

Máster online 100%

Master in Project, Construction and Operation of Airport Infrastructures + 60 ECTS Credits

Structuralia

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Master in Project, Construction and Operation of Airport Infrastructures + 60 ECTS Credits

Modality
Online

Languages
Español

Duration
1500 hours (60 ECTS)

No Limit
AI Assistant

Does it include practices?
NO

Educational Institutions

Structuralia Engineering eLearning

UNIVERSIDAD NEBRIJA

Summary

You will understand the interconnection between engineering, architecture, urban planning and the business model that supports these complex structures. This program offers you an advanced strategic and technical vision of the complete life cycle of airport infrastructure, from its conception to its daily operation. You will delve into the planning of these facilities, analyzing determining factors that influence their development and expansion, including environmental integration. You will address advanced project management and financial management, essential tools for the viability of any complex initiative. You will delve into the design of the basic elements of an airport and the terminal, as well as the pavements and pavements, essential for safety and operability. In addition, you will master the operation and exploitation of these facilities, understanding their role as multimodal nodes and the necessary interaction between the different professional profiles. This

comprehensive approach will allow you to make informed and strategic decisions in infrastructure management, optimizing each phase of the project and its impact on the environment.

Agenda

MODULE 1. INTRODUCTION TO AIRPORTS

1. DIDACTIC UNIT 1. AIR TRANSPORT

1. Aircraft and airports
2. Transportation modes and air mode
3. Agents involved in air transport
4. International conventions. The Chicago Convention
5. ICAO and other international organizations

2. DIDACTIC UNIT 2. AIRPORTS AND HELIPORTS

1. Parts of the airport (I)
2. Parts of the airport (II)
3. Heliports
4. Air navigation and airports
5. Obstacle limiting surfaces

3. DIDACTIC UNIT 3. ENVIRONMENTAL IMPACT, TERRITORIAL INTEGRATION AND AIRPORT PLANNING

1. Environmental impact of airports
2. Airports and climate change
3. Territorial integration
4. Airport planning (I)
5. Airport planning (II)

4. DIDACTIC UNIT 4. PORT OPERATIONS AND EVOLUTION OF THE SECTOR

1. Airport operations (I)
2. Airport operations (II)
3. Operational security (Safety)
4. Evolution of air traffic
5. Evolution and perspectives of the airline sector

MODULE 2. AIRPORT PLANNING

1. DIDACTIC UNIT 1. Planning levels

2. DIDACTIC UNIT 2. Master plan

3. DIDACTIC UNIT 3. ICAO Master Plan Structure

4. DIDACTIC UNIT 4. Data required for the master plan

5. DIDACTIC UNIT 5. Traffic forecast. Demand study

6. DIDACTIC UNIT 6. Airport layout

7. DIDACTIC UNIT 7. Planning of the movement area. Air Side

8. DIDACTIC UNIT 8. Planning of the terminal area, urbanization and accesses. Earth Side

9. DIDACTIC UNIT 9. Present and future capacity. Demand

10. DIDACTIC UNIT 10. Service levels. Airport Development Reference Manual

11. DIDACTIC UNIT 11. Planning tools

MODULE 3. THE ENVIRONMENT AND AIRPORTS

1. DIDACTIC UNIT 1. ENVIRONMENTAL EVALUATION OF AIRPORTS AND NOISE

1. Environmental effects in airports and air transport
2. Environmental evaluation of airports. planning, construction and operation
3. The noise. Classification and measurement
4. Aeronautical noise
5. Noise and annoyance. Health effects

2. DIDACTIC UNIT 2. NOISE POLLUTION AND ATMOSPHERIC POLLUTION

1. Noise pollution. ICAO's balanced approach
2. Best practices for reducing noise pollution (I)
3. Best practices for reducing noise pollution (II)
4. Atmospheric pollutants. Emission sources at airports
5. Air pollution. Regulations and quality evaluation

3. DIDACTIC UNIT 3. CLIMATE CHANGE AND ENVIRONMENTAL SUSTAINABILITY IN THE AIR SECTOR

1. Climate change, GHG and sustainable development
2. Environmental sustainability in the airline sector (I)
3. Environmental sustainability in the airline sector (II)
4. Measures against climate change in air transport (I)
5. Measures against climate change in air transport (II)

4. DIDACTIC UNIT 4. AIRPORT WASTE AND WILDLIFE CONTROL

1. Environmental management system
2. Waste and wastewater

3. Waste recycling
4. The danger of wildlife to aircraft. International regulations
5. Wildlife. Risk management and best practices

MODULE 4. ADVANCED PROJECT MANAGEMENT

1. DIDACTIC UNIT 1. SCOPE MANAGEMENT AND CONTRACTUAL MANAGEMENT

1. Session 1. Scope Management I
2. Session 2. Scope Management II
3. Session 3. Scope Management III
4. Session 4. Contract management I
5. Session 5. Contract management II

2. DIDACTIC UNIT 2. NEGOTIATION AND COST CONTROL

1. Session 1. Negotiation I
2. Session 2. Negotiation 2
3. Session 3. Negotiation 3
4. Session 4. Cost control

3. DIDACTIC UNIT 3. COST ESTIMATION AND PLANNING

1. Session 1. Cost estimation 1
2. Session 2. Cost estimation 2
3. Session 3. Cost estimation 3
4. Session 4. Planning 1
5. Session 5. Planning 2
6. Session 6. Planning 3

4. DIDACTIC UNIT 4. RISK MANAGEMENT

1. Session 1. Global environment
2. Session 2. Risk management 1
3. Session 3. Risk management 2
4. Session 4. Risk management 3
5. Session 5. Earned Value Method

MODULE 5. FINANCIAL PROJECT MANAGEMENT

1. DIDACTIC UNIT 1. FINANCIAL PROJECTIONS AND PROJECT FINANCING

1. time value of money
2. Investment evaluation methods
3. Preparation of financial projections.
4. Quality of financial projections and residual value.
5. Project financing sources.
6. Cost of capital and debt level of the project. Evaluation of projects with uncertain results.

2. DIDACTIC UNIT 2. PROJECT FINANCE

1. Introduction to the financing model
2. Project Finance.
3. Project risk analysis.

4. Project financing.
5. Entities involved in the financing of the project.
6. Ratios and management of project financing.

3. DIDACTIC UNIT 3. INTERNATIONAL PROJECTS

1. Development of financing in international projects.
2. Country Risk Management.
3. Sources of financing in international projects.

4. DIDACTIC UNIT 4. SERVICE PROJECTS

1. Financial management of service projects.
2. Identification of costs in service projects.
3. Allocation of costs to services.
4. Establishment of the service budget.
5. Economic monitoring and closure of the service.

MODULE 6. DESIGN. THE BASIC ELEMENTS OF AN AIRPORT AND TERMINAL

1. DIDACTIC UNIT 1. GENERALITIES OF AIR TRANSPORTATION ON GROUND

1. air transport
2. Ground air transportation needs
3. Motion Area Settings and Capacity
4. Navigation aids
5. Obstacles
6. Heliports

2. DIDACTIC UNIT 2. THE FLIGHT TRACK

1. Initial setup
2. Geometric features
3. Visual aids (I)
4. Visual aids (II)

3. DIDACTIC UNIT 3. TAXI ROADS, PLATFORMS AND MOVEMENT AREA

1. Taxiways. Geometric types and characteristics.
2. Taxiways. Visual aids.
3. 13. Platforms. Geometric types and characteristics
4. Platforms. visual aids
5. Firms and pavements in the movement area
6. Movement area drainage

4. DIDACTIC UNIT 4. PASSENGER TERMINAL BUILDING AND TERMINAL AREA

1. ETP. General settings
2. ETP. Functional design
3. The terminal area (I)
4. The terminal area (II)

MODULE 7. ROADS AND PAVEMENTS IN AIRPORTS. BASIC CONCEPTS

1. DIDACTIC UNIT 1. INTRODUCTION TO THE THEME OF SURFACE AND PAVEMENTS

1. Definition of pavements and pavements. Types of pavements
2. Main layers and materials that make up the pavements
3. Functional and structural properties. Auscultations
4. Influence of the pavement on the environment
5. Management systems

2. DIDACTIC UNIT 2. MATERIALS THAT MAKE UP THE SIGNS

1. Hydrocarbon binders. Bitumens and emulsions
2. Arid
3. granular layers
4. Layers treated with lime and cement to form esplanades
5. Cement-treated layers for base formation

3. DIDACTIC UNIT 3. BITUMINOUS MIXTURES AND CONCRETE

1. Bituminous mixtures. Classifications and characterization
2. Design, testing and characterization of bituminous mixtures
3. Manufacture of hot bituminous mixes
4. Installation of hot bituminous mixes
5. concrete

4. DIDACTIC UNIT 4. OTHER MATERIALS, AIRPORT DESIGN AND QUALITY CONTROL

1. Cold bituminous mixtures and surface treatments
2. Summary of innovative technologies in pavements
3. Use of some airport calculation tools
4. Quality control. Generic scheme and base materials
5. Quality control. Laboratory, test section and commissioning

MODULE 8. OPERATION AND EXPLOITATION OF AIRPORT INFRASTRUCTURES

1. DIDACTIC UNIT 1. OPERATIONS AND PROCESSES AT THE AIRPORT

1. International application regulations
2. Operations/processes in the terminal
3. Airside operations/processes
4. Support operations/processes.
5. Rescue and firefighting operations.

2. DIDACTIC UNIT 2. MANAGEMENT AND COORDINATION OF AIRPORT REMODULES

1. Air cargo operations/processes
2. Management of airport modules
3. Airport coordination and slot assignment
4. demand-capacity analysis
5. demand-capacity analysis (II)

3. DIDACTIC UNIT 3. KEY ELEMENTS OF AIRPORT MANAGEMENT

1. Airport security (security)
2. Operational safety
3. IATA/ACI indicators and service levels.
4. Commissioning of infrastructures. ORAT
5. Airport operation models

4. DIDACTIC UNIT 4. ECONOMIC AND ENVIRONMENTAL MANAGEMENT OF AIRPORTS

1. Capital expenditures (CAPEX) and operating expenses (OPEX) of the airport
2. Types of airport income. (regulated/non-regulated; aeronautical/non-aeronautical)
3. Airport commercial strategy
4. Air cargo.
5. Energy efficiency at airports.

MODULE 9. AIRPORT NODE, MULTIMODALITY

1. DIDACTIC UNIT 1. AIRPORT NODE. THE HUB, FLAG COMPANIES, LOW COST COMPANIES AND THEIR AFFECTIONS ON TRANSPORTATION

1. Airport networks
2. Network nodes. Airports
3. Network connectors. Airlines
4. The HUB&Spoke system
5. Air connectivity

2. DIDACTIC UNIT 2. MULTIMODALITY IN PASSENGER AND FREIGHT TRANSPORTATION

1. Airport access modes
2. Accessibility and modal distribution
3. Modal interchange at the airport
4. Train-plane relationship
5. Actors in train-aircraft intermodality

3. DIDACTIC UNIT 3. INTERCHANGES AND OTHER MULTIMODAL FACILITIES IN AIRPORTS

1. The Air Transport Chain and the ULD
2. Analysis of the airport freight node (I)
3. Analysis of the airport freight node (II)
4. Air cargo centers
5. Air cargo center case studies

4. DIDACTIC UNIT 4. AIRPORT CITY CONCEPT

1. Airport city
2. City-airport relationship. Activities
3. The impact of the airport city
4. Uses of space in the Airport City
5. Airport city case studies

MODULE 10. TFM. MASTER IN PROJECT, CONSTRUCTION AND EXPLOITATION OF AIRPORT INFRASTRUCTURES

Qualification

University Degree in Master of Lifelong Training in Project, Construction and Operation of Airport Infrastructures issued by the Antonio de Nebrija University with 60 ECTS University Credits. Teachings not leading to obtaining an official qualification

Objectives

- • Integrate a global and multidisciplinary vision of the airport field, understanding the interconnection of its technical and business facets. • Design planning and development strategies for airport infrastructure projects, considering technical, economic and environmental factors. • Effectively manage airport facility construction and improvement projects, from the initial phase to delivery. • Evaluate the financial viability of investments in the aviation sector, applying advanced economic management models. • Lead the implementation of airport operation and exploitation plans, optimizing the operation and safety of the facilities. • Make strategic decisions that integrate the airport's functionality as a multimodal node, improving connectivity and transportation flow. • Promote interprofessional collaboration, understanding the interaction between engineers, architects, financiers and other specialists in the airport environment. • Optimize environmental management in the airport context, applying sustainability criteria in design and operation.

What does it prepare you for?

This program prepares you to lead the transformation and development of airport infrastructure, providing you with an advanced strategic and technical vision. You will design planning strategies for these infrastructures, from the conception of new projects to the expansion of terminals, considering environmental impact and urban integration. You will manage complex projects, applying advanced methodologies and a solid financial understanding to ensure their viability and success. You will evaluate and optimize the operations and exploitation of the facilities, guaranteeing operability and safety at all times. You will integrate multimodality into the transportation node, anticipating the future needs of the sector and making informed decisions about the design of pavements and road surfaces, ensuring the resilience and adaptability of the facilities.

Who is it addressed to?

Aimed at professionals in the airport sector, including engineers, architects and financiers, who already work in areas of design, construction, operation or management of infrastructure. It is ideal for those seeking a global and multidisciplinary vision that allows them to understand the complexity of projects in this area, from strategic planning to operational exploitation. This master's degree is designed for profiles oriented towards innovation and continuous improvement, with a desire to develop advanced capabilities in project management, design and operations, optimizing their performance and specialization in the aviation sector. It seeks to encourage those who wish to lead the evolution of air transport infrastructure.

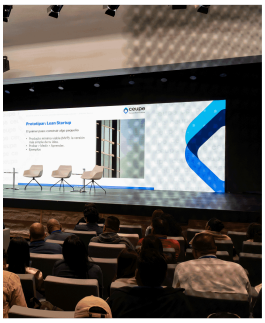
Official Character

This training is not included within the scope of official regulated training (Early Childhood Education, Primary Education, Secondary Education, Official Vocational Training FP, Baccalaureate, University Degree, Master University Officer and Doctorate). It is therefore a complementary and/or specialization training, aimed at the acquisition of certain competencies, skills or aptitudes of a professional nature, which can be assessed as merit in job boards and/or competitive examinations, always within the section of Complementary Training and/or Continuous Training. It is always essential to review the specific grading requirements of the specific public job boards to which we wish to apply.

Professional Outings

- Specialization in the airport infrastructure sector positions you for senior management and strategic consulting roles. You will be able to assume the Airport Operations Management, optimizing the operation and safety of the facilities, or the Airport Business Management, promoting profitability and commercial development. You will specialize as an Aviation Infrastructure Planning Manager, integrating growth and sustainability, or as a Senior Airport Infrastructure Designer, defining key elements of the airfield and terminals. You can also work as an Air Transportation Project Consultant, advising on the complete life cycle of facilities, or as a Senior Engineer in various disciplines, providing a global and advanced technical vision to each initiative in the field of transportation infrastructure engineering. Additionally, you will be able to lead teams as an Airport Construction Project Director or as an Aviation Regulation and Standards Specialist.







Live Madrid

Live the International Week

As an additional complement to your training, you can be part of the SIM: Week International in Madrid. A unique meeting that brings together students from all over the world. For seven days you can live an academic and cultural experience in the heart of Europe, culminating with the graduation ceremony in Madrid.

- Conferences and workshops with international experts
- Visits to companies and reference organizations
- Networking with students from different countries
- Cultural activities and discovery of Madrid
- graduation ceremony

Structural

Structuralia is a leading educational institution in postgraduate and highly specialized online training, focused on the fields of engineering, architecture, construction, energy, technology and digital transformation.

Founded in 2001 with a strong industrial DNA, the result of collaboration between large companies in the sector and the Universitat Politècnica de Catalunya (UPC), for more than 25 years we have accompanied technical professionals in their academic and professional development through practical, flexible training aligned with the reality of the labor market.

Our training proposal connects advanced technical knowledge, real employability and international projection, acting as key support in the professional evolution of those seeking to specialize, grow professionally and generate impact in their sector, with a firm commitment to the democratization of access to technical excellence.



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Experience in the training sector



5 stars

QS ranking in online education

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EDUCA LXP is more than a methodology, it is a completely educational experience personalized thanks to all the possibilities offered by artificial intelligence. Now the content adapts to you, your needs and preferences, while offering you access to updated and practical content that really makes a difference in the labor market.

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Discover PHIA, your learning assistant that will help you every step of the way.

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Human empathy and academic guidance from a specialized teaching team.

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Didactic approach oriented to work by competencies, which favors practical and meaningful learning.

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You will have access to more than 400 key courses (soft skills, languages, competencies digital, etc.) and other surprises. Sign up and see how MyLXP improves your learning.

Meet PHIA, your personalized learning assistant

Use all the possibilities of artificial intelligence to get the most out of it match to your training

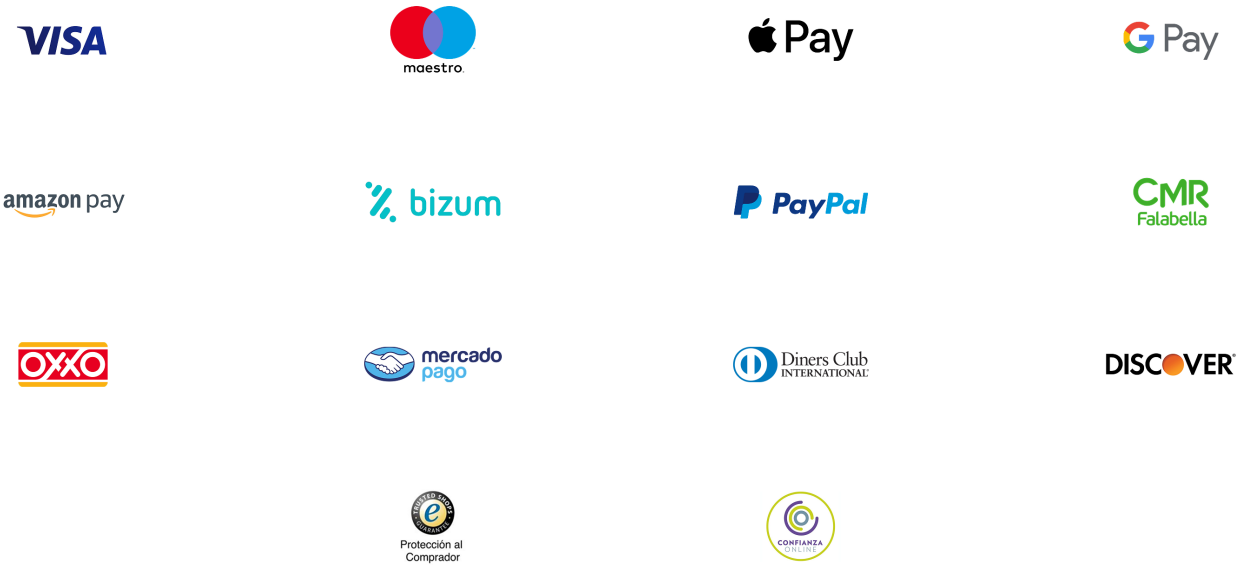
EDUCA EDTECH Group leads the digital revolution in education, promoting the continuous learning and technological transformation. The group is made up of recognized training institutions and its mission is to democratize access to education, promote the transfer of knowledge, technological development and research.

With the experience accumulated over more than 20 years, we have perfected our learning platform EDUCA LXP (Learning Experience Platform), the basis of our educational methodology, which provides students with online training practical and meaningful.



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