ORION
TRAINING

SHIP ENERGY EFFICIENCY

Maritime Professionals Course

Course Guide

Orion Training Center for Maritime Professionals
is a Certified Training Institute in accordance with
ABS G-CMET and STCW Regulation I/8

Orion Training Center for Maritime Professionals
is Certified as compliant with the **Quality Management System ISO 9001 by Bureau Veritas**

ISO 9001:2015
BUREAU VERITAS
Certification

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PREAMBLE

Orion Training Center for Maritime Professionals is a unique Vocational Training Provider, on a wide spectrum of fields in the Maritime Industry, for people who seek Certified Training.
Orion Training aims at strengthening the human capital in the Maritime Industry, by increasing its employability and developing its competitiveness in one of the most challenging and capital intensive industries globally.
Drawing from the vast experience of Greek and International Professionals in the shipping sector, Orion Training aims at covering the need for Certified Professional Training in a unique and technologically advanced way.
By delivering on-line, state of the art Courses from Experienced Professionals, in a user-friendly format, we bring knowledge where really needed, when needed.

Visit our website www.oriontraining.eu to see all courses and training options for individuals and Organisations.

SCOPE OF THE COURSE - LEARNING OUTCOMES

Energy efficiency improvements in the maritime industry are being driven by economics, compliance and customer requirements.

- The Shipowner wants to have an energy efficient ship in the market which is attractive for chartering and for cargo owners.
- The charterers and cargo owners want to get to the most sustainable and low-cost transportation for their goods.
- The customer wants to buy products with a low carbon footprint.
- Investors and financing institutions are looking for energy efficient ships for long-term investments.
- Regulators want environmental compliance to the newest regulations.
- The ship operators and vessel crews want to operate the vessels in the most efficient way.

The technological improvements and operational measures to get to the above are available.
The Maritime Industry has been slow to adapt to the changing conditions for the market due to mainstream business practice, but expectations from society and the recent regulatory developments have pushed towards a faster development of energy efficiency in the Maritime Industry.
Regulations have driven the energy efficient design improvements through the EEDI, included the emissions from operation through the EU MRV and IMO DCS and included the management of design and operations in the SEEMP. In 2023, the design index from existing vessels, the EEXI, will be mandatory and vessels in operation will be rated in a carbon emissions rating scheme, where bad rating will affect the vessels' ability to operate.

SHIP ENERGY EFFICIENCY

This course will give the participant an overview of the energy efficiency options that are available in the Shipping Industry today. The course addresses the following key focus topics:

- The energy efficient ship
- The technical efficiency
- The voyage / operational efficiency
- The environmental efficiency
- Target settings and KPIs
- Efficiency benchmarking and improvements

Attendees of the course will achieve knowledge and understanding of:

- The energy efficiency drivers for ship operations and the barriers in the market
- The compliance to existing / coming regulations and the impact of ship operations
- Setting of targets and goals for the energy efficiency of ships
- How to improve the energy efficiency of a ship to position it in the market

BENEFICIARIES

- Producers, Traders or Commodities Brokers and Suppliers
- Ship agents, Shipbrokers
- Shipowners, Charterers, Shippers and Maritime Attorneys
- Purchasers and Technical Managers and Superintendents
- Captains, Chief Engineers and Ship Staff
- Insurance Company Underwriters, Claims Handlers, and members of the legal profession.
- Service providers, Surveyors, Inspectors, Analysts, Technical advisers
- Cargo agents, Freight forwarders, Shipping Industry starters, Cargo Consolidators
- Environmental bodies, NGOs and other professionals

INSTRUCTOR

Dr. Soren Vinther Hansen, Director in VesOPS ApS – Naval Architect and Master Mariner with ongoing professional vessel performance and energy efficiency experience of +15 years. He is active as Director in the performance management company VesOPS, where he delivers performance solutions for Shipping Companies worldwide. He has previously been working within operational and environmental performance for companies like APMoller-Maersk and the American Bureau of Shipping (ABS).
His operational experience has been gained from a long career as a Master Mariner with various Shipping Companies in Denmark. He holds a PhD degree in Naval Architecture from the Technical University of Denmark (DTU) and he also holds an MSc degree in Marine Technology from the Norwegian University of Science and Technology (NTNU).

COURSE STRUCTURE (6 Modules - Case Studies)

Module 1: THE ENERGY EFFICIENT SHIP

Introduction
Course Contents
Module 1 - Contents
Energy Efficiency of Ships
The Energy Consumption
Energy Distribution in a Ship
The Energy Efficient Ship Design
Energy Efficient Ship Operations
Energy Efficiency Improvement Potential
The Market Drivers
The EEDI
The EEXI
Energy Efficiency and the future

Module 2: THE TECHNICAL EFFICIENCY

Module 2 - Contents
Example of Kamsarmax
The Hull Form
Capacity increase, speed and dimensions
Seakeeping Capabilities
Structural Weight
Machinery Technology
Auxiliaries & Electrical Power
Auxiliary Equipment
The EETs
- EET: Category A
- EET: Category B1
- EET: Category B2
- EET: Category C1
- EET: Category C2

Module 3: THE VOYAGE / OPERATIONAL EFFICIENCY

Module 3 - Contents
Voyage Optimization
The Service Speed
Weather Routing
Just in time Arrival
Vessel utilization, draught and trim
Optimum Course control
The Fouling Effect
The Fouling Risk
The Antifouling paint
Hull Cleaning
Propeller Polishing
Hull and Propeller maintenance

Module 4: THE ENVIRONMENTAL EFFICIENCY

Module 4 - Contents
The Ship Design - new ships
EEDI Effects on Ship's design
The Ship Design - existing ships
Design Improvements to meet EEXI
Carbon Intensity Indicators – "CIIs"
Rating Strategy for CII
EU MRV - IMO DCS
Ship Energy Efficiency Management Plan

COURSE STRUCTURE (6 Modules - Case Studies)

Module 5: TARGET SETTINGS AND KPIS

Module 5 - Contents
A Vessel Performance System
Energy Efficiency KPIs
KPI Scores
KPI Target Settings

Module 6: EFFICIENCY BENCHMARKING & IMPROVEMENTS

Module 6 - Contents
Propulsion performance benchmarking
EEDI / EEXI benchmarking
Operational benchmarking
Voyage benchmarking
CII ranking
The complete Fleet Overview

CASE STUDIES:

Case Studies - Contents
Case Study 1
Case Study 2
Case Study 3

CERTIFICATION

Upon successful Course completion, the Certificate is issued and sent automatically to attendees.

COURSE MATERIAL

On-line videos for every module of the course and accompanying PDF slides (videos can be watched as many times as needed online).
(Accompanying PDFs are downloadable and distributed to enrolled attendees).

PREREQUISITES

- Basic knowledge of the maritime industry and insight into ship design and operations

DELIVERY METHOD

Fully on-line and self-paced videos with on-line exams and automated Certificate generation.
Option for registration in webinar or classroom delivery for groups or corporate clients if requested.

CONTACT

For more information on the Courses offered, you may contact: contact@oriontraining.eu

For custom Courses and Professional Training you may contact: sales@oriontraining.eu

Watch our introductory course videos at our Orion Training Center for Maritime Professionals

You Tube Channel and Vimeo Channel.