Hybrid Professional Master's Degree
Naval and Ocean Engineering

TECH is a member of:

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Hybrid Professional Master's Degree
Naval and Ocean Engineering

Modality: **Hybrid (Online + Internship)**
Duration: **12 months**
Certificate: **TECH Global University**
Credits: **60 + 4 ECTS**
Website: **www.techtitute.com/us/engineering/hybrid-professional-master-degree/hybrid-professional-master-degree-naval-ocean-engineering**

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01

Introduction to the Program

The Naval and Ocean Engineering sector plays a crucial role in the global economy, facilitating maritime transportation and the exploitation of natural resources in the ocean. However, technological and environmental challenges require an innovative approach to ensure the viability and sustainability of marine operations. Given this, it is essential that professionals delve into the technological advances that have occurred in this area to optimize both their designs and maintenance processes. With this in mind, TECH is launching an innovative university program focused on the latest advances in Naval and Ocean Engineering.

Thanks to this Hybrid Professional Master's Degree, you will create strong and safe structures for different ocean platforms"

The Naval and Ocean Engineering sector plays a crucial role in the global economy, since 90% of world trade is carried out by sea, according to a new report by the International Maritime Organization. However, the constant growth of maritime activity also implies significant challenges in terms of sustainability and energy efficiency. Therefore, specialists require a solid understanding of the latest innovations in ship design, propulsion and automation technologies to contribute to the improvement of efficiency and reduction of emissions in the marine industry.

In this context, TECH presents a pioneering Hybrid Professional Master's Degree in Naval and Ocean Engineering. Designed by leading experts in this area, the academic itinerary will delve into aspects ranging from shipyard management or the use of 3D modeling of pipelines to the life cycle of naval projects. In this way, graduates will develop advanced skills to manage complex initiatives, optimize design and construction processes and lead initiatives in the maintenance of ships and offshore platforms.

On the other hand, as regards the methodology of this university program, it consists of two stages. The first is theoretical and is taught in a convenient 100% online format. In addition, TECH uses its disruptive Relearning system to guarantee a progressive and natural learning, which does not require investing extra efforts like the traditional memorization. Afterwards, the program includes a practical stay of 3 weeks in a reference entity linked to Naval and Ocean Engineering. This will allow graduates to take what they have learned to the practical field, in a real work scenario in the company of a team of experienced professionals in this area.

This **Hybrid Professional Master's Degree in Naval and Ocean Engineering** contains the most complete and up-to-date program on the market. The most important features include:

- Development of more than 100 case studies presented by professionals in Naval and Ocean Engineering
- Its graphic, schematic and practical contents provide essential information on those disciplines that are indispensable for professional practice
- All of this will be complemented by 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
- Furthermore, you will be able to carry out a internship in one of the best companies

You will integrate methods based on renewable energies and clean technologies in naval projects, reducing environmental impact"

You will implement innovative solutions in shipbuilding, optimizing both performance and sustainability"

You will develop skills in the use of maritime systems modeling, optimizing the performance and safety of naval infrastructures.

You will be prepared to lead Naval and Ocean Engineering projects, leading multidisciplinary teams efficiently.

In this Master's proposal, of a professionalizing nature and blended learning modality, the program is aimed at updating professionals in Naval and Ocean Engineering. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge into daily practice.

Thanks to its multimedia content developed with the latest educational technology, they will allow the Naval and Ocean Engineering professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to train in real situations. The design of this program is based on Problem-Based Learning, by means of which the student must try to solve the different professional practice situations that arise during the program. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

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Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.

Study at the world's largest online university and guarantee your professional success. The future starts at TECH"

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.

The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.

Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.

The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.

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Syllabus

The didactic materials that make up this Hybrid Professional Master's Degree have been designed by leading experts in Naval and Ocean Engineering. In this way, the curriculum will delve into issues ranging from the life cycle of naval projects or the use of state-of-the-art machinery to the most effective techniques to ensure safety in maritime activities or vessels.

You will be able to identify operational risks in maritime activities, promoting the integrity of vessels and personnel"

Module 1. The Life Cycle of Naval Projects

1.1. The Life Cycle of Naval Projects
- 1.1.1. The Lifecycle
- 1.1.2. Stages

1.2. Negotiation and Feasibility
- 1.2.1. Viability Analysis: Generating Alternatives
- 1.2.2. Budgets
- 1.2.3. Negotiation
- 1.2.4. Contracts and Execution

1.3. Conceptual Engineering
- 1.3.1. Conceptual Design
- 1.3.2. General Provisions
- 1.3.3. Technical Specifications
- 1.3.4. Relevant Conceptual Project Information

1.4. Basic Engineering Structures
- 1.4.1. Structural Systems
- 1.4.2. Calculation Methodologies
- 1.4.3. Beam Vessel Theory

1.5. Basic Machinery and Electrical Engineering
- 1.5.1. Propulsion
- 1.5.2. Services
- 1.5.3. Electricity

1.6. Development Engineering
- 1.6.1. Construction Strategy and Manufacturing Constraints
- 1.6.2. 3D Modeling and Operations

1.7. Production and Maintenance
- 1.7.1. Construction Strategies
- 1.7.2. Budget and Planning
- 1.7.3. Production Organization
- 1.7.4. Outsourcing
- 1.7.5. Purchasing and Logistics Management
- 1.7.6. Quality Control
- 1.7.7. Monitoring and Control
- 1.7.8. Delivery and Commissioning

1.8. Shipyard Management
- 1.8.1. Strategy
- 1.8.2. Sizing and Investments
- 1.8.3. Human Resources and Training
- 1.8.4. Auxiliary Industry
- 1.8.5. Plant Maintenance and Reliability
- 1.8.6. Financial Management
- 1.8.7. Quality
- 1.8.8. The Environment
- 1.8.9. Occupational Risk Prevention
- 1.8.10. Continuous Improvement and Excellence

1.9. Operation
- 1.9.1. Departure from the Shipyard
- 1.9.2. Start of Operations
- 1.9.3. Ports
- 1.9.4. Scrapping

1.10. Innovation and Development
- 1.10.1. R&D&I in New Technologies
- 1.10.2. R&D&I in Engineering
- 1.10.3. R&D&I in Energy

Module 2. Negotiation and Feasibility

2.1. Market Research
- 2.1.1. Market Research Startup Conditions
- 2.1.2. Key Points in Market Research

2.2. Feasibility Study
- 2.2.1. Time Calculations (Cargo Management, Ports and Routes)
- 2.2.2. Capacity Calculations (Quantities to Be Transported)
- 2.2.3. Cost Calculation
- 2.2.4. Service Life

2.3. Decision Matrix
- 2.3.1. Decision Matrix Design
- 2.3.2. Decision-Making

2.4. Budget
- 2.4.1. Budget Types
- 2.4.2. CAPEX
- 2.4.3. OPEX

2.5. Relationship between Shipowners and Technical/Shipyard Offices
- 2.5.1. Shipowner-Technical Office
- 2.5.2. Shipowner-Shipyard

2.6. Requesting and Assessing Bids
- 2.6.1. Information Required for Bids
- 2.6.2. Homogenization of Bids

2.7. Negotiation Techniques
- 2.7.1. Concept of Negotiation
- 2.7.2. Negotiation Types
- 2.7.3. Negotiation Phases

2.8. Classification Society and Flags
- 2.8.1. Classification Societies
- 2.8.2. Flags

2.9. Construction Contracts
- 2.9.1. Types of Contract
- 2.9.2. Payment Milestones
- 2.9.3. Penalties
- 2.9.4. Contract Cancellation

2.10. Contract Monitoring
- 2.10.1. Inspection Teams
- 2.10.2. Cost Control
- 2.10.3. Risk Analysis and Monitoring
- 2.10.4. Variations and Extras
- 2.10.5. Warranties

Module 3. Conceptual Engineering

3.1. Regulation
- 3.1.1. Statutory
- 3.1.2. Classification Societies
- 3.1.3. Additional Regulations

3.2. Vessel Sizing
- 3.2.1. Main Dimensions
- 3.2.2. Relation between Dimensions
- 3.2.3. Main Coefficients
- 3.2.4. Design Constraints
- 3.2.5. Alternatives and Final Selection

3.3. Hydrodynamics (I)
- 3.3.1. Shapes
- 3.3.2. Propulsive Power, Selecting the Type of Propulsive and Steering Equipment

3.4. Hydrodynamics (II)
- 3.4.1. Theoretical Basis
- 3.4.2. CFD (Computational Fluid Dynamics)
- 3.4.3. Channel Tests
- 3.4.4. Validation during Sea Trials

3.5. General Arrangement and Technical Specifications
- 3.5.1. Technical Specifications
- 3.5.2. Compartmentalization
- 3.5.3. Autonomy
- 3.5.4. Flag Authorization
- 3.5.5. Safety and CI
- 3.5.6. Ventilation
- 3.5.7. HVAC

3.6. Stability
- 3.6.1. Thread Weight and Center of Gravity of the Vessel
- 3.6.2. Stability (Intact and Damage)
- 3.6.3. Longitudinal Strength
- 3.6.4. Validation Using Stability Tests

3.7. Structure
- 3.7.1. Structural Parameters
- 3.7.2. Preliminary Master Frame: Steel Weight Estimation
- 3.7.3. Noise and Vibration

3.8. Machinery
- 3.8.1. Machine Room Layout, Equipment List
- 3.8.2. Conceptual Electrical Balance

3.9. Load and Deck Equipment
- 3.9.1. Loading Equipment
- 3.9.2. Mooring and Anchoring Equipment

3.10. Vessel Types
- 3.10.1. Passenger (SRTP)
- 3.10.2. Weight Vessels
- 3.10.3. Volume Vessels
- 3.10.4. Special Vessels
- 3.10.5. Fishing Vessels and Tugboats
- 3.10.6. Platforms

Module 4. Structural Engineering

4.1. Calculation Systems
- 4.1.1. Rule-Based Design
- 4.1.2. Rationally-Based Design

4.2. Structural Design Principles
- 4.2.1. Materials
- 4.2.2. Bottom and Double Bottom Structures
- 4.2.3. Deck Structure
- 4.2.4. Liner Structure
- 4.2.5. Bulkhead Structure
- 4.2.6. Welding

4.3. Loads
- 4.3.1. Internal
- 4.3.2. External
- 4.3.3. Sea-Related
- 4.3.4. Specific

4.4. Scantlings
- 4.4.1. Tertiary Element Calculation
- 4.4.2. Ordinary Element Calculation

4.5. Primary Element Calculation
- 4.5.1. New Technologies
- 4.5.2. Numeric Methods
- 4.5.3. Bar Numerical Simulation
- 4.5.4. Shell Numerical Simulation
- 4.5.5. Submodels

4.6. New Technologies
- 4.6.1. Software
- 4.6.2. Models and Submodels
- 4.6.3. Fatigue

4.7. Key Plans
- 4.7.1. Digital Twins
- 4.7.2. Constructability

4.8. Other Structures (I)
- 4.8.1. Bow
- 4.8.2. Stern
- 4.8.3. Engine Space
- 4.8.4. Superstructure

4.9. Other Structures (II)
- 4.9.1. Ramps and Side Doors
- 4.9.2. Hatches
- 4.9.3. Heliports
- 4.9.4. Main Engine Mount
- 4.9.5. Crane Calculation
- 4.9.6. Rudder and Appendages

4.10. Other Calculations
- 4.10.1. Anchoring and Mooring Equipment Structure
- 4.10.2. Anchoring Models
- 4.10.3. Weight and Preliminary MTO

Module 5. Installation, Machinery and Electrical Engineering

5.1. Current Propulsion Systems and Propellants
- 5.1.1. Propulsion Systems
- 5.1.2. Thrusters
- 5.1.3. Latest IMO Emission Control Regulations

5.2. Main and Auxiliary Engine Services
- 5.2.1. Regulations
- 5.2.2. Materials
- 5.2.3. Equipment
- 5.2.4. Calculations

5.3. Other Machine Room Services
- 5.3.1. Regulations
- 5.3.2. Materials
- 5.3.3. Equipment
- 5.3.4. Calculations

5.4. Off-Site Machine Services
- 5.4.1. Regulations
- 5.4.2. Materials
- 5.4.3. Equipment
- 5.4.4. Calculations

5.5. Fire Services
- 5.5.1. Regulations
- 5.5.2. Materials
- 5.5.3. Equipment
- 5.5.4. Calculations

5.6. Hotel Services
- 5.6.1. Regulations
- 5.6.2. Materials
- 5.6.3. Equipment
- 5.6.4. Calculations

5.7. Balance
- 5.7.1. Thermal
- 5.7.2. Water

5.8. Ventilation and Air Conditioning
- 5.8.1. Machine Room Ventilation
- 5.8.2. Ventilation Outside the Machine Room
- 5.8.3. HVAC

5.9. Electrical Balance and Single-Line Diagrams
- 5.9.1. Electrical Balance
- 5.9.2. Single-Line Diagrams

5.10. Basic Electrical Engineering
- 5.10.1. Scope

Module 6. Development and Production Engineering

6.1. Construction Strategies
- 6.1.1. BSA (Build Strategy Approach)
- 6.1.2. Work Breakdown
- 6.1.3. Design to Build Engineering

6.2. CADCAM Systems: 3D Ship Modeling
- 6.2.1. Modeling
- 6.2.2. Interface with PLM Tools and FEM and CFD Calculations
- 6.2.3. Constructive Limitations in Design
- 6.2.4. Virtual Reality, Verifications and Design Reviews

6.3. Steel Detail Engineering
- 6.3.1. Modeling
- 6.3.2. Plate Nesting
- 6.3.3. Profile Nesting
- 6.3.4. Products (Flat and Curved Plates and Profiles; Pre-Blocks, Sub-Blocks and Blocks)
- 6.3.5. Assembly: Sub-Blocks and Blocks
- 6.3.6. Plate and Profile MTO

6.4. Detailed Outfitting Engineering (I)
- 6.4.1. 3D Modeling of Auxiliary Structures and Equipment Poles
- 6.4.2. Construction and Assembly Drawings
- 6.4.3. Plate and Profile MTO
- 6.4.4. Equipment Layout Drawings

6.5. Detailed Outfitting Engineering (II)
- 6.5.1. 3D Modeling of Pipelines
- 6.5.2. Spools
- 6.5.3. Isometric
- 6.5.4. Layout Drawings
- 6.5.5. Pipes and Fittings MTO

6.6. Detailed Electrical Engineering (I)
- 6.6.1. 3D Modeling of Electrical Conduits
- 6.6.2. Arranging Apparatus, Switchboards and Consoles
- 6.6.3. Listing and Arranging Apparatus in Hazardous Areas
- 6.6.4. Tray Filling and Electrical Passages
- 6.6.5. Construction Engineering Machine Control Console
- 6.6.6. Constructive Engineering Electrical Panels

6.7. Detailed Electrical Engineering (II)
- 6.7.1. Electrical Diagrams
- 6.7.2. Cable Lists
- 6.7.3. Wiring Diagrams
- 6.7.4. System Wiring Arrangements (Power, Lighting, Communications, Navigation, Fire and Safety)
- 6.7.5. List of Automated Functions and Alarms

6.8. Accommodation Detail Engineering
- 6.8.1. Premises Layout
- 6.8.2. Booth Layout
- 6.8.3. General Flag Authorization Layout
- 6.8.4. General Furniture Layout
- 6.8.5. General Decorative Flooring Layout
- 6.8.6. Decorative Projects

6.9. Detailed Electrical Engineering (II)
- 6.9.1. 3D Modeling of Ducts
- 6.9.2. Construction and Assembly Drawings of Rectangular Section Ducts
- 6.9.3. Isometric Drawings of Circular Section Ducts
- 6.9.4. Ducts Layout Drawings
- 6.9.5. Detailed Drawings of Flanges and Fittings
- 6.9.6. Ducts and Fittings MTO

6.10. Maneuvers
- 6.10.1. Location Plans of Maneuvering Eyebolts to Turn and/or Assemble Blocks and Sub-Blocks

Module 7. Production

7.1. Construction Strategies: Preparation
- 7.1.1. Division into Blocks and Sections
- 7.1.2. Physical Shipyard Conditions
- 7.1.3. Constraints due to Facility Availability
- 7.1.4. Project Constraints
- 7.1.5. Supply Constraints
- 7.1.6. Other Constraints
- 7.1.7. Implications of Subcontracting

7.2. Budget and Planning
- 7.2.1. Integrated Construction
- 7.2.2. Steel
- 7.2.3. Outfitting
- 7.2.4. Painting
- 7.2.5. Other: Electricity, Flag Authorization, Insulation
- 7.2.6. Testing, Commissioning and Delivery

7.3. Production Organization (I)
- 7.3.1. Steel
- 7.3.2. Pre-Outfitting
- 7.3.3. Engine Room
- 7.3.4. Main Equipment and Shaft Lines
- 7.3.5. Cargo and Deck
- 7.3.6. Electricity
- 7.3.7. Flag Authorization

7.4. Production Organization (II)
- 7.4.1. Painting
- 7.4.2. Insulation
- 7.4.3. Launching and Floating

7.5. Outsourcing
- 7.5.1. Advantages and Disadvantages of Outsourcing
- 7.5.2. Outsourcing Planning
- 7.5.3. Assessment, Decision Criteria and Awarding Criteria
- 7.5.4. Outsourcing as a Strategic Competitive Element

7.6. Purchasing and Logistics Management
- 7.6.1. Technical Specifications
- 7.6.2. Materials and Equipment Purchasing Plans
- 7.6.3. Monitoring and Quality Control

7.7. Quality Control and Statistical Control
- 7.7.1. Statistical Process Control
- 7.7.2. Statistical Methods Applied to Quality Control

7.8. Monitoring and Control
- 7.8.1. Monitoring Planning
- 7.8.2. Cost and Budget Monitoring
- 7.8.3. Quality Monitoring
- 7.8.4. Occupational Risk Prevention (ORP) Monitoring
- 7.8.5. Environmental Monitoring

7.9. Delivery and Commissioning
- 7.9.1. Test Protocols
- 7.9.2. Stability Tests
- 7.9.3. Dock Tests
- 7.9.4. Sea Trials
- 7.9.5. Warranties

7.10. Repairs
- 7.10.1. The Ship Repair Business
- 7.10.2. Repair Yard Features
- 7.10.3. Repair Yard Organization
- 7.10.4. Workflow
- 7.10.5. Ship Repair Projects

Module 8. Shipyard Management

8.1. Strategy
- 8.1.1. Strategy Fundamentals
- 8.1.2. Competitive Environment
- 8.1.3. Competitive Positioning
- 8.1.4. Criteria and Methods for Strategic Decisions

8.2. Sizing and Investments
- 8.2.1. Product Optimization and Strategy
- 8.2.2. Fixed, Variable and Breaking Even Costs
- 8.2.3. Investment Analysis

8.3. Human Resources and Training
- 8.3.1. Human Resources Strategies
- 8.3.2. Outsourcing and Turnkey
- 8.3.3. Selection
- 8.3.4. Compensation and Benefits
- 8.3.5. Well-Being
- 8.3.6. Personnel Management. Talent Management. Talent Matrix
- 8.3.7. Development and Training Plans: Internal and External Master's Degrees and Schools

8.4. Auxiliary Industry
- 8.4.1. The Ancillary Industry as a Competitive Factor
- 8.4.2. Pros and Cons of Outsourcing
- 8.4.3. Strategic Implications
- 8.4.4. Legal Aspects

8.5. Plant Maintenance and Reliability
- 8.5.1. Maintenance Organization
- 8.5.2. Current Maintenance Techniques

8.6. Financial Management
- 8.6.1. Financial Management
- 8.6.2. Cash Flow and Financial Planning
- 8.6.3. The Time Value of Money: Interest Rates
- 8.6.4. Risk and Return: The Cost of Capital
- 8.6.5. Budgeting Techniques
- 8.6.6. Leverage and Capital Structure
- 8.6.7. Shipbuilding Aid

8.7. Quality
- 8.7.1. ISO 9001
- 8.7.2. Quality Policy
- 8.7.3. Quality Objectives
- 8.7.4. RACI Matrix
- 8.7.5. Integrating ISO Management Systems

8.8. Environment
- 8.8.1. ISO 14001
- 8.8.2. Environmental Management

8.9. Continuous Improvement and Excellence
- 8.9.1. Continuous Improvement Tools
- 8.9.2. Improvements in Material Flow and Plant Layout
- 8.9.3. Equipment Efficiency
- 8.9.4. Environmental Improvements
- 8.9.5. Other Keys to Improvement

Module 9. Naval Vessel Management and Operation

9.1. Basic Vessel Documentation
- 9.1.1. Vessel Documentation and Permits
- 9.1.2. Crew Documentation and Permits
- 9.1.3. Cargo Documentation and Permits
- 9.1.4. Ship Insurance

9.2. Maintenance
- 9.2.1. Obligations, Certifications and Flags
- 9.2.2. Maintenance Plans
  - 9.2.2.1. Preventative Maintenance
  - 9.2.2.2. Predictive Maintenance
  - 9.2.2.3. Corrective Maintenance
  - 9.2.2.4. Maintenance Plan Monitoring
- 9.2.3. Digital Twins
- 9.2.4. Quadrennial or Quinquennial Major Repairs

9.3. Port Management
- 9.3.1. Shipping Agencies or Consignees
- 9.3.2. Ship Victualling
- 9.3.3. Permits and Authorizations Vessel Operations

9.4. Staff Management
- 9.4.1. Crew: Key Positions
- 9.4.2. Travel and Boarding Documentation
- 9.4.3. Personnel Selection
- 9.4.4. Labor Conditions and Legislation
- 9.4.5. Crew Transfer

9.5. Ship or Vessel Operations
- 9.5.1. Civilian Vessels
  - 9.5.1.1. Transport Vessels
    - 9.5.1.1.1. Dry Cargo
    - 9.5.1.1.2. Frozen Cargo
    - 9.5.1.1.3. Fuel Transportation and Vetting
  - 9.5.1.2. Fishing Vessels
  - 9.5.1.3. Support Vessels, Artifacts and Platforms
  - 9.5.1.4. Passenger Vessels
- 9.5.2. Military Vessels
- 9.5.3. Maritime Navigation
  - 9.5.3.1. Navigation and Tracking Equipment

9.6. Daily Life on Board, Coexistence
- 9.6.1. Daily Life on Board
- 9.6.2. Medical Emergencies and Health on Board
- 9.6.3. Occupational Risk Prevention on Board

9.7. Port and Navigation Vessel Safety and Integrity
- 9.7.1. Piracy and Stowaways
- 9.7.2. Collisions and Naval Boarding Action

9.8. New Technologies in Ship Management and Operations
- 9.8.1. Enterprise Resource Planning (ERP) and Corporate Tools
- 9.8.2. Other Management Tools

9.9. Vessel Operating Income Statement
- 9.9.1. Main KPIS indicators in Vessel Management
- 9.9.2. Vessel P&L

9.10. Sustainability on Ships
- 9.10.1. Recycling
- 9.10.2. Sustainability
- 9.10.3. Sustainable Fuels

Module 10. Innovation, Development and Research

10.1. New Design Methodologies: Reliability
- 10.1.1. Risk Analysis
- 10.1.2. FMEA
- 10.1.3. HAZID
- 10.1.4. HAZOP

10.2. Engineering: R&D&I: New Materials
- 10.2.1. New Materials

10.3. R&D&I: Digital Twins
- 10.3.1. Product
- 10.3.2. Production
- 10.3.3. Performance

10.4. R&D&I: Autonomous Vessels
- 10.4.1. Autonomous Vessels
- 10.4.2. Regulations
- 10.4.3. Difference from Intelligent Vessels
- 10.4.4. Classification Societies
- 10.4.5. Examples of Autonomous Vessel Projects

10.5. R&D&I in Energy (I): Alternative Fuels
- 10.5.1. Liquefied Natural Gas (LNG): The Clean Alternative to Multi-Disciplinary Design Optimization (MDO)
- 10.5.2. Hydrogen as a Future Naval Fuel
- 10.5.3. Fuel Cell

10.6. R&D&I in Energy (II): Energy Efficiency
- 10.6.1. Clean Concepts for Vessels
- 10.6.2. EEDI: Efficient Vessels
- 10.6.3. EEOI
- 10.6.4. SEEMP

10.7. R&D&I in Energy (III): Renewable Energies
- 10.7.1. Floating Wind Turbines
- 10.7.2. Wave Energy
- 10.7.3. Tidal

10.8. Innovation and New Technologies in Construction
- 10.8.1. Augmented Reality and 3D Vision, Virtual Reality
- 10.8.2. Productive Improvements Based on Information Management

10.9. Innovation in Operation (I): New Communication Systems
- 10.9.1. Satellite Systems
- 10.9.2. Impulse Systems (Sonar, Radars)

10.10. Innovation in Operation (II): Applying Blockchain Technology in Fleet Management
- 10.10.1. Definition of Blockchain
- 10.10.2. Application Examples

"The Relearning system applied by TECH in its programs reduces the long hours of study so frequent in other teaching methods"

04

Teaching Objectives

The program design of this Hybrid Professional Master's Degree in Naval and Ocean Engineering will allow students to acquire the necessary skills to specialize in the design, construction and operation of ships and offshore platforms. The knowledge acquired throughout the curriculum will drive the professional, enabling them to address the technical and environmental challenges of the sector, and guiding them towards excellence in a constantly evolving field.

This program gives you the opportunity to update your knowledge in a real scenario, with the maximum scientific rigor of an institution at the forefront of technology"

General Objective

- The overall objective of the Hybrid Professional Master's Degree in Naval and Ocean Engineering is to update professionals in the most advanced procedures and technologies for the design and operation of vessels and offshore platforms. Through practical training in reference centers, students will work with experts to improve their skills and address technical challenges, improving their ability to innovate in the maritime sector

Access the multimedia resources library and the entire syllabus from day one. No fixed schedules!"

Specific Objectives

Module 1. The Life Cycle of Naval Projects

- Know the phases in the initial project definition stage, from market and feasibility studies, through bids and negotiations, to contract signing and contract follow-up
- Delve into the necessary documentation requirements generated to be approved by shipowners, classification societies and flag authorities

Module 2. Negotiation and Feasibility

- Delve into the methods of financing naval projects, existing aids and subsidies
- Analyze the most common types of contracts, payment milestones, penalties and types of cancellations

Module 3. Conceptual Engineering

- Become familiar with project spirals and conceptual design in early stages
- Update on the applicable regulations and their influence on design

Module 4. Structural Engineering

- Know the theories of structural calculation
- Identify structural construction systems

Module 5. Installation, Machinery and Electrical Engineering

- Identify the implications of the new IMO regulations for on-board emission control on propulsion system designs and engine selection
- Analyze the most important documents, drawings and electrical calculations for engineering approval for company and shipowner classification

Module 6. Development and Production Engineering

- Know how to design construction and assembly drawings of rectangular section ducts
- Draft drawings of lifting eyebolt locations to turn and/or assemble blocks and sub-blocks

Module 7. Production

- Reinforce knowledge of the areas related to ship production and repair
- Delve into different disciplines, specialties and the latest trends in shipyard production organization

Module 8. Shipyard Management

- Understand the purpose, scope and summary requirements of ISO 9001, ISO 14001 and ISO 45001
- Achieve material flow and plant layout improvements

Module 9. Naval Vessel Management and Operation

- Know the necessary permits for vessels to operate
- Understand how to manage ship maintenance and how to make maintenance plans

Module 10. Innovation, Development and Research

- Update on new design methodologies for reliable design, risk analysis, FMEA, HAZID and HAZOP
- Learn about the different concepts in wave energy utilization

05

Internship

After passing the online theoretical period, the university program contemplates that students will carry out a practical internship in a recognized entity in the field of Naval and Ocean Engineering. Throughout this immersive experience, students will have at their disposal the support of a tutor who will accompany them throughout the process, both in the preparation and in the development of the internship.

You will have a solid understanding of the international safety, environmental and operational regulations governing Naval Engineering"

In this training proposal, of a completely practical nature, the activities are aimed at developing and perfecting the competencies necessary for the provision of Naval and Ocean Engineering services, and in conditions that require a high level of qualification.

It is undoubtedly a unique opportunity to learn by working in a cutting-edge maritime environment, where advanced technology and innovation in the design, operation and maintenance of naval vessels are at the core of professional practices. This new way of integrating maritime processes makes the main shipyards and ocean platforms the ideal setting for this training experience, perfecting technical and operational skills in 21st century Naval and Ocean Engineering.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of professors and other training partners that facilitate teamwork and multidisciplinary integration as transversal competencies for the praxis of Naval and Ocean Engineering (learning to be and learning to relate).

The procedures described below will be the basis of the practical part of the training, and its realization will be subject to the center's own availability and workload, being the proposed activities the following:

> *You will design resistant structures for vessels or ocean platforms, considering factors such as water movements"*

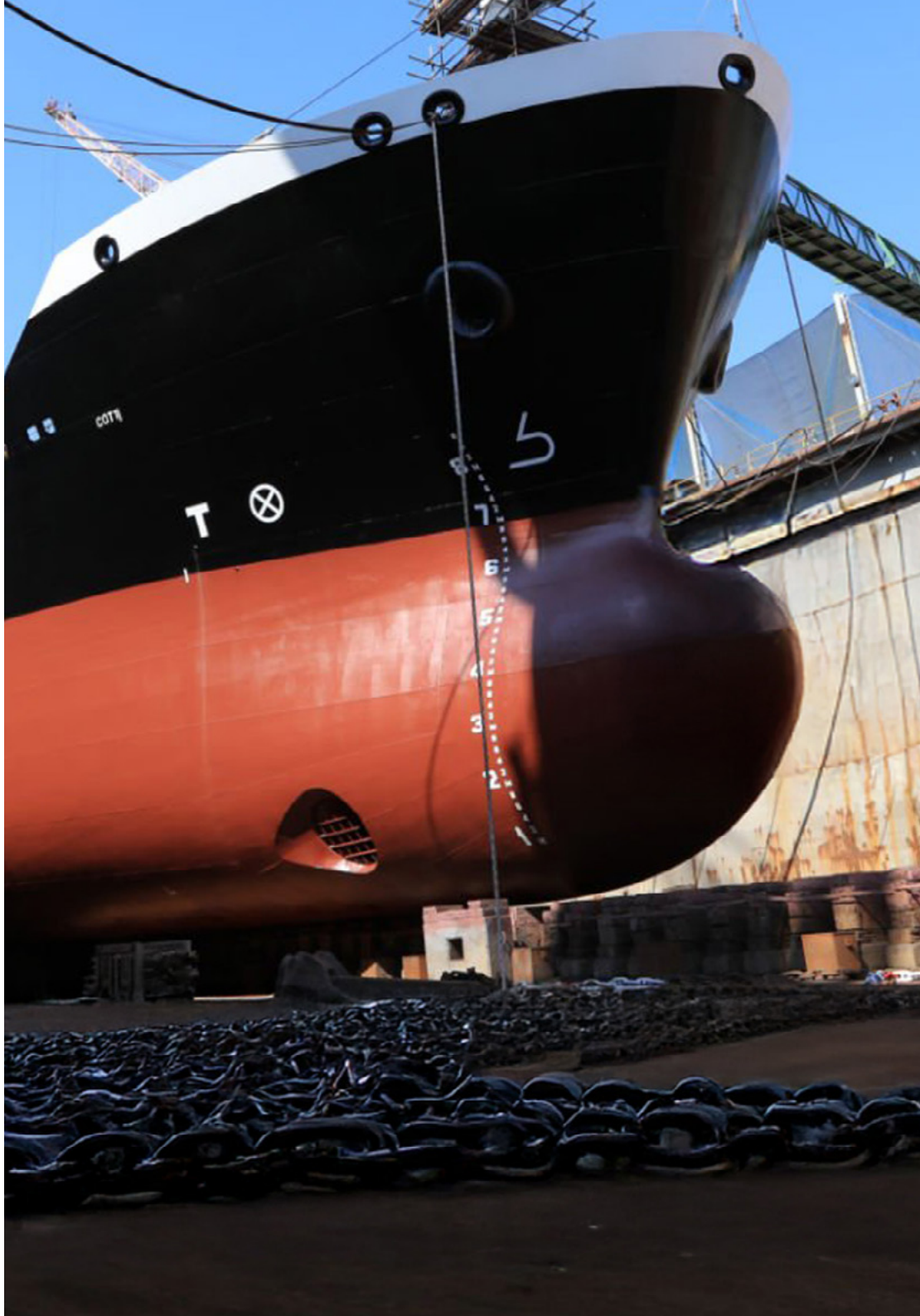
Module	Practical Activity
Strategic Planning	Create and define initial concepts for vessels, floating platforms and marine structures
	Conduct preliminary studies to determine the technical feasibility of a project, ensuring that the conceptual design is feasible within available technical and material constraints
	Develop models of systems, such as propulsion systems, electrical and hydraulic systems, and loading systems, to illustrate how they will function in the design phase and their integration into the overall project structure
	Identify key technical, operational, and financial risks in the conceptual phase, recommending mitigation strategies to address potential challenges throughout the project life cycle
Structural Design	Perform structural design of residential, commercial and industrial buildings, ensuring that structures are safe, functional and comply with local building regulations
	Evaluate the loads that a structure will be subjected to, such as self-weight, live loads (people, furniture, etc.), dead loads (wind, snow), and seismic loads, to determine if the structure can safely withstand them
	Calculate and design foundations for structures, considering factors such as soil type, loading of the structure and environmental conditions, to ensure stability and safety
	Evaluate the safety of structures already built, performing inspections, material fatigue analysis and structural integrity studies to determine the need for repairs, reinforcement or rehabilitation
Industrial Facilities Engineering	Develop drawings and calculations for industrial, commercial or residential electrical installations, ensuring proper distribution of electricity and compliance with safety regulations
	Create preventive maintenance programs for industrial machinery, as well as intervene in the repair of failed equipment
	Evaluate power distribution in factories and buildings, in order to reduce losses and improve overall performance
	Coordinate the integration of robots, automation systems and software-controlled machinery to improve productivity and accuracy in the workplace
Vessel and Offshore Platform Management	Monitor weather and ocean conditions in real time using advanced monitoring technologies to anticipate any changes that may affect the safe operation of naval vessels
	Develop contingency plans and emergency protocols to deal with potential accidents or disasters during operations
	Evaluate and continuously improve the performance of naval vessels by analyzing operational data, such as speed, fuel efficiency, maintenance, and overall performance
	Implement real-time performance monitoring technologies to detect areas of improvement and optimize operations

Civil Liability Insurance

The university's main concern is to guarantee the safety of the interns, other collaborating professionals involved in the internship process at the center. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, the university commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the stay at the internship center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the Internship Program period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: the Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

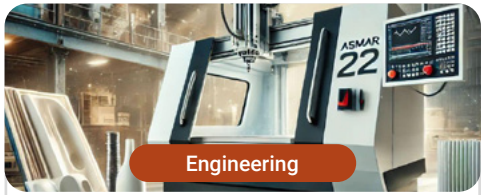
06

Internship Centers

This Hybrid Professional Master's Degree program includes in its itinerary a practical stay in a prestigious entity where the student will put into practice everything learned in the field of Naval and Ocean Engineering. In this sense, and in order to bring this academic itinerary closer to more professionals, TECH offers the student the opportunity to do it in different centers geographically. In this way, this institution strengthens its commitment to quality and affordable education for all.

You will carry out a practical stay in a reference entity in the field of Naval and Ocean Engineering"

The student will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:



Asmar22

Country
Spain

City
Cadiz

Address: C/Cedro Modulo 3 puerta 4 , Taraguillas, CP 11368, San Roque (Cádiz)

Manufacture of boats and composite parts, specializing in machining of models

Related internship programs:

- Naval and Ocean Engineering

Boost your career path with holistic teaching, allowing you to advance both theoretically and practically"

07

Career Opportunities

This revolutionary TECH university program offers a unique opportunity for engineering professionals who wish to upgrade their skills and master the most advanced tools in the design, construction and operation of ships and ocean platforms. Through this cutting-edge knowledge, graduates will significantly expand their career opportunities in both the competitive marine and ocean sectors.

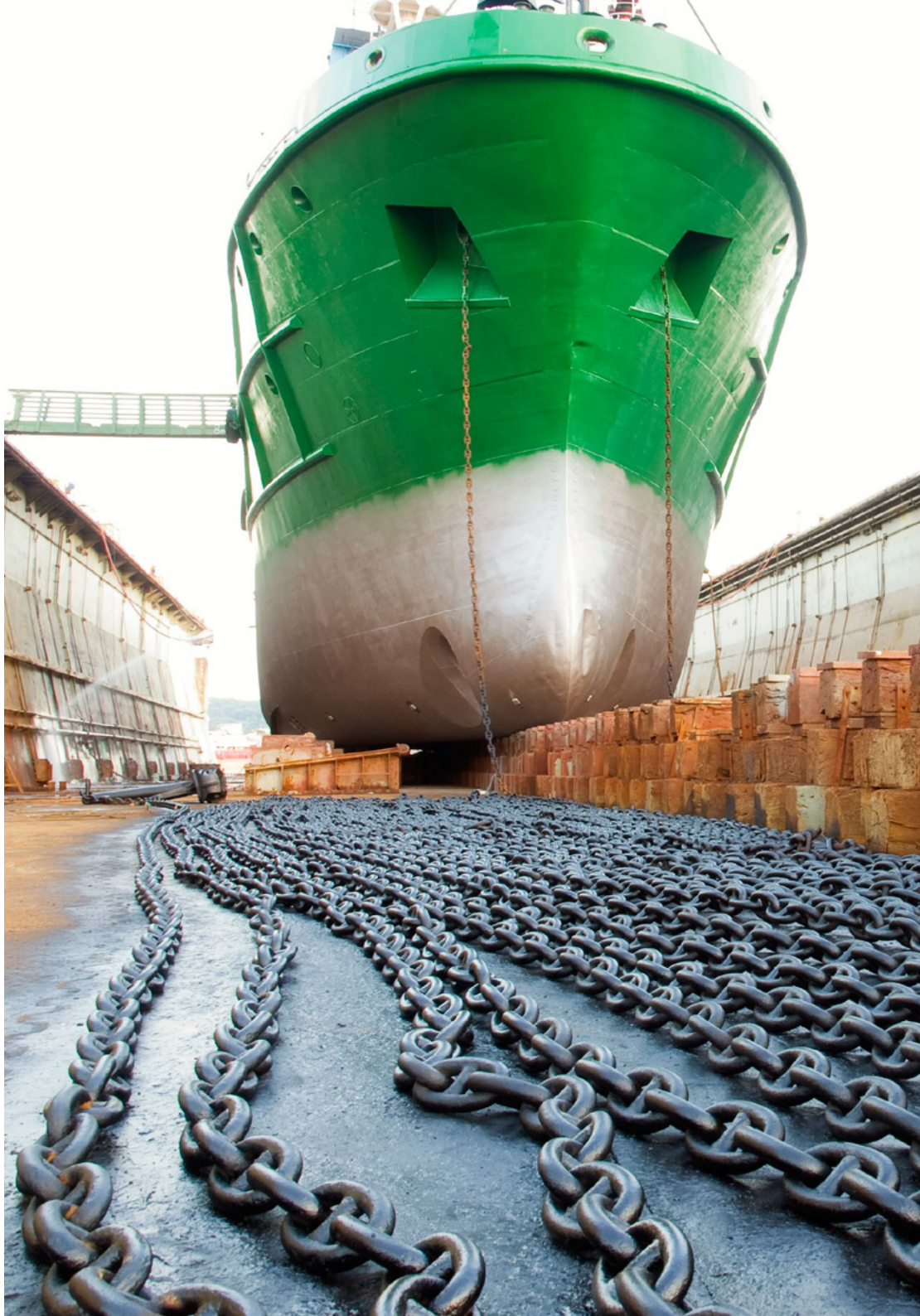
Do you want to work as a Naval Project Management Engineer? Do it through this university program in only 12 months”

Graduate Profile

Graduates of this Hybrid Professional Master's Degree in Naval and Ocean Engineering will be professionals trained to design, build and optimize vessels and ocean platforms, integrating innovative technologies that improve operational efficiency and sustainability. In turn, they will be prepared to lead technical projects, address environmental and safety challenges, and contribute to the advancement of maritime engineering with cutting-edge solutions.

You will ensure that all activities related to Marine Engineering comply with international safety regulations and environmental standards.

- **Adaptation of Advanced Technologies in Naval Projects:** Ability to incorporate innovative technologies, such as computer simulations and advanced navigation systems, in the design and operation of naval artifacts, optimizing the efficiency and safety of vessels and ocean platforms.
- **Solving Technical Challenges in Naval Engineering:** Ability to apply critical thinking and Engineering methodologies to identify and solve complex problems in the design, maintenance and operation of vessels and platforms, continuously improving their performance in harsh marine environments
- **Commitment to Sustainability and Environmental Regulations:** Responsibility in the implementation of sustainable solutions in naval projects, ensuring compliance with environmental regulations and contributing to the reduction of the ecological impact of maritime operations
- **Multidisciplinary Collaboration in Marine Projects:** Aptitude to work effectively with engineers from various specialties (structural, mechanical, electrical) and other maritime professionals, facilitating the integration of innovative solutions in marine and ocean projects



After completing the program, you will be able to perform your knowledge and skills in the following positions:

1. **Naval Engineer specialized in Ship Design and Construction:** In charge of developing and supervising the design and construction of vessels and marine platforms, ensuring their stability, safety and operational efficiency.
2. **Naval Project Management Engineer:** Responsible for planning, coordinating and supervising marine and ocean engineering projects, from the design phase to the execution and delivery of vessels and offshore platforms.
3. **Naval Propulsion and Power Systems Specialist:** Responsible for designing and optimizing propulsion and energy systems used on vessels and ocean platforms, improving energy efficiency and reducing emissions.
4. **Naval Engineer in Maritime Maintenance Supervision:** Responsible for preventive and corrective maintenance of vessels and ocean platforms, ensuring their operability and prolonging the useful life of systems.
5. **Consultant in Technological Innovation in Naval Engineering:** Specializes in the integration of new technologies in the design and operation of naval systems, with a focus on sustainability, automation and operational efficiency.
6. **Naval Engineering Safety and Compliance Specialist:** Responsible for ensuring that all naval engineering related activities comply with international safety regulations and environmental standards.
7. **Research and Development Engineer in Ocean Engineering:** Dedicated to researching new solutions to optimize maritime operations, designing innovative technologies for ocean platforms and naval artifacts.
8. **Naval Fleet and Maritime Logistics Manager:** Responsible for coordinating the management of vessel fleets, optimizing logistics, maintenance and routes to ensure operational and economic efficiency.

08

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.
The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

"At TECH you will NOT have live classes (which you might not be able to attend)"

The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.

Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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

A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

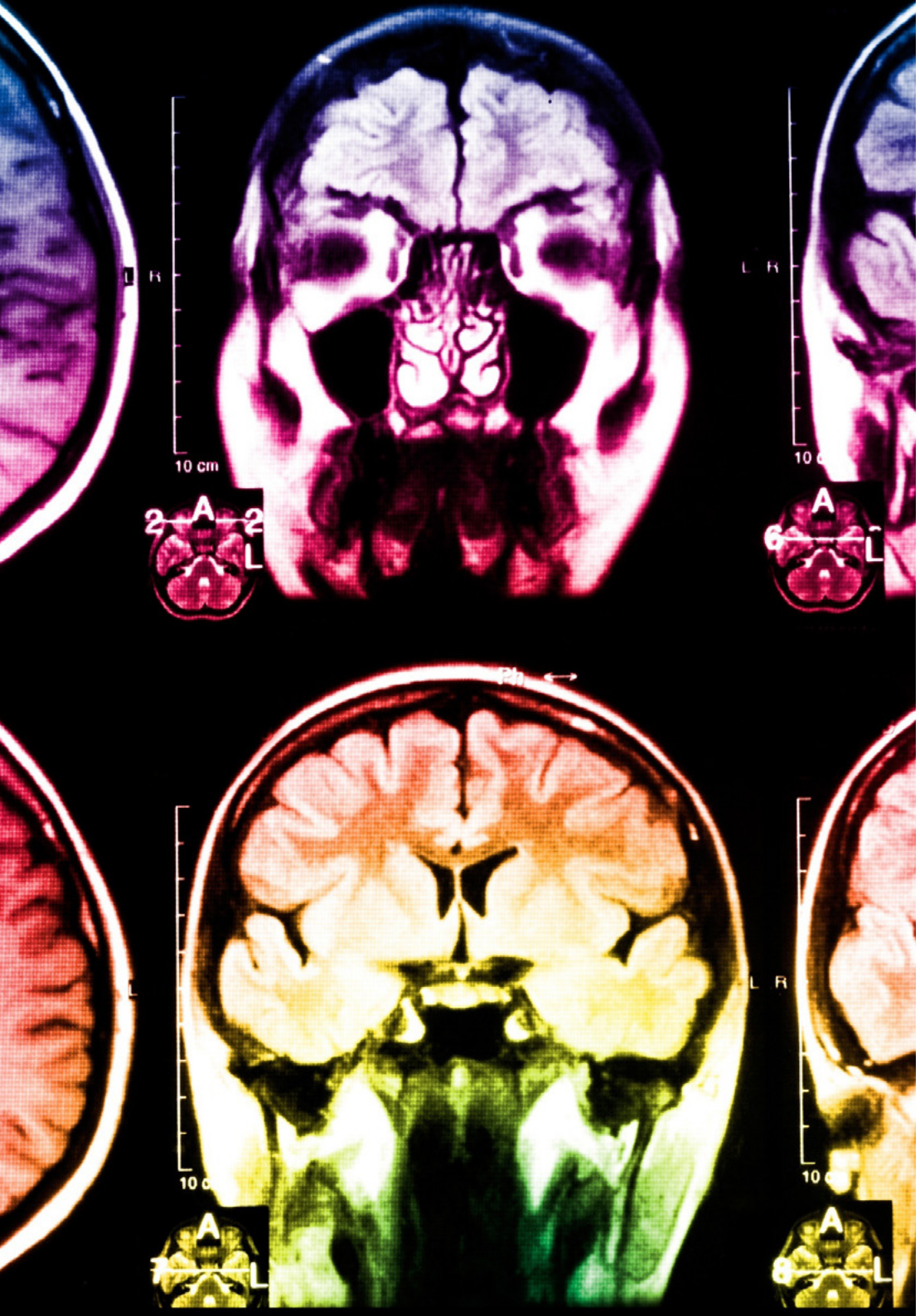
In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.

The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:

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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.

Practicing Skills and Abilities

You 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 within the framework of the globalization we live in.

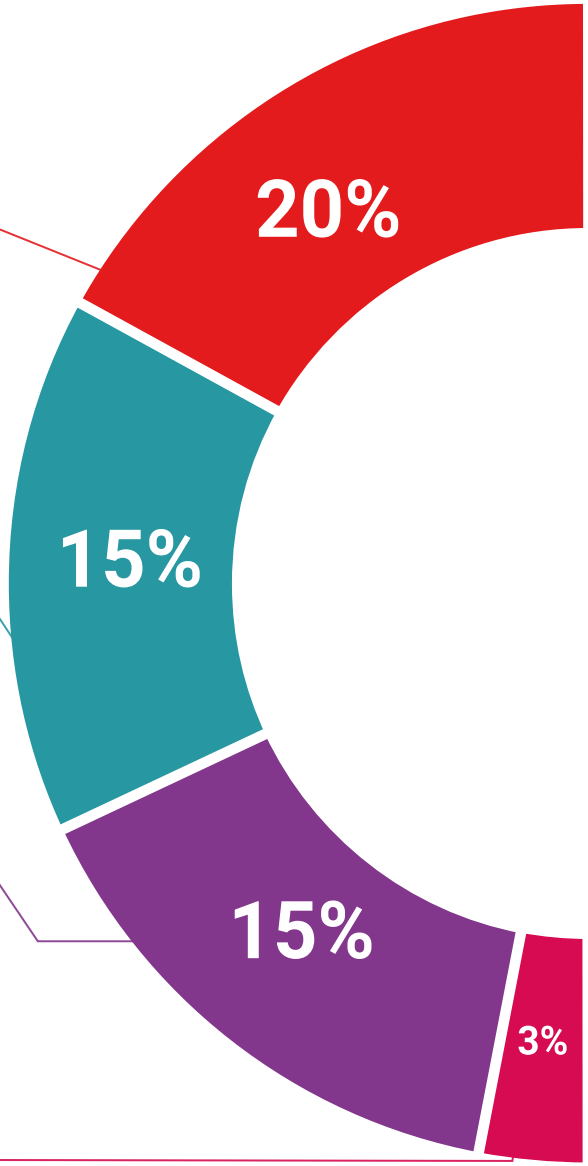
Interactive Summaries

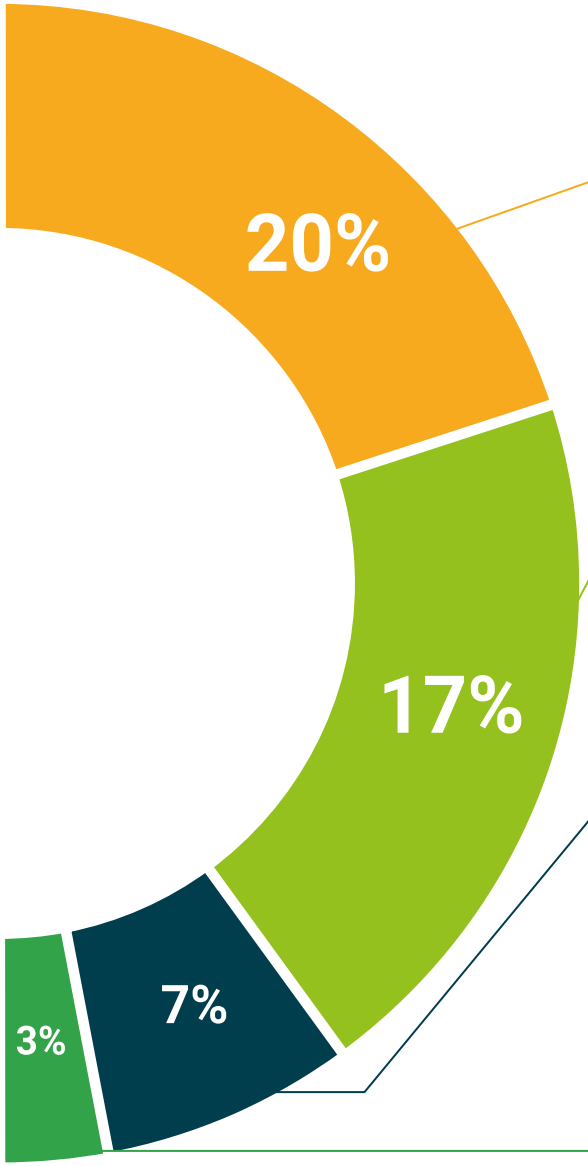
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

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 for future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

09

Teaching Staff

In its firm commitment to provide the most complete and updated university programs in the academic panorama, TECH rigorously selects its teaching staff. For the delivery of this Hybrid Professional Master's Degree, TECH has enlisted the services of the best specialists in the field of Naval and Ocean Engineering. In this way, they have developed various teaching materials that stand out for their high quality and full adaptation to the demands of today's labor market. As a result, students will enjoy an immersive experience that will increase their job prospects.

You will have the support of the teaching team, composed of experienced professionals in Naval and Ocean Engineering"

Management

Ms. López Castejón, María Ángeles

- Director of Naval Projects at Sener Engineering and Systems
- Naval and Oceanic Engineer from the School of Naval Engineering (ETSIN)
- Master's Degree in Occupational Risk Prevention and Safety from MAPFRE
- Occupational Risk Prevention Auditor at the CEF
- Safety Coordinator
- CAP by the University of Seville
- Certified Professional Coactive Coach (CPCC) by CTI
- Certified Professional Coach

Professors

Mr. Martín Sánchez, José Luis

- Naval and Oceanic Engineer
- Director of Naval Projects at Sener Engineering and Systems SA
- Naval and Oceanic Engineer from the Superior Technical School of Naval Engineering
- Master's Degree in Integral Project Management

Mr. Del Río González, Manuel

- Naval Engineer expert in construction materials and structures
- Technical Engineer at CT Engineering Group
- Researcher in the Structures Department of Navantia Motores
- Master's Degree in Naval and Oceanic Engineering from the Polytechnic University of Cartagena
- Master's Degree in Business Administration from the EAE Business School

Mr. Labella Arnanz, José Ignacio

- Naval and Oceanic Engineer Expert in Financial Management
- Director at Grupo Del Monte Servicios
- General Manager at Resa Prezioso Linjebygg
- Commercial Director at Abantia Ticsa SA
- Director of Consulting at Evolve Training and Development
- Production, Purchasing and Maintenance Manager at Pristec AG
- Naval and Oceanic Engineer from the Superior Technical School of Naval Engineering
- Master's Degree in Financial Management from the CEF
- Master's Degree in Accounting from the CEF
- Master's Degree in Commercial and Marketing Management from GESCO and ESIC
- NACE CIP I and II Certified Inspector

Mr. Franco Caballero, Álvaro

- Naval Engineer at Ghenova Engineering
- Assistant Dockmaster at Marina Barcelona 92
- Structural Engineer at Hidramar Shipyards
- Project Engineer at Actanis Project Cargo
- Engineer-Delineator at ALE Heavylift
- Expert in Petroleum and Natural Gas Engineering at Superior Technical School of Mining and Energy Engineers
- Naval and Oceanic Engineer from the Superior Technical School of Naval Engineering

Mr. Fiorentino, Norberto Eduardo

- Naval Engineer Expert in Environmental Management
- Director of of Engineering Projects at Sener Engineering and Systems and Sener Marine
- Director of the Naval Engineering Department at the Technological Institute of Buenos Aires (ITBA)
- Site Manager at Sadmitec Dalkia
- Technical Manager at the fishing company Pesantar. Patagonia and Antarctica
- Chief of Engineering Machinery Section at Ministro Manuel Domecq García Shipyard
- Academic Manager and University Professor
- Fleet Technical Manager
- Naval Engineer from the Technological Institute of Buenos Aires (ITBA)
- Master's Degree in Environmental Management
- Postgraduate Course in Shipbuilding, Repairing and Maintenance. Japan

Ms. De Prado García, Susana

- Expert in Human Resources and Corporate Finance
- Human Resources Director for Spain and Portugal for Eisai Pharmaceuticals
- Human Resources Manager for GSK
- Consultant for Citi - ACC Bank
- Expert in Business Studies from the University of West Scotland
- Expert in Business Studies from the University of Dublin
- Degree in Economics from the University of León

Mr. Sánchez Plaza, Carlos

- Naval and Oceanic Engineer
- Chief Operations Officer at Deoleo SA
- Director of the Integrated Supply Chain at Nueva Pescanova Group
- Head of the Technical Secretariat of the Official College of Naval and Ocean Engineers
- Representative of the Industry Compliance Panel at the Inter-American Tropical Tuna Commission (IATTC-CIAT)
- Technical Director at Tazasa
- Naval and Oceanic Engineer by the Superior Technical School of Naval Engineering (ETSIN)
- Senior Management Program (PADE) from the IESE of the University of Navarra
- Specialist in Fishing and Merchant Fleet Management
- Member of: Bureau Veritas Naval Technical Committee, National Association of Canned Fish Manufacturers (ANFACO), Organization of Associated Producers of Large Freezer Tuna Vessels (OPAGAC)

Mr. Muriente Núñez, Carlos

- Naval and Oceanic Engineer at Alten Spain
- Naval and Ocean Engineer, ALR SPAIN
- Degree in Naval Architecture, Polytechnic University of Madrid
- Master's Degree in Naval and Ocean Engineering, Polytechnic University of Madrid
- Professional Master's Degree in Renewable Energies from from TECH Technological University
- Course on Future in Materials of the Future in Industry, Construction and Technology by the Polytechnic University of Madrid
- Course Vibration Analysis Category II Postgraduate Certificate by Mobius Institute
- Certification in Ultrasound Category I by Mobius Institute
- Certification in ISO 18436-4 Field Lubricant Analysis Category I by Grupo Techgnosis

You will combine theory and professional practice through a demanding and rewarding educational approach"

10

Certificate

This Hybrid Professional Master's Degree in Naval and Ocean Engineering guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Hybrid Professional Master's Degree issued by TECH Global University.

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

This private qualification will allow you to obtain a **Hybrid Professional Master's Degree in Naval and Ocean Engineering** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

TECH is a member of the American Society for Engineering Education (ASEE), a society made up of the greatest international engineering experts in the private sector. The ASEE provides students with multiple tools for their professional development, such as workshops, access to exclusive scientific publications, conference archives and opportunities for professional growth.

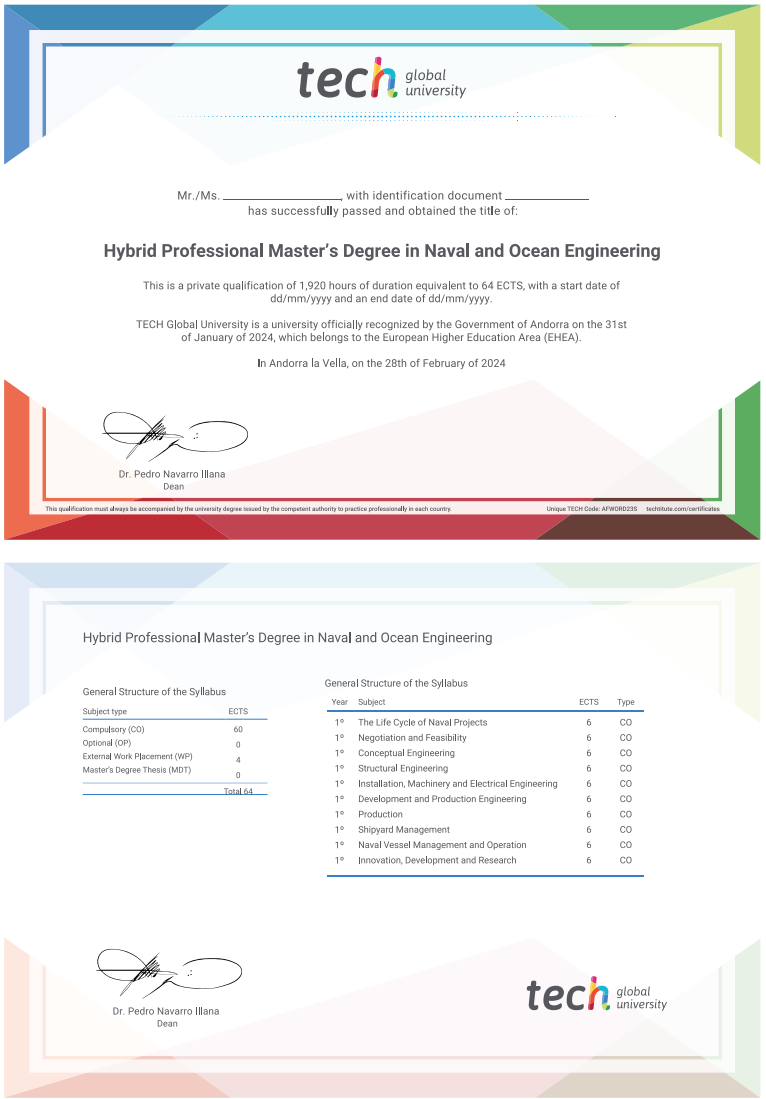
TECH is a member of:

Title: **Hybrid Professional Master's Degree in Naval and Ocean Engineering**

Modality: **online**

Duration: **12 months**

Accreditation: **60 + 4 ECTS**



tech global university

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

Hybrid Professional Master's Degree in Naval and Ocean Engineering

This is a private qualification of 1,920 hours of duration equivalent to 64 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
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

Hybrid Professional Master's Degree in Naval and Ocean Engineering

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	4
Master's Degree Thesis (MDT)	0
	Total 64

General Structure of the Syllabus

Year	Subject	ECTS	Type
1°	The Life Cycle of Naval Projects	6	CO
1°	Negotiation and Feasibility	6	CO
1°	Conceptual Engineering	6	CO
1°	Structural Engineering	6	CO
1°	Installation, Machinery and Electrical Engineering	6	CO
1°	Development and Production Engineering	6	CO
1°	Production	6	CO
1°	Shipyard Management	6	CO
1°	Naval Vessel Management and Operation	6	CO
1°	Innovation, Development and Research	6	CO

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

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Hybrid Professional Master's Degree

Naval and Ocean Engineering

Modality: **Hybrid (Online + Internship)**
Duration: **12 months**
Certificate: **TECH Global University**
Credits: **60 + 4 ECTS**

Hybrid Professional Master's Degree
Naval and Ocean Engineering

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