

# SYLLABUS

## MODULE 1

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### Introduction to the Bunker Industry

The course begins with a thorough explanation of the role the bunkering business plays in the shipping industry, plus the fundamentals and key players operating within the bunkering sector.

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### Course Content

- Introduction to the shipping business and the bunker industry
  - Shipping markets
  - The impact of transport costs
  - Ship types, characteristics, operations and fuel requirements
  - International institutions, regulations and conventions for bunker fuel
  - Introduction to ports, terminals and agents
- Historical and commercial development of the bunker business
  - Growth of independent suppliers and related risk transfer
  - Major operators and national oil company monopolies
- Fuel demand in the shipping industry
  - Nature of bunker supply and demand
  - Recent developments in the market
- The bunker business
- Key bunkering ports and regions
  - Examples including Rotterdam, Singapore, Fujairah and Houston
- Regulatory bodies
  - Jurisdictions and regional variations
  - Examples including Gibraltar Port Authority and Maritime and the Port Authority of Singapore
- Key players and their relationships: suppliers, sellers, brokers, buyers, deliverers, vessel operators, surveyors, charterers and ship managers

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## MODULE 2

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### Marine Fuels: Production, Standards, Specifications and Blending

This module examines the technical and physical nature of marine fuel, the required quality and how it is produced. It also introduces recent and future fuels coming into use.

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#### Course Content

- What are residual and distillate fuels?
  - Different nature of marine fuel, diesel, gas oil, gas/LNG
- Production
- Refining
  - Vacuum distillation
  - Hydroprocessing
  - Cracking
  - Visbreaking
  - Catalytic cracking
  - Desulphurisation
- Blending
  - Components
  - Targets
  - Calculations
  - Flash point
  - Physical processes
- LNG and future fuels
- Marine engines: basic types and operating principles
- Specifications and quality
  - International, national and industry standards and specifications
  - ISO 8217 and CIMAC
  - Fuel quality characteristics
  - Impact of fuel quality on engine performance
  - Contamination and impact
- Sampling and analysis
  - Laboratory test methods

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#### **Bunkering Operations, Procedures and Handling**

Participants will then progress to study operations relating to handling and storage of bunker fuel. This includes systems for keeping it under control on-board, and procedures for managing it at sea and in port.

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#### **Course Content**

- Bunkering locations: in port or at sea
- On-board handling of bunkers
  - Shipboard Oil Pollution Emergency Plan (SOPEP)
  - BIMCO codes
- Delivery procedures
  - Methods of delivery: barge, road/rail tanker, pipeline
  - Preparation
  - Meeting with the supplier
  - Loading procedures
  - Determination of delivered quantity
  - Bunker delivery note
  - Completion of bunkering
- Standards and regulation of delivery: ISO13739:2011, Singapore Standard SS600
- Measurement and testing
- Treatment of fuel on-board ship
  - Transfer systems
  - Centrifugal separators
  - High density fuels
  - Filtration
  - Chemical additives
- Managing difficult fuels on-board ship
  - Bunker quality problems including contamination and impact of poor quality
- Port restrictions
- Liaison and communications
- Audits and surveys
  - Unannounced audits
  - Importance in any subsequent claims
- Customs requisition and receipt forms
- Possible supply issues on quality and quantity
- De-bunkering
  - Process and key considerations

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## MODULE 4

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### Environmental, Health and Safety Regulations and Compliance

This module looks at adverse issues which can occur. Participants will discover international regulations applying to managing bunker fuel, and how to minimise the impact in the event of mishaps (and prevent them happening in the first place).

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### Course Content

- Current and future regulations, conventions and legislation
  - MARPOL Annex VI
  - Regional sulphur restrictions
  - SOLAS, ISM
  - EEDI, SEEMP
  - IMO International Convention on Civil Liability for Bunker Oil Pollution Damage
- Pollution prevention
  - Air: greenhouse gases, particulate matter
  - Sea: oil pollution and emissions from ships
  - Sulphur dioxide and nitrous oxide emissions
- Methods for regulatory compliance for ships and bunker suppliers
  - Emissions trading
  - Oil spill prevention and management
  - The future

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## MODULE 5

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### Commercial and Financial Considerations: Sale and Purchase, Pricing and Hedging

This section focuses on the trading process for ship fuel. Participants will examine each stage of the commercial process, and assess best-practice pricing and purchasing strategies.

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#### Course Content

- Licensing of operators
- Bunker trading terminologies
- The commercial deal
  - Enquiry: quantity, grade, location, date, special conditions
  - Offers: validity, credit, negotiations, counter-offers, acceptance
  - Contract and responsibilities, confirmation, invoice and settlement
  - Avoiding errors and omissions
- Sale and purchase of bunkers
  - Bunker sale/purchase process
  - Strategies for minimising costs
  - Suppliers' terms and conditions
  - Regional variations in sale, purchase and delivery
  - Controlling costs
- Pricing and risk strategies
  - Price history and influencing factors including market structure and increased supplier numbers
  - Pricing mechanisms including escalators in contracts
  - Hedging

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## MODULE 6

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### Legal and Contractual Issues

The course concludes by looking into common legal issues in the bunkering industry. This includes types of contract, necessary documentation and procedures in the event of a claim.

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### Course Content

- Bunker contracts
  - Formation
  - Charterparty terms and clauses
  - Supply contract terms
- Terms and conditions of sale
- Documentation and the importance of collecting evidence
- Why do claims occur?
- Types of claim
  - Quality claims
  - Quantity claims
  - Demurrage/delay and cancellations
- Payment disputes and security
- How to avoid disputes: best practice for all parties
- Dispute resolution
  - Mediation: why is it usually preferable for all parties?
  - Arbitration: when should this action be taken?
  - Court proceedings: the last resort