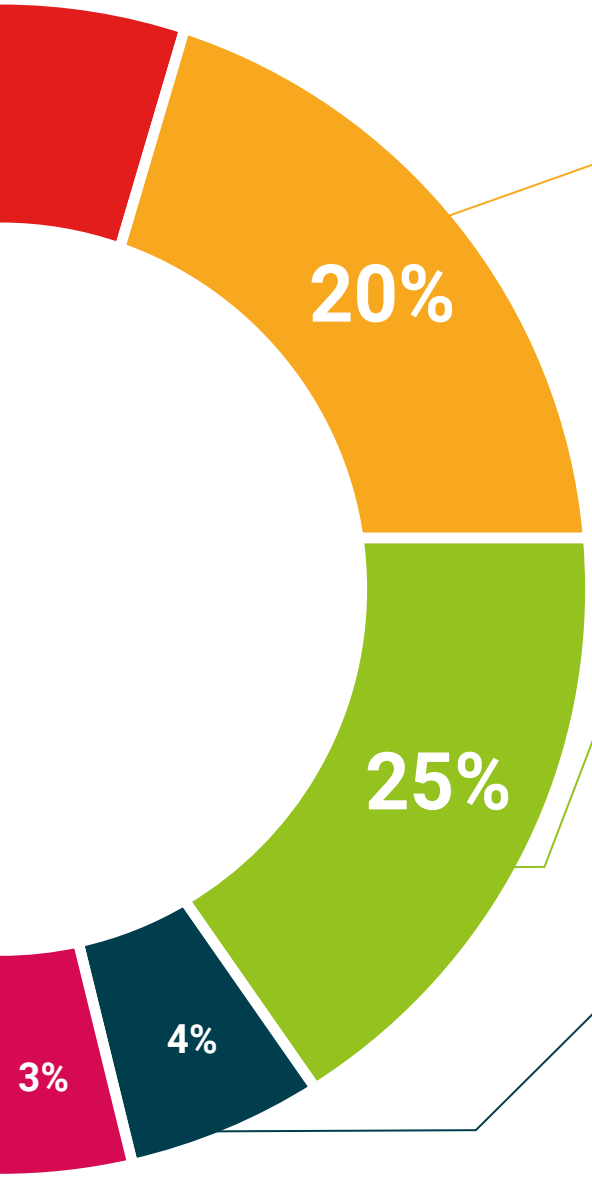
Practising Skills and Abilities

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.

07

Certificate

The Professional Master's Degree Professional Master's Degree in Design, Construction and Operation of Airport Infrastructures guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Global University.

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

This program will allow you to obtain your **Professional Master's Degree diploma in Design, Construction and Operation of Airport Infrastructures** 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** title 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: **Professional Master's Degree in Design, Construction and Operation of Airport Infrastructures**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**

tech global university

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

Professional Master's Degree in Design, Construction and Operation of Airport Infrastructures

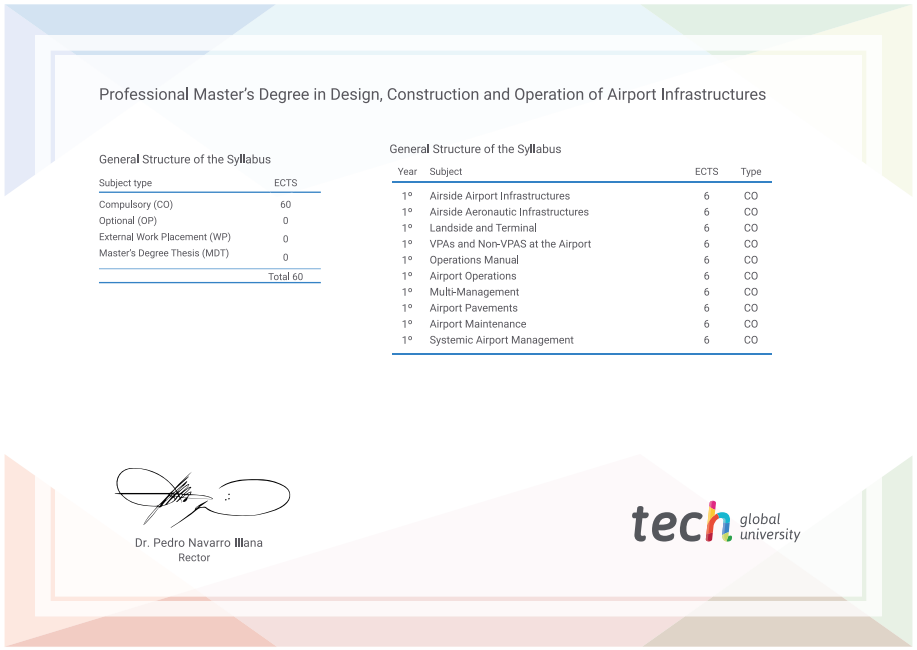
This is a program of 1,500 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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
Rector

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


Professional Master's Degree in Design, Construction and Operation of Airport Infrastructures

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Airside Airport Infrastructures	6	CO
1º	Airside Aeronautic Infrastructures	6	CO
1º	Landside and Terminal	6	CO
1º	VPAs and Non-VPAS at the Airport	6	CO
1º	Operations Manual	6	CO
1º	Airport Operations	6	CO
1º	Multi-Management	6	CO
1º	Airport Pavements	6	CO
1º	Airport Maintenance	6	CO
1º	Systemic Airport Management	6	CO

Dr. Pedro Navarro Illana
Rector

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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Professional Master's Degree

Design, Construction and Operation of Airport Infrastructures

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree

Design, Construction and Operation of Airport Infrastructures

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