

WinGD Training Centre  
**Training Course Specification**  
January 2020

UNICDFTHE3

# Theoretical Course UNIC-DF Controlled Engines (3-Day)

Valid for:	RT-Flex50DF X52DF X62DF X72DF
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## TARGET GROUP

This Theoretical Training is aimed for marine engineers, non-engine ratings, operator and technical staff, involved directly or indirectly in operation and supervision of above listed WinGD engine types taking into consideration various bore segments and the common Engine Control System UNIC-DF.

## PREREQUISITES

Applicants should demonstrate theoretical knowledge of 2-stroke slow speed diesel engines and may have certain operational experience on RT-series or similar conventional / common rail engines.

## OBJECTIVE OF THE TRAINING COURSE

Participants will have basic knowledge of WinGD electronically controlled dual fuel engine.

Particular focus is put on the Gas / Fuel system, Engine Control System UNIC-DF and its integration into the vital engine systems, i.e. fuel injection, liquid and gas fuel system, servo oil and cylinder lubrication, etc.

## COURSE LOCATION

By default, training courses are offered at one of the WinGD Training Centres.

Upon request, the course can also be delivered in alternative locations, these include WinGD training partners, ship owners and/or crewing agency premises or even on-board ship. In such cases the content of the course will not differ from courses offered at WinGD Training Centres..

## DURATION OF TRAINING COURSE

Three (3) working days

## CONTENT OF THE COURSE

- Introduction to the WinGD Dual Fuel technology
- Gas safety and properties
- Dual Fuel components
- Hydraulic and pneumatic systems
- FlexLub cylinder lubrication system
- UNIC-DF engine control system

## COURSE PROGRAM

Times may be subject to individual needs. Coffee breaks between lectures will be decided by the trainer.

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### DAY 1

#### COURSE INTRODUCTION

- A short presentation of the course content, safety rules and registration of participants will be outlined.

#### DUAL FUEL CONCEPT DESIGN

- Introduction to the WinGD Dual Fuel and common rail technology.
- Comparison of W-X engines with W-X DF electronically controlled engines.

#### MECHANICAL W-X AND DUAL FUEL COMPONENTS

- Rail unit design and parts
  - Exhaust valve and valve drive system
  - Liquid fuel injection control system / flow limiting valve
  - Supply unit design and parts (fuel & servo oil pumps)
  - Gas Supply System: Gas valve unit, Gas admission valve etc.
  - Crank angle sensing unit
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### DAY 2

#### HYDRAULIC, GAS AND PNEUMATIC SYSTEMS

- Liquid fuel and pilot fuel system
- Servo oil system
- Gas system
- Compressed air system (starting and control air)

#### CYLINDER LUBRICATION SYSTEM

- System layout and interface with UNIC-DF

## DAY 3

## UNIC-DF ENGINE CONTROL SYSTEM

- Control system functionality and interface with propulsion control system
- Hardware modules (CCM, MCM, IOM, power supply system)
- Local Display Unit (LDU)
- Crank angle detection system
- Liquid fuel injection control / Exhaust valve control
- Liquid fuel and servo oil common rail pressure control
- Starting air valve control
- Pilot fuel control
- Gas pressure control
- Knock control

## COURSE EVALUATION AND CLOSING

## COURSE PRICE AND REGISTRATION

For course price and Registration, please visit: <https://training.wingd.com/trainings/>

At commencement of training, each participant will receive handouts in electronic form (PDF format).

**\*please note** that depending on location, different conditions will apply.

**\*Trainings at WinGD Site:**

Included:

- lunch, coffee/tea and water during breaks.
- Daily transport between hotel and training centres.
- Hotel accommodation will be reserved on your behalf at WinGD selected hotels in the vicinity of the training centres.

Excluded:

- Costs for accommodation.
- All travel/extra costs, incl. transport to/from airport.

**\*Trainings at WinGD Training Partners:**

Conditions at Training Partner Training Centres may differ and need to be confirmed directly.

**\*On Site trainings:**

Local arrangements listed above included/excluded will differ for on-site/on-board trainings and will be according prior agreement.

## TRAINING MATERIAL AND TUITION LANGUAGE

English is the basic tuition and training material language.

Other tuition languages may be available upon request at certain locations, with the prior confirmation from WinGD.

## CANCELATION POLICY

There is no cancellation fee if WinGD receives notification of non-attendance fourteen (14) or more calendar days before the course start date.

There is a fifty per cent (50%) of course price cancellation fee if WinGD receives a non-attendance notification between fourteen (14) and seven (7) calendar days before the course start date.

There is a one hundred per cent (100%) of full course price cancellation fee if WinGD receives a non-attendance notification less than seven (7) calendar days before the course start date.

## CERTIFICATION OF INSTRUCTOR

Training is conducted by an Instructor, who is certified according IMO Model Course 6.09 (Train the Trainer) and IMO Model Course 3.12 (Maritime Assessor Course / STCW 95).

## CONTACT

For training inquires and training registration, please contact us via [training@wingd.com](mailto:training@wingd.com) or visit our homepage [www.wingd.com](http://www.wingd.com)