

# Professional Master's Degree Port Management and Intermodal Transportation





## Professional Master's Degree Port Management and Intermodal Transportation

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/us/engineering/professional-masters-degree/port-management-intermodal-transportation](http://www.techtitute.com/us/engineering/professional-masters-degree/port-management-intermodal-transportation)

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# 01

# Introduction

Logistics has become a key pillar in the success of trade and the global economic system. Therefore, in this scenario, seaports have acquired a fundamental role in supply chains. In this way, the multimodal transport of goods, together with maritime-port management and operations, are essential for engineers wishing to progress in in this growing sector. In this line, this 100% online program is born, which leads students to achieve a high level of learning in port management from a teaching team with extensive experience in this field. In addition to this, high quality multimedia didactic content and a syllabus available from any electronic device with internet connection.



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*Thanks to this Professional Master's Degree you will achieve an unique and up-to-date specialization in Port Management and Intermodal Transport”*

Globalization has highlighted the importance of having an efficient commercial port logistics, capable of solving different situations (economic, health, traffic, personnel), while its management requires the mastery of the latest technologies in these areas and operability.

Given this reality, the maritime sector is on the rise and requires professionals with a highly specialized, up-to-date vision on Port Management and Intermodal Transport. In this scenario, this 100% online university program of 1,500 teaching hours, created and developed by an excellent team of professionals with more than two decades of experience in this field, is born.

It is an advanced program, which presents a theoretical-practical approach and numerous didactic materials such as multimedia pills, interactive diagrams, essential readings and case study simulations. All this provides dynamism and effective learning about the latest trends in management models, the optimization of the operation of intermodal transport infrastructures, or the existing international regulations and standards.

In addition, during the course of this program, graduates will obtain new knowledge in a much more agile way, thanks to the *Relearning* system. A method based on the reiteration of content, which will allow graduates to consolidate the concepts in a simple way and without dedicating long hours to study and memorization.

Undoubtedly, an unique opportunity for professional growth under the guidance of the best experts and with a flexible pedagogical methodology. Students only need a digital device with internet connection (Tablet, cell phone or computer) to view the content hosted on the virtual platform.

This **Professional Master's Degree in Port Management and Intermodal Transportation** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The development of case studies presented by experts in Port Management and Intermodal Transportation
- ◆ The graphic, schematic and eminently practical content of the system provides cutting-edge and practical information on those 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



*Study at the best rated university in the world by its students according to the Trustpilot platform (4.9/5)"*

“*Enroll now in a university degree that fits your professional aspirations in the port sector*”

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

*Learn more about the characteristics of commercial port management through the best didactic materials.*

*Delve into maritime-port logistics and international transport chains from the comfort of your home.*



# 02 Objectives

The purpose of this 12-month Professional Master's Degree is to provide students with advanced learning about the logistics sector and multimodal transport of goods, as well as maritime-port management and operations. To this end, graduates will have access to a syllabus prepared by professionals in the sector with an extensive and outstanding track record, which will favor the acquisition of key knowledge to successfully operate in the international port sector.







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*You will reach your goals in a much easier way thanks to the numerous didactic and pedagogical resources and the theoretical-practical approach of this program”*



## General Objectives

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- ◆ Conceptualize logistics and place it in the current economic environment
- ◆ Conceptually define the processes that compose it and give rise to the different types of logistics
- ◆ Understand what each of these processes consists of and the purpose for which they were conceived
- ◆ Analyze the general composition of today's intermodal chains
- ◆ Update the student's knowledge in the field of multimodal transport
- ◆ Substantiate the importance of maritime transport in globalization
- ◆ Analyze multimodality and its role in the logistics chain
- ◆ Examine the main maritime traffics and transport vessels
- ◆ Delve into the main maritime traffics
- ◆ Specify the international legislation in maritime transport
- ◆ Delve into the traditional characteristics and functions of ports and their historical evolution
- ◆ Delve into the evolution of the logistics function in ports
- ◆ Examine the alternative of port infrastructure specialization as a way of adapting to the demands of logistics chains
- ◆ Analyze the latest innovation trends
- ◆ Define the different Governance Models of Ports
- ◆ Examine the evolution of port governance in relation to the level of development of the countries
- ◆ Provide a context for the governance structure of a typical port
- ◆ Define a future port model in a context of in-depth and global transformation
- ◆ Analyze with maximum objectivity these aspirations, from a technical point of view
- ◆ Identify the importance of consensus, communication and transparency in the process of formulating the strategy of a port system that has important repercussions on society as a whole, both economically and socially



*A program that will allow you to incorporate the latest technologies used for the provision of port services”*



## Specific Objectives

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### Module 1. Logistics and logistics operators

- ◆ Identify the different types of logistics and the function(s) they perform in relation to the final customer
- ◆ Theoretically develop the different logistic processes and determine their practical purpose
- ◆ Analyze the figure of the logistics operator, from a general point of view, and analyze the different typologies of operators that design and execute logistics processes
- ◆ Determine each of the services offered by logistics operators depending on their typology

### Module 2. Multimodal transport, intermodality and logistics platforms

- ◆ Identify each of the actors involved in the intermodal chain and define their roles
- ◆ Develop the concept, evolution and activities related to intermodal transport
- ◆ Establish the economic and operational impact of multimodality within the supply chain
- ◆ Generate logistics optimization scenarios based on the principles of intermodality

### Module 3. Maritime transportation

- ◆ Determine the cost of maritime transport
- ◆ Specify the different contracts for the operation of the vessel
- ◆ Analyze the freight market
- ◆ Examine emissions and their regulation

#### **Module 4. Ports and port terminals**

- ♦ Characterize the last generation ports
- ♦ Identify the various factors that can lead to port specialization and to present the most characteristic typologies of ports and terminals
- ♦ Analyze the most widespread mechanical means for handling goods
- ♦ Present the latest technologies being incorporated by the most advanced ports today

#### **Module 5. Port Governance Model**

- ♦ Characterizing the types of port governance
- ♦ Analyze the public-private relationship between the actors involved in the port space according to the type of governance
- ♦ Define a typical structure in the land-lord model

#### **Module 6. Strategic Port Planning**

- ♦ Analyze the economic, technical, social and environmental dimensions of ports
- ♦ Determine the different strategic performance criteria of a port system (efficiency, connectivity, digitalization and sustainability)
- ♦ Examine the different strategic lines associated with the performance criteria
- ♦ Establish the general port management objectives associated with each of the strategic lines of action

#### **Module 7. Port business plan and HR management**

- ♦ Analyze the management of a port and its short, medium and long term planning
- ♦ Define in a coordinated way all the aspects that affect the management of a port, infrastructures, investments, traffics, economic-financial, HR, environment
- ♦ Define and analyze the overall objectives of port management
- ♦ Specify HR planning based on management by competences, in accordance with the global strategy and its implementation at port level

#### **Module 8. Maritime-port logistics and port services**

- ♦ Identify the functions and role of each of the port agents, as well as the corresponding communication flows
- ♦ Evaluate the operational response of ports and their terminals, and understand their management in order to their organization in order to be able to establish appropriate port operation procedures
- ♦ Identify the most relevant necessary aspects of the port services and commercial activities to the ship for the correct operation of the port, as well as to define the necessary means for their provision or their possible revenue systems
- ♦ Propose the correct identification of maritime signaling and its basic establishment

#### **Module 9. Infrastructure planning and development and environmental sustainability**

- ♦ Planning port areas in accordance with global climate reality
- ♦ Concretize the introduction of renewable energy projects in ports
- ♦ Environmental assessment of investment projects
- ♦ Calculate the profitability of port infrastructure projects



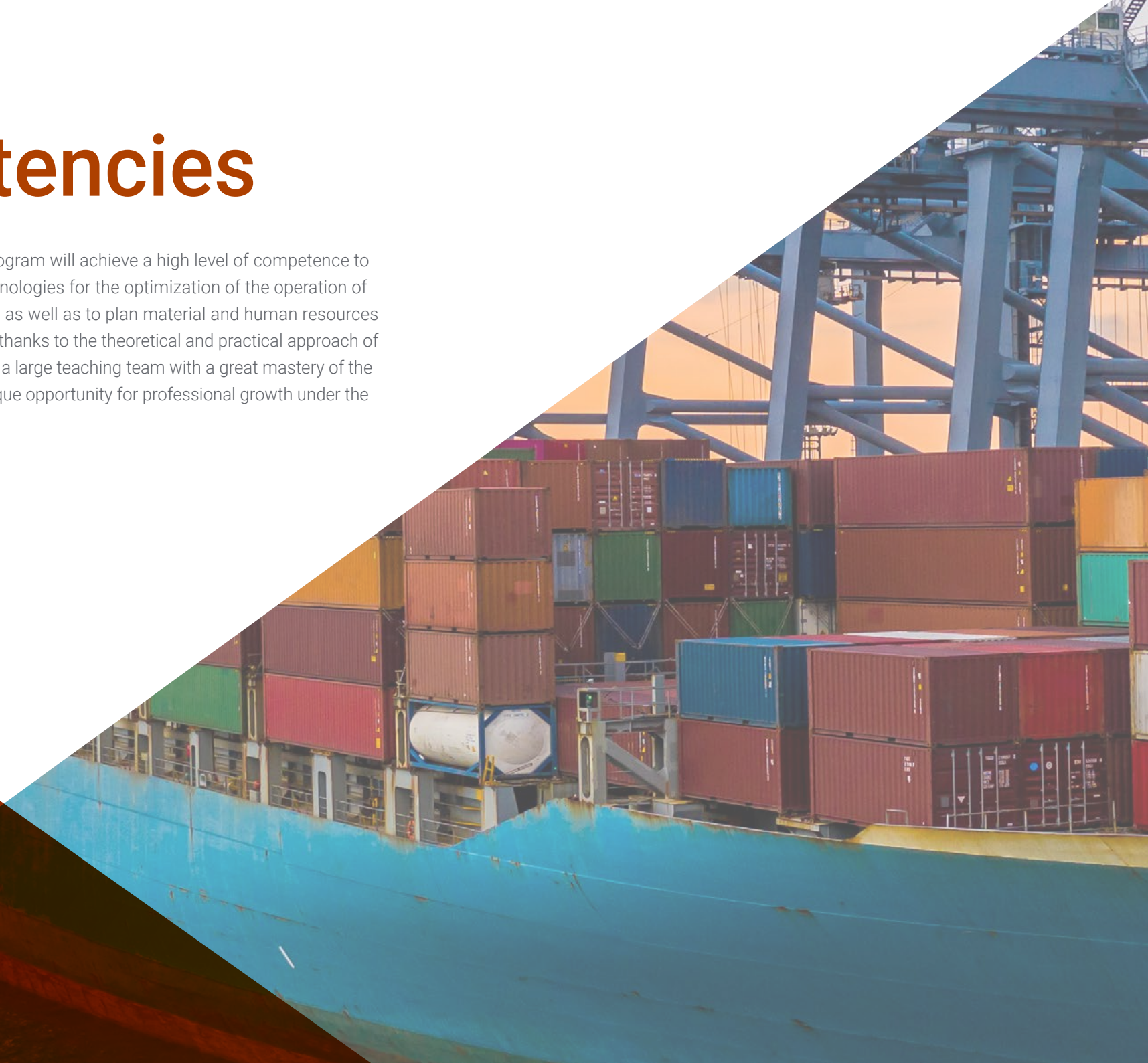
### Module 10. Port security and safety

- ◆ Identify potential threats to port infrastructure, analyzing specific vulnerabilities and proposing concrete cybersecurity solutions to prevent attacks and ensure the integrity of systems
- ◆ Assess the effectiveness of physical protection measures at a specific port by examining the existing security design, identifying areas for improvement and developing a plan to strengthen the security of the facility
- ◆ Present a detailed risk assessment report for a selected port, compiling relevant data, demonstrating a thorough analysis of threats, and providing recommendations for analysis of threats and providing informed risk mitigation
- ◆ Propose and develop a mock port crisis exercise, establishing a realistic scenario, coordinating the response of a security team and critically evaluate performance to improve emergency preparedness

# 03

# Competencies

Students who take this university program will achieve a high level of competence to incorporate the most advanced technologies for the optimization of the operation of intermodal transport infrastructures, as well as to plan material and human resources in this sector. All this will be possible thanks to the theoretical and practical approach of this educational proposal, created by a large teaching team with a great mastery of the international port ecosystem. An unique opportunity for professional growth under the guidance of real experts.



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*The case studies will help you to make successful decisions in your relations with the different agents in the sector”*



## General Skills

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- ◆ Generate a strategy for a port system that responds to the aspirations of society as a whole, i.e. the general interest of the public
- ◆ Develop the capacity to respond to crises and emergencies in the port environment, designing effective action plans, coordinating communication with stakeholders and conducting drills to ensure an efficient response in adverse situations
- ◆ Develop in detail the operation of each of the port services with public service obligations in the ports, as well as the main commercial activities to the ship
- ◆ Analyze the specific threats and vulnerabilities of port environments, identifying possible risk scenarios and assessing their potential impact on port operations
- ◆ Planning and coordinating human resources in a port entity







## Specific Skills

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- ◆ Establish comprehensive port security strategies, including physical, technological and management measures, in order to mitigate risks and guarantee the protection of port infrastructure and activities
- ◆ Apply international regulations and standards related to port security, ensuring compliance with current regulations and promoting world-class security practices
- ◆ Realize the strategy through a port's business plan based on the strategic model of a port system
- ◆ Incorporate the latest innovative trends into management and operation as highly transformative and differentiating elements



*Obtain a global, transversal and practical vision of planning in maritime companies”*

# 04

# Course Management

TECH adheres to a philosophy based on the education of quality. To fulfill this educational line, the team of this institution has selected teachers with extensive experience in the port sector and with a deep knowledge in Port Management and Intermodal Transport. Their extensive background is evident throughout the syllabus, which will raise the theoretical and practical knowledge of students who take this Professional Master's Degree 100% online.





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*Become an expert in Port Management with the help of the best professionals in this sector with extensive experience in international companies”*

## Address



### Mr. López Rodríguez, Armando

- ♦ Head of Technical Advisory Area in the Office of the President of Ports of the State
- ♦ Head of Strategic Planning Area at Ports of the State
- ♦ Project Manager at Ports of the State
- ♦ Head of the Resources and Information and Communications Technology Area at Ports of the State
- ♦ Head of Development Ports of the State
- ♦ Head of Corporate Relations Area at Ports of the State
- ♦ Head of Strategic Planning Area at Ports of the State
- ♦ Head of the Strategic Planning Area at Ports of the State
- ♦ AENOR Associate Professor
- ♦ UBT Associate Professor Lab
- ♦ Telecommunications Engineer from Universidad Politécnica de Madrid
- ♦ Degree in History from the National University of Distance Education (UNED)
- ♦ PhD's Degree in History from the National University of Distance Education (UNED)
- ♦ Master's Degree in Advanced Methods and Techniques of Historical, Artistic and Geographic Research from the National University of Distance Education (UNED)
- ♦ Management Development Program (PDD) from the IESE of the University of Navarra



## Professors

### Ms. García, Ana María

- ◆ Chief Advisor to the President of ESPO
- ◆ Head of Development Area of HR at Ports of the State
- ◆ Business Development Manager for Transport and Industry at Indra
- ◆ Head of the Technical Department of Sales and Marketing at Ports of the State
- ◆ Teacher of the Master in Port Management and Planning and Intermodality
- ◆ Graduate in Psychology, specializing in Work and Organizational Psychology, from the Universidad Pontificia de Comillas (ICAI-ICADE) and Universidad Complutense of Madrid
- ◆ Master's Degree in Business Administration, IESE, from the University of Navarra
- ◆ Leadership Program in Public Management, IESE, by the University of Navarra
- ◆ Member of the Port Governance Committee and member of the Board of Directors of the General State Administration in the Port Authorities of Motril, Vigo, Gijón, A Coruña, Alicante, Tenerife and Cartagena

### Mr. Muriente Núñez, Carlos

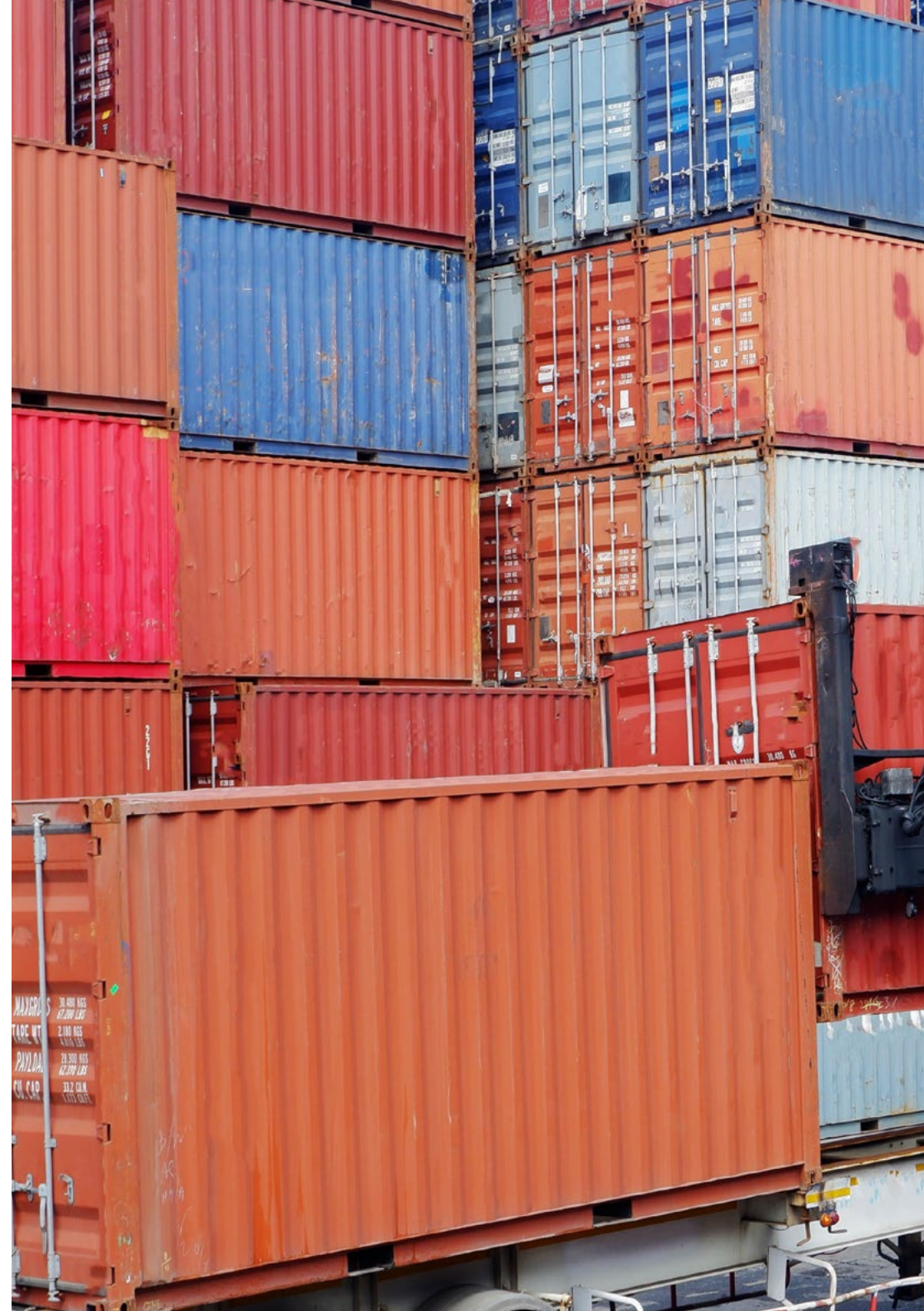
- ◆ Naval and Ocean Engineer, ALTEN SPAIN
- ◆ Degree in Naval Architecture, Polytechnic University of Madrid
- ◆ Master's Degree in Naval and Ocean Engineering, Polytechnic University of Madrid
- ◆ Master's Degree in Renewable Energies by TECH, Technological Institute
- ◆ Course on Future in Materials in Industry, Construction and Technology, Polytechnic University of Madrid

**Mr. PASTRIÁN GARCÍA, JOSÉ MIGUEL**

- ◆ Expert in Human Resources Management in the Port Sector
- ◆ Human Resources Consultant
- ◆ Direction and coordination of the Master's Degree in Port Management of Ports of the State
- ◆ Lecturer at INAP, IIR and EOI
- ◆ Deputy Director of Port Studies
- ◆ Deputy Director of Business Plans
- ◆ Deputy Director of Human Resources
- ◆ Head of HR Organization and Planning Area
- ◆ Degree in Economics and Business Administration from the Autonomous University of Madrid
- ◆ Master's Degree in Human Resources Management from Escuela de Negocios
- ◆ Executive in Port Sector Management from IESE Business School
- ◆ Member of the Board of Directors of the Port Authorities of Castellón, Tarragona, A Coruña, Almería and Pasaje

**Dr. LÓPEZ ANSORENA, CÉSAR**

- ◆ Expert in Port Management
- ◆ Port Facility Security Officer recognized by the competent authority in maritime security matters
- ◆ Director of Private Security recognized by the Ministry of the Interior
- ◆ PhD in Civil Engineering Systems (Territory and Environment program) Cum Laude from the Polytechnic University of Madrid
- ◆ Civil Engineer from the Polytechnic University of Madrid
- ◆ Professional Master in Intelligence Analysis





#### **D. Martín Gasull, Emilio**

- ◆ Manager at Refrigerated Transport Division at Zanotti Appliance
- ◆ General Manager at HI Logistics Group
- ◆ Regional Director Levante at ERTRANSIT
- ◆ Branch Manager Levante at Agencia Fernández de Sola
- ◆ Intermodal Transport Division Manager at Kuehne & Nagel Spain
- ◆ Maritime Division Manager Spain and Portugal at DHL Global Forwarding
- ◆ Director Intermodal Transport Division at DHL Global Forwarding
- ◆ Regional Technical Director at JF Hillebrand Spain
- ◆ Maritime and Inland Logistics Director at Evergreen Shipping Spain
- ◆ Lecturer in the Master's Degree in Port Management and Intermodal Transport. Degree in Law from the University of Valencia Academic Background Commissioner of Average
- ◆ Commissioner of Average by the College of Merchant Marine Officers

#### **Mr. Martín Ramos, Francisco Javier**

- ◆ Deputy Assistant Director of Operation and Navigation Aids at Ports of the State
- ◆ Head of Maritime Works Projects Division at Grupo Dragados y Construcciones
- ◆ Lecturer in Master in Port Management and Planning and Intermodality in Ports of the State, Polytechnic University of Madrid, University of Oviedo, University of Cadiz and University of A Coruña
- ◆ Civil Engineer with specialization in Transport from the Polytechnic University
- ◆ Master's Degree in European Union from the Polytechnic University of Madrid
- ◆ Master's Degree in Port Management and Intermodal Transport by ICADE at Comilla Pontifical University

05

# Structure and Content

The syllabus of this university degree has been designed to provide the most advanced knowledge on the planning, management and operation of port infrastructures in 1,500 teaching hours. A theoretical framework that will be enriched by the numerous multimedia teaching materials, specialized readings and case studies, hosted in the virtual library, accessible 24 hours a day, 7 days a week.







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*24 hours a day, 7 days a week, from any cell phone, tablet or computer with an internet connection”*

## Module 1. Logistics and logistics operators

- 1.1. Logistics
  - 1.1.1. Logistics, role in the current economic flow
  - 1.1.2. Logistics and Supply Chain. Differences
  - 1.1.3. In-Company Logistics. Importance
- 1.2. Logistics Areas and Types
  - 1.2.1. Logistics Areas
  - 1.2.2. Internal vs. external Logistics
  - 1.2.3. Logistics fundamentals
- 1.3. Logistics Operations
  - 1.3.1. Operations of logistics companies
  - 1.3.2. The logistics process and its elements
  - 1.3.3. Stages of the logistics chain
  - 1.3.4. Problems arising in logistics environments
- 1.4. Logistics adapted to current market needs
  - 1.4.1. Logistics in e-commerce. Distribution Logistics
  - 1.4.2. Reverse Logistics
  - 1.4.3. Logistics Indicators
  - 1.4.4. Current Logistics
- 1.5. New Technologies Applied to Logistics
  - 1.5.1. Robotics and automated warehouses
  - 1.5.2. Process Automation
  - 1.5.3. Information Systems Applied to Logistics
  - 1.5.4. Blockchain and Machine Learning
- 1.6. Logistics of the future
  - 1.6.1. Challenges Faced by Logistics
  - 1.6.2. Green Logistics
  - 1.6.3. New trends in the field of Logistics
- 1.7. Logistics Operators
  - 1.7.1. Global Logistics
  - 1.7.2. Role of the Logistics Operators
  - 1.7.3. Evolution of Logistics Operators up to the Present Day
  - 1.7.4. Logistics operator Requirements

- 1.8. Logistics Operators and the Outsourcing contract
  - 1.8.1. The Outsourcing contract Clauses, SLAS
  - 1.8.2. Services provided by logistics operators
  - 1.8.3. Advantages offered by logistics operators
- 1.9. Logistics Operators Functions and Types
  - 1.9.1. Functions of logistics operators
  - 1.9.2. The Party Logistics (PL). Uses
  - 1.9.3. Types of logistics operators Services and Infrastructures
  - 1.9.4. The Future of PL. From 6PL to 10 PL
- 1.10. Freight Forwarder Vs Logistics Operator
  - 1.10.1. Freight forwarder vs. logistics operator. Differences and similarities
  - 1.10.2. Evolution of the Freight Forwarder into a Logistics Operator
  - 1.10.3. The freight forwarder and the PLS system. Bringing services closer together

## Module 2. Multimodal transport, intermodality and logistics platforms

- 2.1. The Warehouse
  - 2.1.1. Phases of the Logistics activity Role of Warehouse in the Supply Chain
  - 2.1.2. Warehouse activities
  - 2.1.3. Types of Warehouse
  - 2.1.4. Storage alternatives
- 2.2. Logistics Platforms
  - 2.2.1. Warehouse vs Logistics Platforms Differentiating Elements
  - 2.2.2. Types of logistics Platform
  - 2.2.3. Operation of an Logistics Platform Infrastructure, space organization of space and human and mechanical resources
- 2.3. Logistics platforms as an integrating element of the intermodal chain
  - 2.3.1. Types of logistics Platform
  - 2.3.2. Location as a differentiating element of logistics platforms. Warehouses HUB
  - 2.3.3. Micro logistics platforms. Urban SLPs

- 2.4. Inland transportation of goods by road
  - 2.4.1. International land freight transport. Primary infrastructures and international legal framework
  - 2.4.2. Types of road freight transport
  - 2.4.3. Key elements for the management of road transport companies
  - 2.4.4. Digital transformation of road transport companies. Management Systems
- 2.5. Rail freight transport
  - 2.5.1. Rail transport Situation of international freight rail networks international freight rail networks
  - 2.5.2. Railway operators
  - 2.5.3. Types of Rail transport
- 2.6. Maritime freight transport
  - 2.6.1. International regulatory agencies
  - 2.6.2. Relevant legislation
  - 2.6.3. Long distance maritime transportation
  - 2.6.4. Short sea shipping and freeways of the sea
  - 2.6.5. Freight transport by inland waterways
  - 2.6.6. Maritime transportation Key Aspects
- 2.7. Air freight transport
  - 2.7.1. International regulatory agencies
  - 2.7.2. International Legal Framework
  - 2.7.3. Essential infrastructures
  - 2.7.4. Airplanes Typology
  - 2.7.5. Air transport Key Aspects
- 2.8. Capillary distribution of goods
  - 2.8.1. Capillary distribution, the final link in the logistics chain
  - 2.8.2. Capillary distribution operation
  - 2.8.3. Last Mile Logistics. Operation
- 2.9. Multimodal and combined transportation
  - 2.9.1. Multimodal and combined transportation
  - 2.9.2. Multimodality Vs Intermodality
  - 2.9.3. Role of multimodal transport operators (MTOs)

- 2.10. Intermodal transport
  - 2.10.1. Intermodal transport
  - 2.10.2. Types of Intermodality
  - 2.10.3. Role of Warehouse in intermodality. The crossdocking
  - 2.10.4. The operator in the intermodal transport
  - 2.10.5. Intermodal Transportation Systems
  - 2.10.6. Intermodal transport Advantages, problems and Challenges

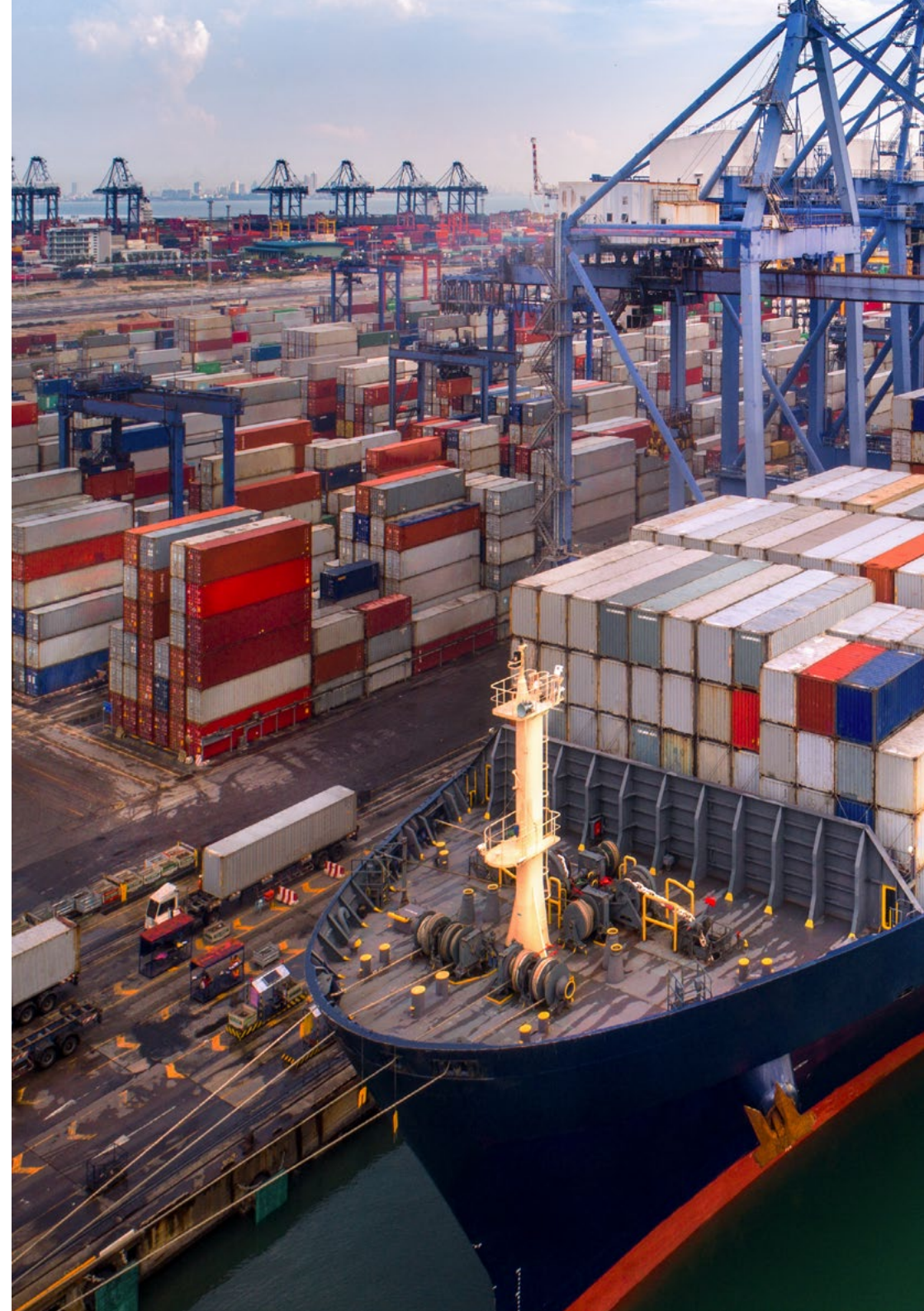
### Module 3. Maritime transportation

- 3.1. Maritime transportation and International Trade
  - 3.1.1. Maritime transportation
  - 3.1.2. International Trade
  - 3.1.3. Maritime traffics
  - 3.1.4. TRAMP traffic and regular liners
- 3.2. Types of Ships in Maritime Transportation
  - 3.2.1. Types of Ships in Maritime Transportation according to their cargo
  - 3.2.2. Evolution of the ships in maritime transport
  - 3.2.3. Container
    - 3.2.3.1. Types of maritime containers
- 3.3. Maritime Transportation Market
  - 3.3.1. Maritime Transportation Market
  - 3.3.2. World fleet
  - 3.3.3. World Maritime Transportation Requirement
- 3.4. Maritime Transportation Costs
  - 3.4.1. Cost distribution
  - 3.4.2. Fixed Costs
  - 3.4.3. Variable Costs
  - 3.4.4. Loading/unloading costs
  - 3.4.5. Factors Influencing Costs
- 3.5. Maritime traffics
  - 3.5.1. Petroleum traffic
  - 3.5.2. Bulk solids traffic
  - 3.5.3. General cargo

- 3.6. Maritime Law
  - 3.6.1. Maritime privileges
  - 3.6.2. Ship mortgage
  - 3.6.3. International maritime transport regulations and conventions
- 3.7. Contracts for the Operation of the Ship
  - 3.7.1. Economic operation of the ship
  - 3.7.2. Bareboat Lease
  - 3.7.3. Chartering
  - 3.7.4. Passenger contract
- 3.8. Freight Market
  - 3.8.1. Freight Market Evolution
  - 3.8.2. Journalism
  - 3.8.3. Supply/ Demand
- 3.9. Accident and Marine Insurance
  - 3.9.1. Accidents in Navigation
  - 3.9.2. Types of Breakdowns
  - 3.9.3. Marine Insurance
- 3.10. Emissions International Regulation
  - 3.10.1. Maritime transportation emissions
  - 3.10.2. International Regulation
  - 3.10.3. Form of Fulfillment of Regulations
  - 3.10.4. Reduction of CO2 emissions

#### Module 4. Ports and port terminals

- 4.1. The Commercial Port. Functions
  - 4.1.1. Functions of a commercial port
  - 4.1.2. Ports and the Supply Chain
  - 4.1.3. Ports in the 21st Century
- 4.2. Port Models according to the flow of goods
  - 4.2.1. Ports as essential nodes in logistics chains
  - 4.2.2. Port typology according to the flow of goods
    - 4.2.2.1. Import/export Ports
    - 4.2.2.2. Ports Hub
  - 4.2.3. Adaptation to changing trends in the flow of goods





- 4.3. Port Terminals
  - 4.3.1. Port Specialization
  - 4.3.2. Layout and Zones of a Port Terminal
  - 4.3.3. Types of port terminals
- 4.4. Cranes and mechanical means
  - 4.4.1. Cranes for loading and unloading the ship
  - 4.4.2. Means for transporting cargo in a terminal
  - 4.4.3. Means for cargo handling in the yard
- 4.5. Multi-purpose terminals and container terminals
  - 4.5.1. Multipurpose or general purpose terminals
  - 4.5.2. Container terminals
  - 4.5.3. Loading and unloading flow in a container terminal
- 4.6. Bulk Terminal
  - 4.6.1. Bulk solids Terminal
  - 4.6.2. Bulk Liquids Terminal
  - 4.6.3. Special installations
- 4.7. Roll-on/roll-off terminals
  - 4.7.1. Roll-on/roll-off terminals
  - 4.7.2. Containers on wheeled platforms
  - 4.7.3. Automotive
- 4.8. Passenger terminals and other types of specialized terminals
  - 4.8.1. Passenger terminals
  - 4.8.2. Sports marinas
  - 4.8.3. Fishing terminals
- 4.9. Intelligent Ports and Automation
  - 4.9.1. Smart Ports
  - 4.9.2. Digitalization
  - 4.9.3. Automation of operations
- 4.10. Latest trends in port innovation
  - 4.10.1. Artificial Intelligence and its application to ports
  - 4.10.2. Simulation Based Training (SBT)
  - 4.10.3. Digital port twins

## Module 5. Port Governance Model

- 5.1. Port Governance
  - 5.1.1. Port Governance
  - 5.1.2. Port Governance Evolution
  - 5.1.3. Port Governance and economic development
- 5.2. Port Governance Models
  - 5.2.1. Public and private ports
  - 5.2.2. The tool ports
  - 5.2.3. The Landlord port model
- 5.3. Port Governance Trends
  - 5.3.1. Stabilization of the governance model: towards a nuanced landlord
  - 5.3.2. Vertical and horizontal integration
  - 5.3.3. Competition control and supervision activities
- 5.4. The landlord model and the public domain
  - 5.4.1. The management of the port public domain
  - 5.4.2. Revenue from fees
  - 5.4.3. Revenue from tariffs
- 5.5. Examples of port governance models
  - 5.5.1. Private ports in the United Kingdom
  - 5.5.2. The landlord model in continental Europe
  - 5.5.3. Hispanic America. Models in transition
- 5.6. Port Services regime
  - 5.6.1. Nature of the service (public, private). Requirements for the provision of the service
  - 5.6.2. Administrative link /contract, license)
  - 5.6.3. Form or requirements for access to the provision of the service. Concurrence. Limit on the Number of providers
- 5.7. Coordination of port systems at the country level
  - 5.7.1. Centralized Systems
  - 5.7.2. Decentralized Systems
  - 5.7.3. Mixed Systems

- 5.8. Intraport governance
  - 5.8.1. The Management of a Port
  - 5.8.2. Sample organization chart and functional areas
  - 5.8.3. Port planning and operation areas
- 5.9. Port administration
  - 5.9.1. Economic and financial management
  - 5.9.2. Human resources management
  - 5.9.3. Industrial safety and occupational risk prevention
- 5.10. Relations between the port and its environment
  - 5.10.1. Port-City interrelationships
  - 5.10.2. The urban-port network. Urban planning considerations
  - 5.10.3. Institutional activities and collaboration with the environment

## Module 6. Strategic Port Planning

- 6.1. Port System
  - 6.1.1. Port Authorities Coordination
  - 6.1.2. Economic Outlooks
  - 6.1.3. Environmental Outlooks
  - 6.1.4. Social Perspective
  - 6.1.5. Criteria for action
- 6.2. Economically profitable ports
  - 6.2.1. Financing
  - 6.2.2. Budgeting
  - 6.2.3. Prices associated with the port reality
  - 6.2.4. Redistribution of resources between ports
- 6.3. Port space management
  - 6.3.1. Port space performance
  - 6.3.2. Port space at the service of the general interest
  - 6.3.3. Port space Digitalization
- 6.4. Infrastructures. Demand-oriented investments
  - 6.4.1. Leveraging infrastructure investments
  - 6.4.2. Economically and socially profitable infrastructures
  - 6.4.3. Infrastructure connectivity
  - 6.4.4. Respect for the environment

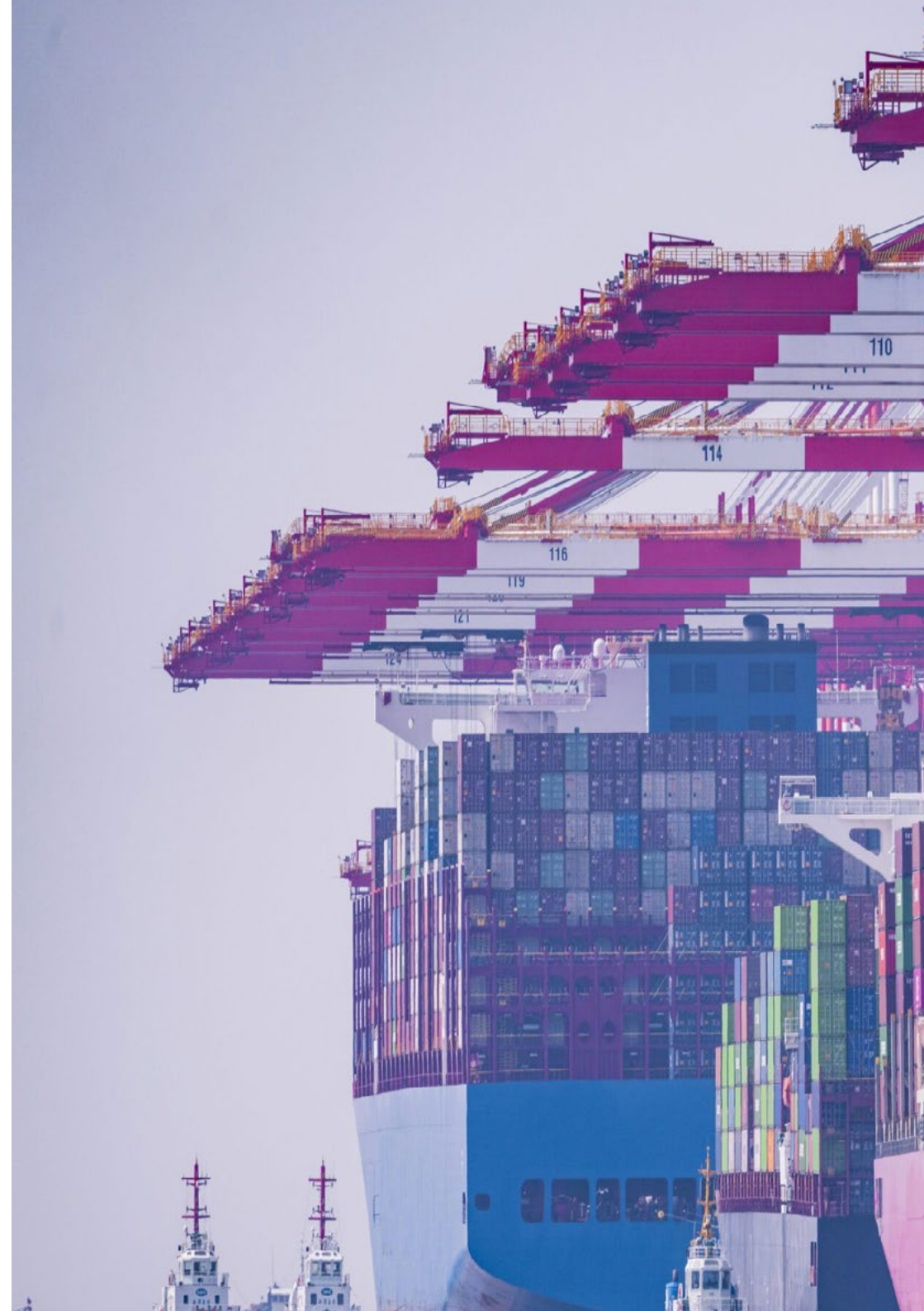
- 6.5. Provision of services oriented to customers and society as a whole
  - 6.5.1. Competitive services at the service of the general interest
  - 6.5.2. Efficiency in the provision of services
  - 6.5.3. Monitoring of the provision of services
  - 6.5.4. Simplification of bureaucratic procedures
    - 6.5.4.1. Border controls and inspections
    - 6.5.4.2. Streamlining of bureaucratic procedures
- 6.6. Innovation and the Digitalization of ports
  - 6.6.1. Electronic administration
  - 6.6.2. Digital ports
  - 6.6.3. Stimulating Innovation
  - 6.6.4. Innovation at the service of the general interest
- 6.7. International projection
  - 6.7.1. International Relations
  - 6.7.2. Brand Image
  - 6.7.3. Competitiveness of ports in the International Context
- 6.8. Environmental Sustainability
  - 6.8.1. Environmental Management
  - 6.8.2. Quality and environmental measurements
  - 6.8.3. Consumption and waste management
  - 6.8.4. Sustainable mobility
  - 6.8.5. Climate Change
  - 6.8.6. The port and the citizen
- 6.9. Security/Safety
  - 6.9.1. Industrial Safety
  - 6.9.2. Port security
  - 6.9.3. Cybersecurity

- 6.10. Ethical corporate culture and human capital
  - 6.10.1. Ethical Codes
  - 6.10.2. Supervision and Control
  - 6.10.3. Transparency
  - 6.10.4. Organizational Structure
  - 6.10.5. Equality
  - 6.10.6. Training and Career
  - 6.10.7. Communication and participation

## Module 7. Port business plan and HR management

- 7.1. Port's Business Plan as a Planning Instrument
  - 7.1.1. The Business Plan as a concretion of the global strategy of a port system
  - 7.1.2. The Business Plan as a coordinating element of planning
  - 7.1.3. SWOT
  - 7.1.4. Strategic Map
  - 7.1.5. Other Port planning instruments
- 7.2. Perspectives of a Port's Business Plan
  - 7.2.1. Port traffic
  - 7.2.2. Inversions
  - 7.2.3. Economic and financial
  - 7.2.4. Human resources
  - 7.2.5. Environment and sustainability
- 7.3. Management control through the Business Plan
  - 7.3.1. Monitoring of objectives
  - 7.3.2. Evolution of management ratios
  - 7.3.3. Corrective Actions
- 7.4. Human capital
  - 7.4.1. Social and labor context of the Ports
  - 7.4.2. HR planning within the global and port strategy
  - 7.4.3. Labor relations and negotiation

- 7.5. The need for change. Professionalization of Ports
  - 7.5.1. Resistance to Change
  - 7.5.2. How to Manage Changes
  - 7.5.3. Professionalizing ports
  - 7.5.4. Transparency and communication
- 7.6. Management by competences as a facilitator of change
  - 7.6.1. Knowledge competences
  - 7.6.2. "Soft" competences
  - 7.6.3. The different aspects of management by competences
- 7.7. Job positions
  - 7.7.1. Specification of the jobs
  - 7.7.2. Job evaluation
  - 7.7.3. Job classification and organizational structure
- 7.8. Training Plan
  - 7.8.1. Port system training plan
  - 7.8.2. Port level training plan
  - 7.8.3. The "corporate university"
  - 7.8.4. Virtual Classrooms
- 7.9. Compensation system
  - 7.9.1. Compensation system
  - 7.9.2. Compensation Structure
  - 7.9.3. Performance evaluation and variable compensation
- 7.10. Occupational Hazard Prevention
  - 7.10.1. Prevention reports. Prevention Strategy
  - 7.10.2. Occupational risks Prevention at a port
  - 7.10.3. Psychosocial Risks







## Module 8. Maritime-Port Logistics and Port Services

- 8.1. Port Community
  - 8.1.1. Port Community
  - 8.1.2. Principal Port Community Agents
  - 8.1.3. Quality Management Systems applied to the Port Community
- 8.2. Port Operations
  - 8.2.1. Port operations and port activities
  - 8.2.2. Information Systems in port operations
  - 8.2.3. Information Flows in port operations
- 8.3. Port Logistics
  - 8.3.1. Port Logistics
  - 8.3.2. Ports as logistics hubs in the global supply chain
  - 8.3.3. Logistics in container transport
- 8.4. General port management
  - 8.4.1. General organization of maritime and inland traffics in a port
  - 8.4.2. Entry of ships into port
  - 8.4.3. Assignment of anchorage and berthing places
  - 8.4.4. Ship stays and inland movements
  - 8.4.5. Movement of vehicles and people in port
  - 8.4.6. Passengers and goods
- 8.5. Management of a port terminal
  - 8.5.1. Analysis Levels
  - 8.5.2. Port terminal planning
  - 8.5.3. Productivity indicators
- 8.6. Port Services
  - 8.6.1. Port Services Regulation
  - 8.6.2. Public service obligations
  - 8.6.3. Port Service Types
- 8.7. Technical-nautical services
  - 8.7.1. Mooring
  - 8.7.2. Port towing
  - 8.7.3. Pilotage

- 8.8. Cargo, passenger and waste reception services
  - 8.8.1. Cargo handling service
    - 8.8.1.1. Loading and stowage activities
    - 8.8.1.2. Unstowing and unloading activities
    - 8.8.1.3. Possible exempted stevedoring and unstowage operations
  - 8.8.2. Reception service for ship-generated waste
  - 8.8.3. Passenger service
- 8.9. Commercial services to the ship
  - 8.9.1. Provision of victualling
  - 8.9.2. Supply of fuel
  - 8.9.3. LNG supply
  - 8.9.4. Supply of electric power to ships
- 8.10. Maritime signaling service
  - 8.10.1. Types of Navigation Aids
  - 8.10.2. Visual aids
  - 8.10.3. Hearing aids
  - 8.10.4. Radio aids
  - 8.10.5. VTS
  - 8.10.6. The IALA Maritime Maritime Beacons System

## Module 9. Infrastructure Planning and Development and Environmental Sustainability

- 9.1. Sustainable Port Planning
  - 9.1.1. Legislation: Fit for 55 and EU ETS
  - 9.1.2. Relations with other continents
  - 9.1.3. Relations with the International Maritime Organization (IMO)
- 9.2. Port planning instruments and adaptation to the new climatic reality
  - 9.2.1. Master Plans
  - 9.2.2. Planning instruments for infrastructure development
  - 9.2.3. Design and redesign of port terminals: electrification plans
  - 9.2.4. Sustainable port-city relations: Climate change and design of port-city spaces
- 9.3. Environmental assessment of port planning instruments
  - 9.3.1. Infrastructure development programs
  - 9.3.2. Evaluation of infrastructure development plans
  - 9.3.3. Evaluation of infrastructure projects
- 9.4. Financing of projects for sustainable development of port infrastructures
  - 9.4.1. The European Investment Bank
  - 9.4.2. The World Bank
  - 9.4.3. The Inter-American Development Bank
  - 9.4.4. International Investment Backgrounds
  - 9.4.5. Issuance of green bonds
- 9.5. Ports and coastal erosion: Working with Nature
  - 9.5.1. Estuary preservation projects
  - 9.5.2. Coastal regeneration projects
  - 9.5.3. Sediment reuse projects
- 9.6. Projects for investment in renewable energy sources
  - 9.6.1. On shore and off shore wind energy generation projects
  - 9.6.2. On shore and off shore photovoltaic energy projects
  - 9.6.3. Other renewable energies
- 9.7. Evaluation of the profitability of investment projects. MEIPORT Methodology
  - 9.7.1. Analysis of the context and objectives of the project
  - 9.7.2. Analysis of Alternatives
  - 9.7.3. Definition of Project
  - 9.7.4. Financial Analysis
  - 9.7.5. Economic Analysis
  - 9.7.6. Sensitivity and Risk Analysis
- 9.8. BIM technology applied to ports
  - 9.8.1. Port terminal Design
  - 9.8.2. Design of dock electrification projects
  - 9.8.3. Design of port land access projects
- 9.9. Marine environment monitoring and forecasting tools
  - 9.9.1. Measurement networks: buoys, tide gauges and high-frequency radars
  - 9.9.2. Elements for maritime climate prediction and change scenarios
  - 9.9.3. Projects

- 9.10. Blue Economy
  - 9.10.1. Blue Economy Dimensions Dimensions
  - 9.10.2. Marine ecosystem preservation projects
  - 9.10.3. Ports and climate and marine research centers: towards a long-term relationship

## Module 10. Port security and safety

- 10.1. Port Security
  - 10.1.1. Port Security
  - 10.1.2. Security and safety
  - 10.1.3. International norms, regulations and standards
- 10.2. Technological and Industrial Safety in Ports
  - 10.2.1. Management of Dangerous Goods
  - 10.2.2. Prevention of Industrial Accidents
  - 10.2.3. Safety procedures for the handling and transport of goods
- 10.3. Port security Security Planning
  - 10.3.1. Identification of Threats and Vulnerabilities
  - 10.3.2. Risk Analysis and Protection assessment
  - 10.3.3. Risk mitigation strategies. Protection plans
- 10.4. Physical and electronic protection
  - 10.4.1. Design of physical protection systems
  - 10.4.2. Access control and monitoring
  - 10.4.3. Port security technologies
- 10.5. Logical and cyber security in ports
  - 10.5.1. Specific cyber threats and vulnerabilities
  - 10.5.2. Port Cybersecurity Strategies
  - 10.5.3. Response to cyber incidents
- 10.6. Crisis and Emergency Management
  - 10.6.1. Emergency response planning
  - 10.6.2. Coordination with public safety agencies
  - 10.6.3. Response drills and exercises

- 10.7. Community Relations and Crisis Communication
  - 10.7.1. Importance of Communication with The Community
  - 10.7.2. Strategies in Communication in Crisis Situations
  - 10.7.3. Corporate Social Responsibility in ports
- 10.8. Security Department Management
  - 10.8.1. Safety Public and Private Management
  - 10.8.2. Security Planning
  - 10.8.2. Material Resources
  - 10.8.3. Human Resources Management and Training
- 10.9. Prevention and Protection
  - 10.9.1. Recommendations against risks of an antisocial nature
  - 10.9.2. Recommendations for fire risks
  - 10.9.3. Recommendations against occupational risks
- 10.10. Innovation and the Future of Port Security
  - 10.10.1. Technological trends in port security
  - 10.10.2. Business intelligence and data analysis
  - 10.10.3. Preparation for future challenges



*Thanks to the Relearning method  
you will achieve learning"*

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 s Degree in Port Management and Intermodal Transportation guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree diploma issued by TECH Technological University



“

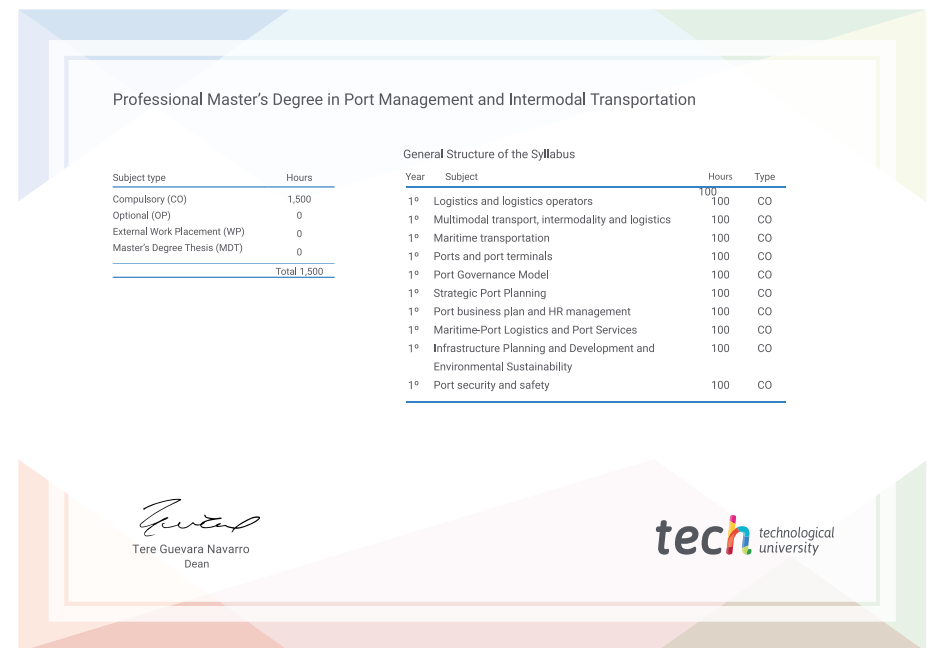
*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This **Professional Master's Degree in Port Management and Intermodal Transportation** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Professional Master's Degree** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Professional Master's Degree in Port Management and Intermodal Transportation**  
 Official N° of Hours: **1,500 hours**.



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

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
classroom



## Professional Master's Degree Port Management and Intermodal Transportation

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Professional Master's Degree Port Management and Intermodal Transportation

