Postgraduate Diploma

Port Infrastructures and Sustainability
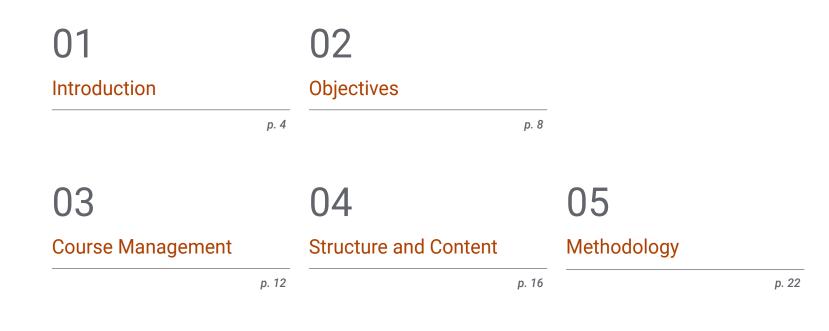
tech technological university

Postgraduate Diploma
Port Infrastructures and Sustainability

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

Website: **www.techtitute.com/in/engineering/postgraduate-diploma/postgraduate-diploma-port-infrastructures-sustainability**

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01
Introduction

In an increasingly interconnected world, ports have become essential infrastructures for global trade and the world economy. At the same time, rising ocean temperatures, flooding and sea level rise are becoming increasingly common problems. Because of this, traditional port planning instruments are being modified, both in their conception and in their processing. For this reason, TECH has developed this 100% online syllabus, which includes a teaching staff made up of great experts with extensive experience in the sector. An unique opportunity for professional growth through a flexible, agile and simple teaching methodology.

"

Benefit from the most innovative didactic content on port infrastructures! This program will allow you to incorporate the most advanced skills in your professional practice"

Port infrastructures have undergone a series of political, economic and social transformations, which have led to significant changes in their management. Therefore, expert planning of operations and services in ports has become essential. To this must be added the justified concern for effective safety and security, as well as for work that allows for a healthy interaction between cities and the marine environment.

Therefore, professionals capable of analyzing the main and specific activities in ports are required. This Postgraduate Diploma focuses on Port Community and the different agents that integrate it, as well as on the control of the traffic operation procedures, such as the entry and exit of ships, or the assignment of their mooring and berthing positions.

Likewise, another of the objectives of the qualification is to delve into the terms 'green port' and 'blue economy', or oceanic economy. For the engineer to keep up to date, it is important to understand the port activity cycle, from the design and execution of these infrastructures to their operation, including the optimization of water and energy consumption, waste collection and management, and the proper integration of ports in their natural and urban environment.

Finally, the latest trends and best practices in port security will be analyzed, from risk assessment to the implementation of advanced security strategies. Students will have access to a very complete program on threats such as terrorism, piracy, cybersecurity or natural disasters.

In short, this Postgraduate Diploma will provide the graduate with solid theoretical knowledge, as well as its application in real-world situations, through case studies and practical exercises. TECH provides students with *Relearning*, a revolutionary study method based on the reiteration of key concepts, thus guaranteeing the optimal integration of knowledge.

This **Postgraduate Diploma in Port Infrastructures and Sustainability** contains the most complete and up-to-date program on the market. Its most notable features are:

- The development of practical cases presented by experts in Port Infrastructures and Sustainability
- The graphic, schematic and eminently practical contents of the book provide up-to-date 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

Update your professional profile with the best experts in Port Infrastructures and Sustainability"

Update your engineering profile and become an expert in port infrastructures.

Learn more about the most important safety measures for the correct operation of a port with this program.

" *The protection of the ocean environment is one of the pending issues of port activities. Bet for change with TECH!"*

The program's teaching staff includes professionals from the field 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 students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

This Postgraduate Diploma will allow the student to acquire the knowledge and skills necessary to keep up to date in the profession, after delving into the key aspects of Port Infrastructures and Sustainability. The points of the syllabus, carefully designed, will drive the engineer from a global perspective, with full training for the achievement of the proposed objectives and the guarantee of obtaining the best results. Graduates will be fully empowered in this field of engineering, a guide to excellence in a sector in continuous environmental adaptation.

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"
Achieve excellence with TECH! Increase your job opportunities thanks to this program of the highest quality"

General Objectives

- 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
- 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
- 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

Specific Objectives

Module 1. 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 2. 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 3. 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

Achieve your goals through the best didactic resources, at the forefront of technology and education"

03
Course Management

TECH has brought together leading experts with the aim of providing students with a solid knowledge in the field of Port Infrastructures and Sustainability. For this reason, this program is supported by a highly qualified team, with extensive experience in the industry, and who will offer the graduate the most advanced tools to enhance their skills during the program. In this way, the necessary guarantees are offered to specialize at an international level in a growing sector, which will open the doors to professional success.

"

Learn from the best! An excellent teaching staff will guide you during this educational itinerary"

Management

Dr. 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

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

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

Ms. García, Ana María

- Chief Advisor to the President of ESPO
- Head of Development Ports of the State
- 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: 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

A unique, key, and decisive training experience to boost your professional development"

04
Structure and Content

This program delves into the environmental impact of port infrastructures and explores the most current strategies to reduce their ecological footprint. All these topics are addressed completely online through a complete Virtual Campus, providing the necessary flexibility to adapt to the needs and schedules of each student. In addition, the innovative *Relearning* methodology, a pioneer in TECH, facilitates the immediate assimilation of complex concepts.

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Delve into Working with Nature, an initiative that bets on natural solutions to provide economic and ecological benefits in the port"

Module 1. Maritime-Port Logistics and Port Services

1.1   Port Community
    1.1.1.   Port Community
    1.1.2.   Principal Port Community Agents
    1.1.3.   Quality Management Systems applied to the Port Community

1.2   Port Operations
    1.2.1.   Port operations and port activities
    1.2.2.   Information Systems in port operations
    1.2.3.   Information Flows in port operations

1.3   Port Logistics
    1.3.1.   Port Logistics
    1.3.2.   Ports as logistics hubs in the global supply chain
    1.3.3.   Logistics in container transport

1.4   General port management
    1.4.1.   General organization of maritime and inland traffics in a port
    1.4.2.   Entry of ships into port
    1.4.3.   Assignment of anchorage and berthing places
    1.4.4.   Ship stays and inland movements
    1.4.5.   Movement of vehicles and people in port
    1.4.6.   Passengers and goods

1.5   Management of a port terminal
    1.5.1.   Analysis Levels
    1.5.2.   Port terminal planning
    1.5.3.   Productivity indicators

1.6   Port Services
    1.6.1.   Port Services Regulation
    1.6.2.   Public service obligations
    1.6.3.   Port Service Types

1.7   Technical-nautical services
    1.7.1.   Mooring
    1.7.2.   Port towing
    1.7.3.   Pilotage

1.8   Cargo, passenger and waste reception services
    1.8.1.   Cargo handling service
        1.8.1.1. Loading and stowage activities
        1.8.1.2. Unstowing and unloading activities
        1.8.1.3. Possible exempted stevedoring and unstowage operations
    1.8.2.   Reception service for ship-generated waste
    1.8.3.   Passenger service
1.9   Commercial services to the ship
    1.9.1.   Provision of victualling
    1.9.2.   Supply of fuel
    1.9.3.   LNG supply
    1.9.4.   Supply of electric power to ships
1.10   Maritime signaling service
    1.10.1.   Types of Navigation Aids
    1.10.2.   Visual aids
    1.10.3.   Hearing aids
    1.10.4.   Radio aids
    1.10.5.   VTS
    1.10.6.   The IALA Maritime Maritime Beaconing System

Module 2. Infrastructure Planning and Development and Environmental Sustainability

2.1   Sustainable Port Planning
    2.1.1.   Legislation: Fit for 55 and EU ETS
    2.1.2.   Relations with other continents
    2.1.3.   Relations with the International Maritime Organization (IMO)
2.2   Port planning instruments and adaptation to the new climatic reality
    2.2.1.   Master Plans
    2.2.2.   Planning instruments for infrastructure development
    2.2.3.   Design and redesign of port terminals: electrification plans
    2.2.4.   Sustainable port-city relations: Climate change and design of port-city spaces

2.3   Environmental assessment of port planning instruments
    2.3.1.   Infrastructure development programs
    2.3.2.   Evaluation of infrastructure development plans
    2.3.3.   Evaluation of infrastructure projects
2.4   Financing of projects for sustainable development of port infrastructures
    2.4.1.   The European Investment Bank
    2.4.2.   The World Bank
    2.4.3.   The Inter-American Development Bank
    2.4.4.   International Investment Backgrounds
    2.4.5.   Issuance of green bonds
2.5   Ports and coastal erosion: Working with Nature
    2.5.1.   Estuary preservation projects
    2.5.2.   Coastal regeneration projects
    2.5.3.   Sediment reuse projects
2.6   Projects for investment in renewable energy sources
    2.6.1.   On shore and off shore wind energy generation projects
    2.6.2.   On shore and off shore photovoltaic energy projects
    2.6.3.   Other renewable energies
2.7   Evaluation of the profitability of investment projects. MEIPORT Methodology
    2.7.1.   Analysis of the context and objectives of the project
    2.7.2.   Analysis of Alternatives
    2.7.3.   Definition of Project
    2.7.4.   Financial Analysis
    2.7.5.   Economic Analysis
    2.7.6.   Sensitivity and Risk Analysis
2.8   BIM technology applied to ports
    2.8.1.   Port terminal Design
    2.8.2.   Design of dock electrification projects
    2.8.3.   Design of port land access projects
2.9   Marine environment monitoring and forecasting tools
    2.9.1.   Measurement networks: buoys, tide gauges and high-frequency radars
    2.9.2.   Elements for maritime climate prediction and change scenarios
    2.9.3.   Projects

Module 3. Port security and safety

The innovative Relearning methodology will allow you to update your knowledge through a revolutionary learning process. Don't wait any longer and enroll today"

05
Methodology

This 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 method of skills and knowledge development. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

"

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

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

A learning method that is different and innovative.

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

"

Our program prepares you to face new challenges in uncertain environments and achieve success in your career"

The 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.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

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 prepare 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we comb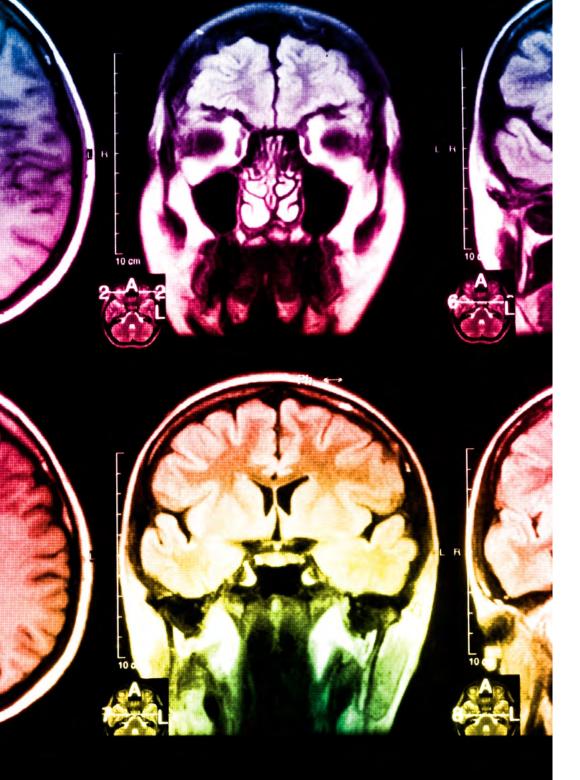ine each of these elements concentrically. This methodology has prepared more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, 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 education, 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 adapted in 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.

Practicing Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic field. 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.

30%

10%

8%

20%

25%

4%

3%

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 assess and re-assess students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Certificate

The Postgraduate Diploma in Port Infrastructures and Sustainability guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate 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 **Postgraduate Diploma in Port Infrastructures and Sustainability** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Diploma in Port Infrastructures and Sustainability**

Official Nº of Hours: **450 h.**

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Awards the following
CERTIFICATE
to
Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE DIPLOMA
in

Port Infrastructures and Sustainability

This is a qualification awarded by this University, equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

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

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

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