

# Postgraduate Certificate Port Infrastructures and Environmental Sustainability





## Postgraduate Certificate Port Infrastructures and Environmental Sustainability

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

Website: [www.techtute.com/pk/engineering/postgraduate-certificate/port-infrastructures-environmental-sustainability](http://www.techtute.com/pk/engineering/postgraduate-certificate/port-infrastructures-environmental-sustainability)

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# 01

# Introduction

Industries such as commerce and transportation are increasingly aware of their impact on the environment. Therefore, the search for sustainable solutions that enhance the integration between natural spaces and infrastructures is becoming increasingly necessary. At the same time, their implementation must be organized and planned, making this field one of the most emerging lines of professional development. In this context, TECH provides a syllabus where professionals will be able to update their theoretical and practical skills on these demands in the port sector. A syllabus that focuses on the blue economy and its variability. All this in a 100% online educational modality, without rigid schedules and the teaching guidance of the best experts.







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*Get ready to turn port entities into Green Ports and focus on environmental sustainability thanks to this 100% online Postgraduate Certificate"*

In recent years, an increase in adverse meteorological phenomena has been detected, as well as an increase in the temperature of the oceans or the rise of sea level. This has meant that traditional port planning instruments are being modernized in response to climate change. From the design of port spaces to their interaction with cities and the marine environment, they are undergoing a process of transformation in order to achieve efficiency and environmental sustainability.

Based on the importance of meeting the objectives of environmental sustainability, TECH launches this program that aims to boost the career of engineers who wish to delve into this sector of vital importance in the development of port infrastructures. In this program, the graduate will address all the necessary requirements to convert a port entity into a Green Port.

Aspects such as the design and execution of infrastructures or the proper integration of ports in their natural and urban environment will be addressed. Students will also delve into the concept of blue or oceanic economy. In this way, the future professional will have a complete vision according to the maximum regulatory requirements in this regard and its main differences in each territory.

During the educational course, the professional will become an expert in relevant aspects such as the environmental assessment and planning of port infrastructures. In addition, due to the demanding demand for process improvement in the sector, the plan presents BIM technological innovations applied to ports or the evaluation of profitability using the MEIPORT methodology.

A 100% online program that allows the student to take it comfortably, wherever and whenever he/she wants. All you need is a device with internet access to take your career one step further. A modality according to the current times with all the guarantees to position the engineer in a highly demanded sector.

This **Postgraduate Certificate in Port Infrastructures and Environmental Sustainability** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Port Infrastructures and Environmental Sustainability
- ♦ The graphic, schematic, and practical contents which provide Therapeutics and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where self-assessment can be used 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



*Master port infrastructure technologies, including the use of BIM and MEIPORT methodology throughout this Postgraduate Certificate"*



“

*Learn about the blue economy and strategic management in the port sector with a program that addresses current and future trends in the field of port planning”*

*Get a complete vision of port environmental sustainability with an international approach, adapted to the different territorial realities.*

*This 100% online program gives you the flexibility to study anytime, anywhere, preparing you for a highly demanded sector in constant evolution.*

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 students 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.



# 02 Objectives

This program is designed so that the graduate can acquire key skills in a vital area within the port sector: Environmental Sustainability. During the development of this syllabus the student will be able to be up to date in important aspects such as sustainable port-city relations or environmental assessment of port planning instruments. In addition, you will be fully empowered in a field of engineering that is versatile, global and essential, guiding you towards excellence in a sector in continuous environmental adaptation.







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*Thanks to TECH you will incorporate into your praxis the latest technologies used in environmental conservation within the port field"*

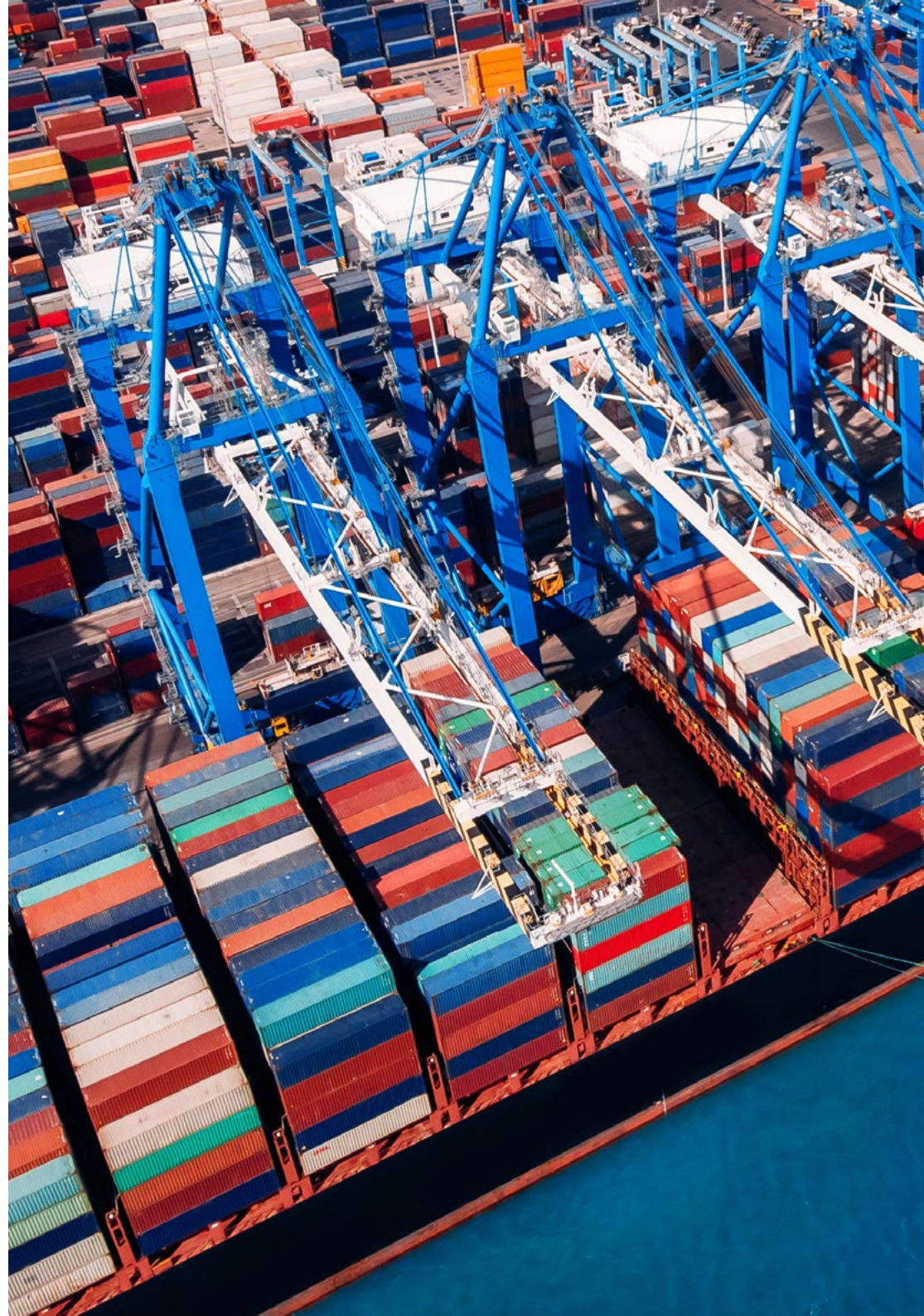




## General Objectives

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- ♦ Examine the guidelines contained in international climate directives and their impact on port infrastructure planning and construction
- ♦ Justify the different methods of financing sustainable infrastructures
- ♦ Analyze the Blue Economy and its development possibilities
- ♦ Examine the elements underpinning maritime climate analysis and its projection
- ♦ 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

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- 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

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*Looking to expand your practice and stay up to date on environmentally friendly port policies? This Postgraduate Certificate is for you”*

# 03

# Course Management

TECH is committed to providing high quality education and, to fulfill this educational philosophy, has assembled a team of teachers with extensive experience in the port field. These professionals are distinguished by their commitment and leadership in companies in the sector that accumulate multiple results and are promoters of a productive management that respects the environment. Through the educational guidance of these professionals, graduates of the program have within their reach a solid corpus of theoretical and practical content. In this way, they will achieve their learning goals in a fast, efficient and comprehensive manner.





“

*Put yourself at the forefront of Port Environmental Sustainability by the hand of great professionals in this field with an important national and international career”*

## Address



### 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

### Ms. Ana María Garcia

- ◆ 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

# 04

# Structure and Content

The syllabus of this program has been designed based on the up-to-date criteria of a distinguished faculty. As a result, this syllabus encompasses innovative planning criteria and tools. In addition, it delves into the impact of these infrastructures on nature and the most recent strategies to reduce their environmental cost. These topics will be addressed 100% online from a very complete Virtual Campus that is not restricted to tight schedules or assessment chronograms. In addition, the *Relearning* methodology, in which TECH is a pioneer, will facilitate the immediate assimilation of the most complex concepts.







“

*A program developed by experts in Port Infrastructure Sustainability that will guarantee your professional success"*

## Module 1. Infrastructure Planning and Development and Environmental Sustainability

- 1.1. Sustainable Port Planning
  - 1.1.1. Legislation: Fit for 55 and EU ETS
  - 1.1.2. Relations with other continents
  - 1.1.3. Relations with the International Maritime Organization (IMO)
- 1.2. Port planning instruments and adaptation to the new climatic reality
  - 1.2.1. Master Plans
  - 1.2.2. Planning instruments for infrastructure development
  - 1.2.3. Design and redesign of port terminals: electrification plans
  - 1.2.4. Sustainable port-city relations: Climate change and design of port-city spaces
- 1.3. Environmental assessment of port planning instruments
  - 1.3.1. Infrastructure development programs
  - 1.3.2. Evaluation of infrastructure development plans
  - 1.3.3. Evaluation of infrastructure projects
- 1.4. Financing of projects for sustainable development of port infrastructures
  - 1.4.1. The European Investment Bank
  - 1.4.2. The World Bank
  - 1.4.3. The Inter-American Development Bank
  - 1.4.4. International Investment Backgrounds
  - 1.4.5. Issuance of green bonds
- 1.5. Ports and coastal erosion: Working with Nature
  - 1.5.1. Estuary preservation projects
  - 1.5.2. Coastal regeneration projects
  - 1.5.3. Sediment reuse projects
- 1.6. Projects for investment in renewable energy sources
  - 1.6.1. On shore and off shore wind energy generation projects
  - 1.6.2. On shore and off shore photovoltaic energy projects
  - 1.6.3. Other renewable energies





- 1.7. Evaluation of the profitability of investment projects. MEIPORT Methodology
  - 1.7.1. Analysis of the context and objectives of the project
  - 1.7.2. Analysis of Alternatives
  - 1.7.3. Definition of Project
  - 1.7.4. Financial Analysis.
  - 1.7.5. Economic Analysis
  - 1.7.6. Sensitivity and Risk Analysis
- 1.8. BIM technology applied to ports
  - 1.8.1. Port terminal Design
  - 1.8.2. Design of dock electrification projects
  - 1.8.3. Design of port land access projects
- 1.9. Marine environment monitoring and forecasting tools
  - 1.9.1. Measurement networks: buoys, tide gauges and high-frequency radars
  - 1.9.2. Elements for maritime climate prediction and change scenarios
  - 1.9.3. Projects
- 1.10. Blue Economy
  - 1.10.1. Blue Economy Dimensions Dimensions
  - 1.10.2. Marine ecosystem preservation projects.
  - 1.10.3. Ports and climate and marine research centers: towards a long-term relationship.

“*With the Relearning method, in which TECH is a pioneer, you will achieve effective learning, eliminating long and unproductive hours of study*”



05

# Methodology

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

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







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

## Case Study to contextualize all content

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

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



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





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

### A learning method that is different and innovative

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

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

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

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

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.





In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

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



### Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.







**Case Studies**

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Interactive Summaries**

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



**Testing & Retesting**

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



06

# Certificate

The Postgraduate Certificate in Port Infrastructures and Environmental Sustainability guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.







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

This **Postgraduate Certificate in Port Infrastructures and Environmental 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 Certificate** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Certificate in Port Infrastructures and Environmental Sustainability**

Official N° of Hours: **150 h.**



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



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



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