



Hydrodynamics in Ship Design

Course 2019

This course is intended for both existing professional staff and for newcomers in the maritime industry. Participants should have a university degree in naval architecture, ocean engineering, equivalent education or experience.

When	March 25 – 29 (5 days) 2019
Where	MARIN Wageningen, The Netherlands
Costs	€4.000,00 (including lunches and course dinner on Thursday)
Registration	www.marin.nl/courses

Hotel De Wageningsche Berg
www.hoteldewageningscheberg.nl
€ 91,50 per night including breakfast

Hotel WICC
www.wicc.nl
€ 82,50 per night including breakfast

For more information please contact courses@marin.nl

For conditions see page 2



Contact

Application

To ensure your participation (number of participants is limited), please fill in the registration form at

www.marin.nl/courses or send an e-mail to courses@marin.nl.

Payment

Fee is to be paid upon receipt of invoice with a deadline of at least 14 days prior to the first day of the course.

Payment made payable to:
MARIN, The Netherlands;
Account number 53 93 39 156,
IBAN number
NL77ABNA0539339156

Conditions

Venue

The course will be held at MARIN, Haagsteeg 2, Wageningen, The Netherlands or nearby MARIN (5 minutes walk from MARIN).

Accommodation

Hotel accommodation is not included in the course fee. However, MARIN intends to make reservations at a special course rate. Hotel WICC is 10 minutes walk from MARIN. Hotel Wageningsche Berg is 20 minutes by bike or 10 minutes by taxi or car (transfers are not included in the course fee).

Documentation

The course notes contain the full set of information as presented during the course. The course notes will be made available on paper. Strict copyrights apply to the course notes and they shall not be made available or sold to other parties.

Number of participants

The course is subject to a minimum number of participants (12) and a maximum (25). Admittance to the course will be on first come first served basis. The following group reduction is valid:

No. Participants	Reduction	Price	Reduced price
1	0%	€ 4,000.00	€ 4,000.00
2	0%	€ 8,000.00	€ 8,000.00
3	10%	€ 12,000.00	€ 10,800.00
4	10%	€ 16,000.00	€ 14,400.00
5	10%	€ 20,000.00	€ 18,000.00
6	20%	€ 24,000.00	€ 19,200.00

Payment

Fee to be paid upon receipt of invoice at least two weeks before the first day of the course concerned. Payment must be by cheque or international money order, made payable to: MARIN, The Netherlands; Account number 53 93 39 156, IBAN number NL77ABNA0539339156, ABN-AMRO Bank N.V., Amsterdam.

Cancellations

In case of a cancellation by the participant, the following rules apply:

- Cancellation within 2 weeks of the start of the course: 100% of the course fee.
- Cancellation within 1 month of the start of the course: 30% of the course fee.
- In other cases the cancellation is free of charge.

In case MARIN has to cancel the course in view of insufficient participation, the entire fee will be refunded.

Application

To ensure your participation (number of participants is limited), please fill in the registration form on www.marin.nl/courses.

Application closing date: March 7, 2019

Course program “Hydrodynamics in Ship Design” 2019

Time	MONDAY 25 MARCH	TUESDAY 26 MARCH	WEDNESDAY 27 MARCH	THURSDAY 28 MARCH	FRIDAY 29 MARCH				
8:45	Course kick-off 8:45 - 9:15	Coffee 8:45 - 9:00	Coffee 8:45 - 9:00	Coffee 8:45 - 9:00	Coffee 8:45-9:00				
9:00									
9:15	Introduction 9:15 - 9:45	Fundamentals of ship wave making 09:00 - 10:00	Evaluation Case study 9:00 - 9:30	Evaluation Case study 9:00 - 9:30	Manoeuvring criteria 9:00 - 9:45				
9:30									
9:45	Still water Ship Hydrodynamics 9:45 - 11:00	Break 10:00 - 10:15	Steady viscous flows around ships 9:30 - 10:30	Seakeeping, hydrodynamics and tools 9:30 - 10:45	Hull forms and manoeuvrability 9:45 - 10:30				
10:00									
10:15			Practical aspects on wave making in hull form design 10:15 - 12:00	Break 10:30 - 10:45	Break 10:30-10:45				
10:30									
10:45									
11:00	Hull forms an introduction 11:00 - 12:15	Lunch 12:00 - 12:45	Role of viscous flow Calculations in ship design 10:45 - 12:00	Break 10:45 - 11:00	Tools for manoeuvring predictions in design 10:45 - 11:30				
11:15									
11:30				Introduction Viscous flow case	Seakeeping, hydrodynamics and tools 11:00 - 12:30	Case study Seakeeping 11:30 - 12:30			
11:45									
12:00									
12:15	Course picture 12:15 - 12:30								
12:30	Lunch 12:30 - 13:15	Case study on wave making/ hull form design 12:45 - 14:00	Lunch 12:15 - 13:00	Lunch 12:30 - 13:15	Closing session 12:30 - 13:00				
12:45									
13:00									
13:15	Intr. in propulsors, types, basic principles efficiency 13:15 - 14:00	Break 14:00 - 14:15	Viscous flow case study 13:00 - 14:15	Full scale trials & EEDI trial requirements 13:15 - 14:15	Lunch 13:00 - 13:30				
13:30									
13:45									
14:00	Propulsor ship interaction 14:00 - 15:15	Cavitation, vibrations and noise 14:15 - 15:15	Basics of RANS calculations 14:15 - 15:15	Demonstration BT 14:15 - 16:15	Feedback				
14:15									
14:30									
14:45									
15:00									
15:15	Break 15:15 - 15:30		Break 15:15 - 15:30						
15:30	Hull form design strategy incl. propulsion aspects 15:30 - 16:30	An introduction to Propeller design 15:15 - 16:30	Power prediction by statistical methods 15:30 - 16:15	Excursion to MARIN Facilities 16:15 - 17:00					
15:45									
16:00									
16:15									
16:30	Still water experiments & EEDI requirements and prediction 16:30 - 17:30	Feedback	Demo DESP 16:15 - 17:15	Feedback					
16:45									
17:00									
17:15									
17:30	Feedback								
17:45									
18:00	Welcome Drink in Cafe Wageningen 18:00 - 19:30			Free time					
18:15									
18:30									
18:45									
19:00									
19:30									
20:00				Course Dinner: restaurant Drinks & Bites 19:00 - 23:00					