
TU Delft
Delft University of Technology
Master Marine Technology
PROGRAM
Dr. H.C. Seyffert
Director of Studies MT MSc

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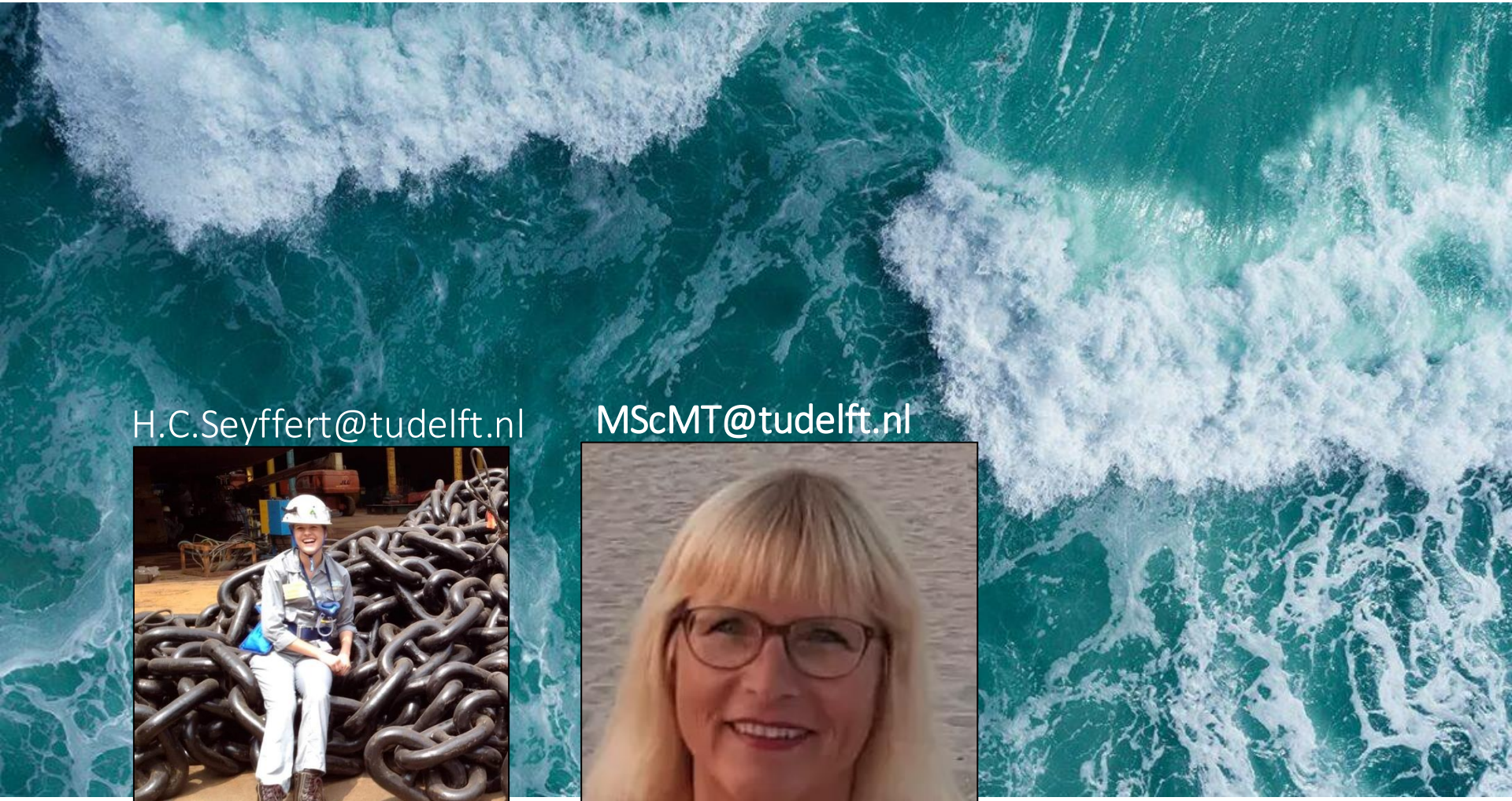
Anouk de Goede-Oosterhof - Assistant Master Coordinator



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HMD
Shipbuilding Timelapse
World's 1st Methanol Cargo Vessel
MAERSK


MSC BUSAN
M S C


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Blue Maritime BV
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Promanent b.v.
Schoonhover
Netherlands Maritime
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Van Halteren
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BMW ORACLE Racing
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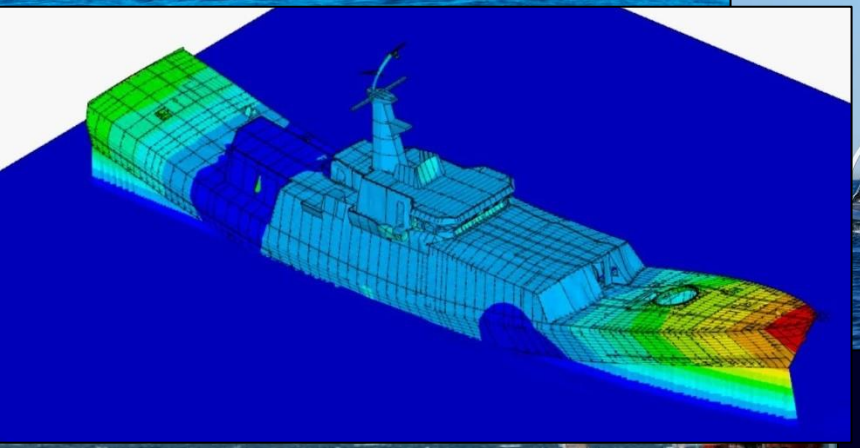
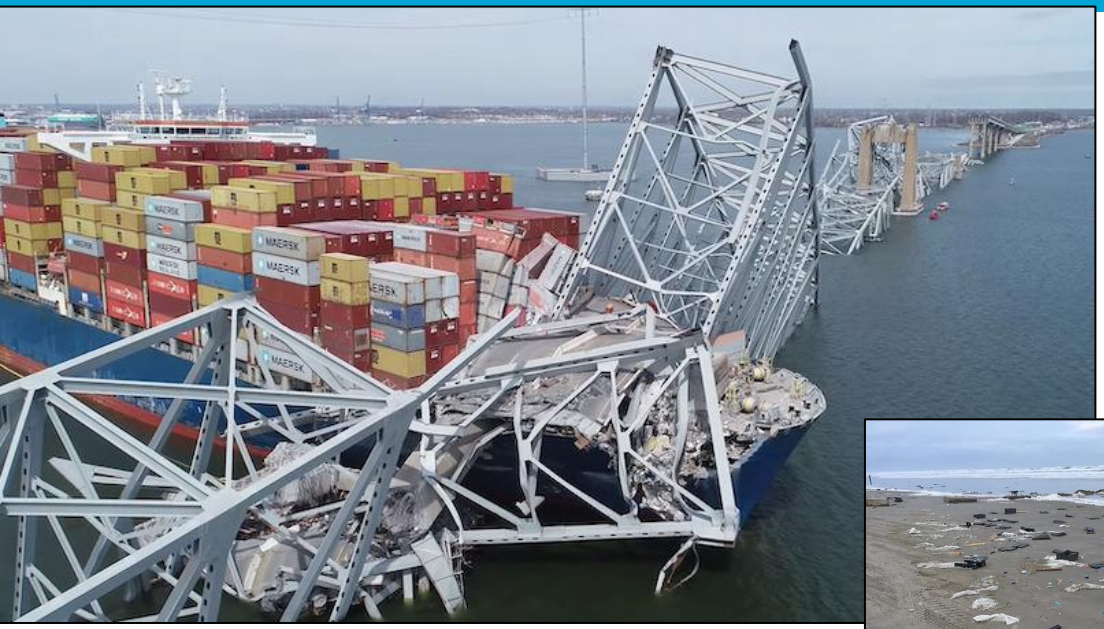



BBC Chartering

Challenges remain…



5 specializations

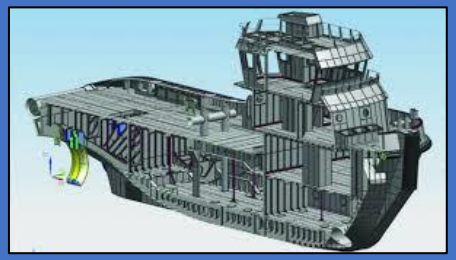
TU Delft

Faculty ME

Marine Technology (MT)

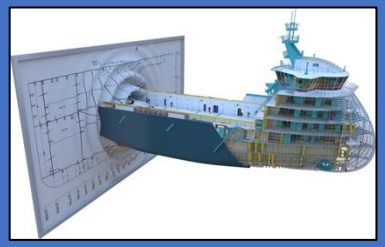
Ship Hydromechanics (SH)

Ship and Offshore structures (SAOS)



Maritime Operations & Management (MOM)

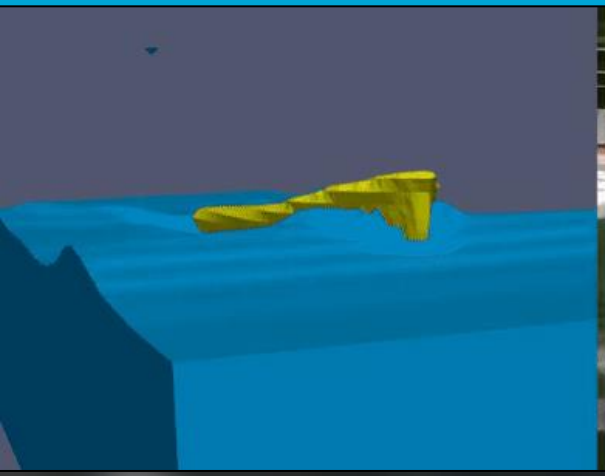
Ship Design (SD)

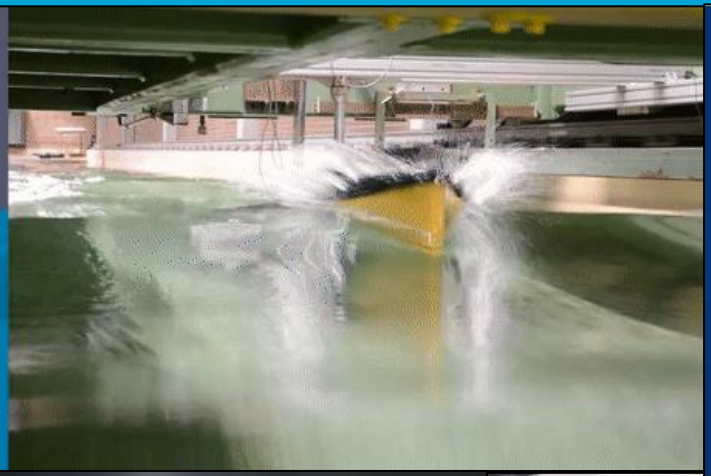


Marine Engineering (ME)

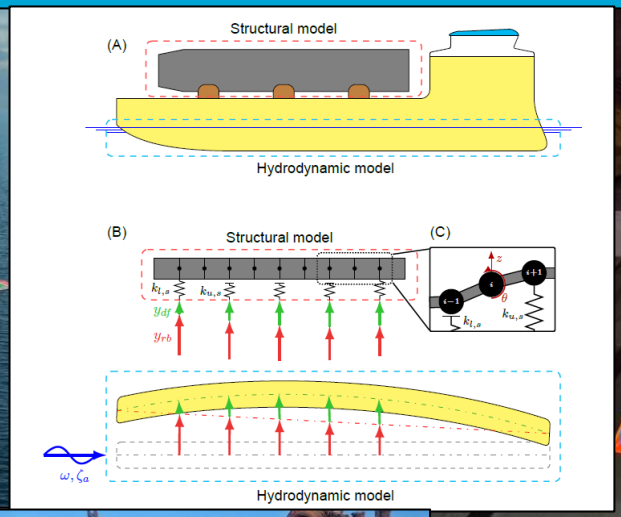
Ship Hydromechanics (SH)

TU Delft



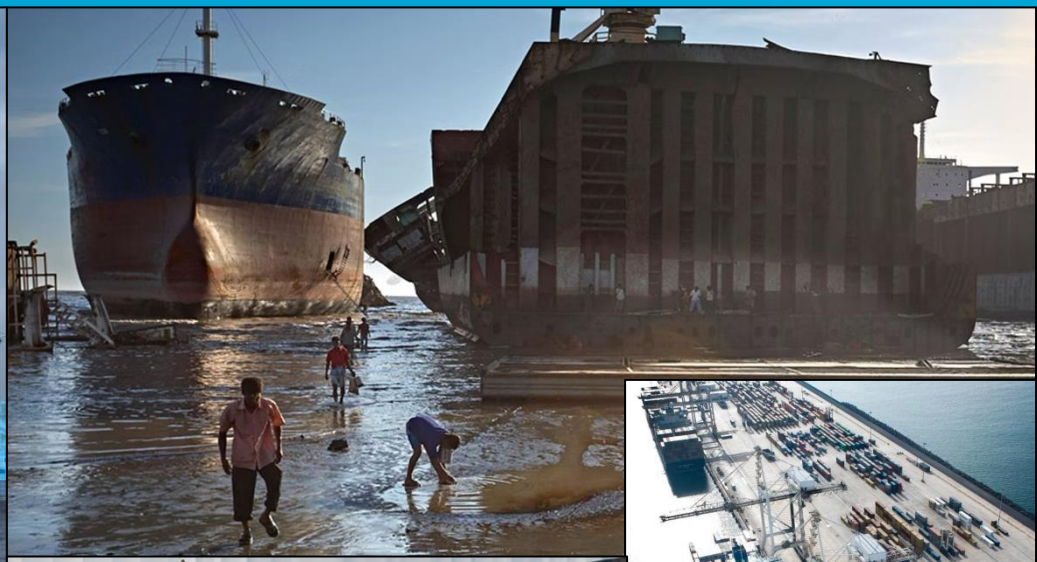


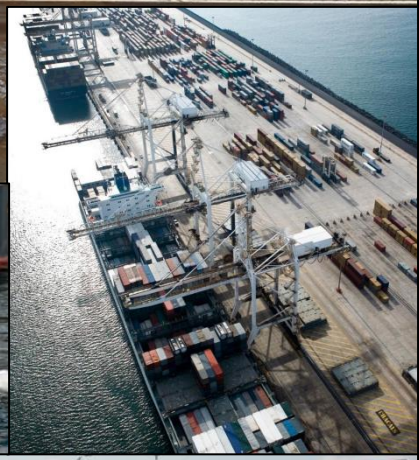
Ship and Offshore Structures (SAOS)



Maritime Operations & Management (MOM)

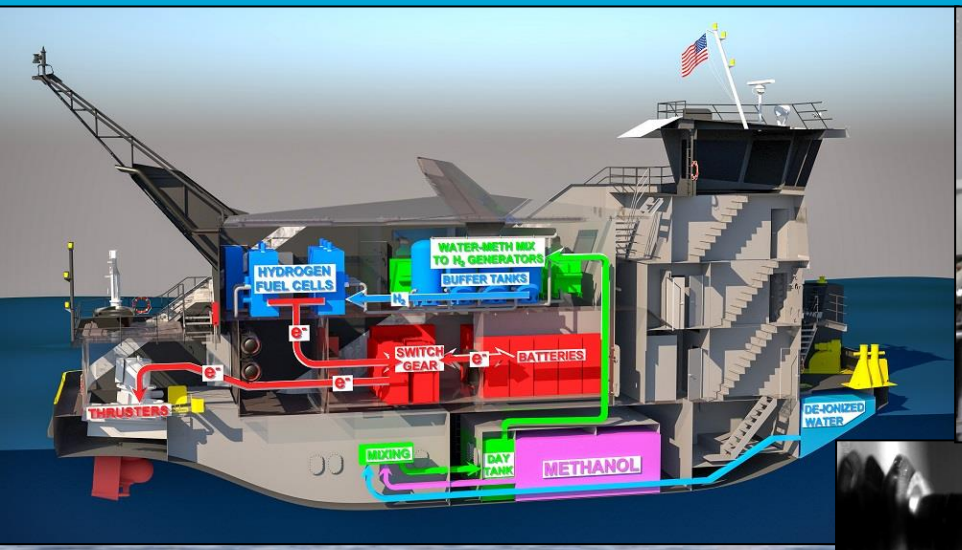
TU Delft

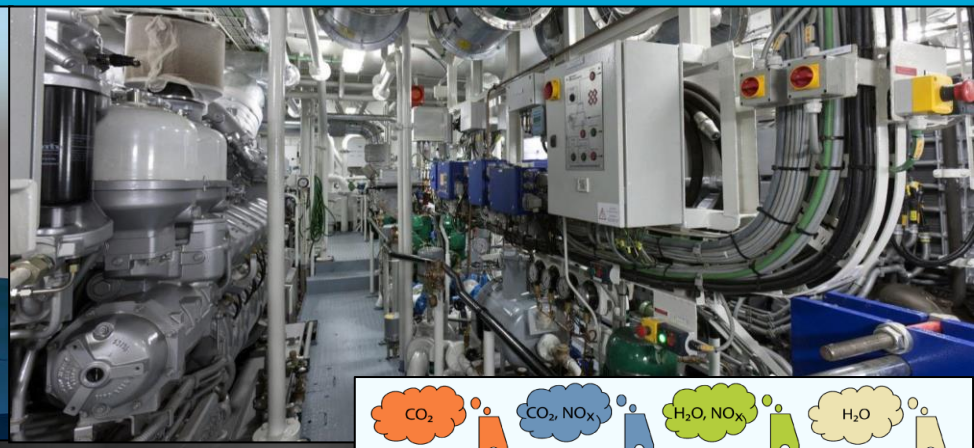


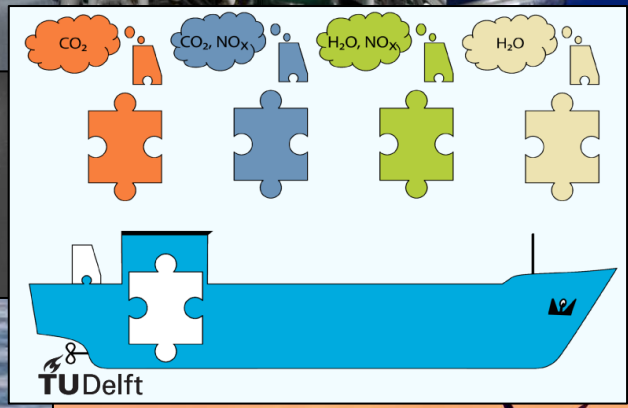


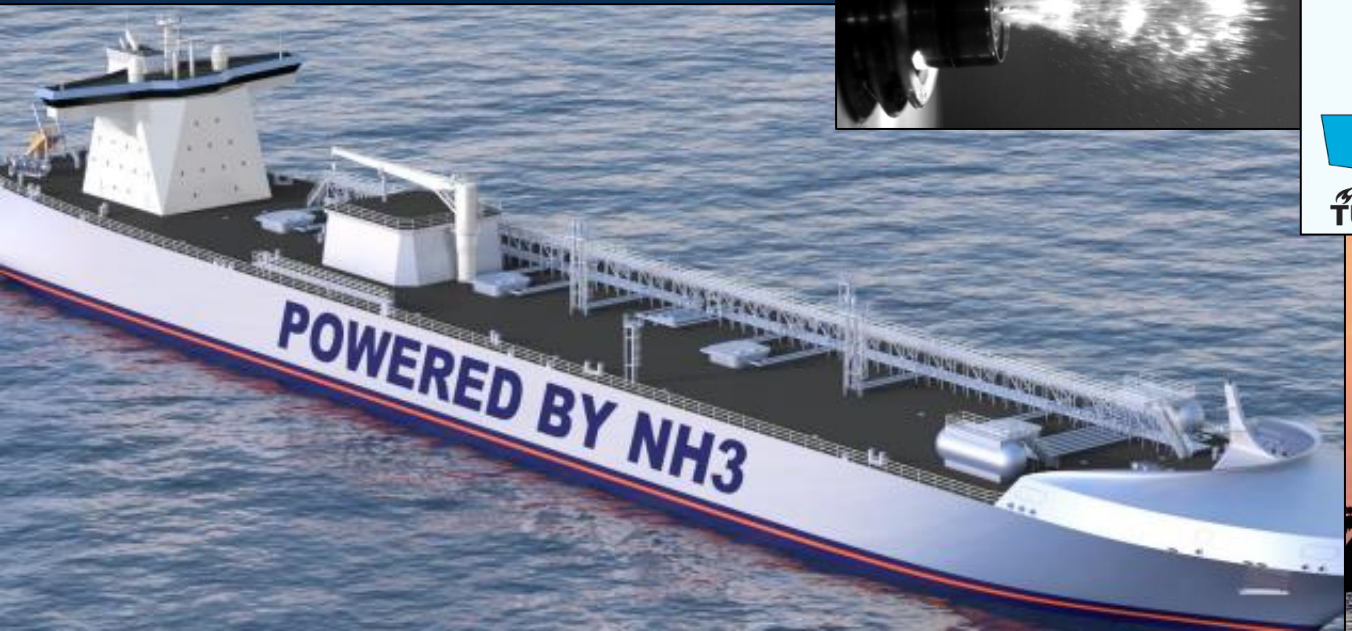
Ship Design (SD)

Marine Engineering (ME)









MSc program – **CHOICES!**

- 5 obligatory MT courses (25 ECTS)
- 5 star-elective MT courses (about 25 ECTS)
  - Minimum 3 courses from a specific specialization
- For the rest - elective courses (any faculty, MSc level)
- Study abroad, JIP, individual research assignment…
- 45 ECTS graduation (10 literature review + 35 thesis ECTS)

Obligatory courses

- 5 obligatory courses, the “best of” from each section
  - Ship Hydromechanics (SH)
  - Ship and Offshore Structures (SAOS)
  - Ship Design (SD)
  - Maritime Operations & Management (MOM)
  - Marine Engineering (ME)
- Plus, Colloquium points (presentations, lunch lectures, etc.)

MT54010-20 T3	Student Colloquia
MT44021	Motions & Loading of Structures in Waves
MT44030	Advanced Mechanics of Maritime Structures
MT44035	Design of Complex Specials
MT44040	Maritime Finance, Business & Law
MT44050	Fundamentals of Marine Engineering

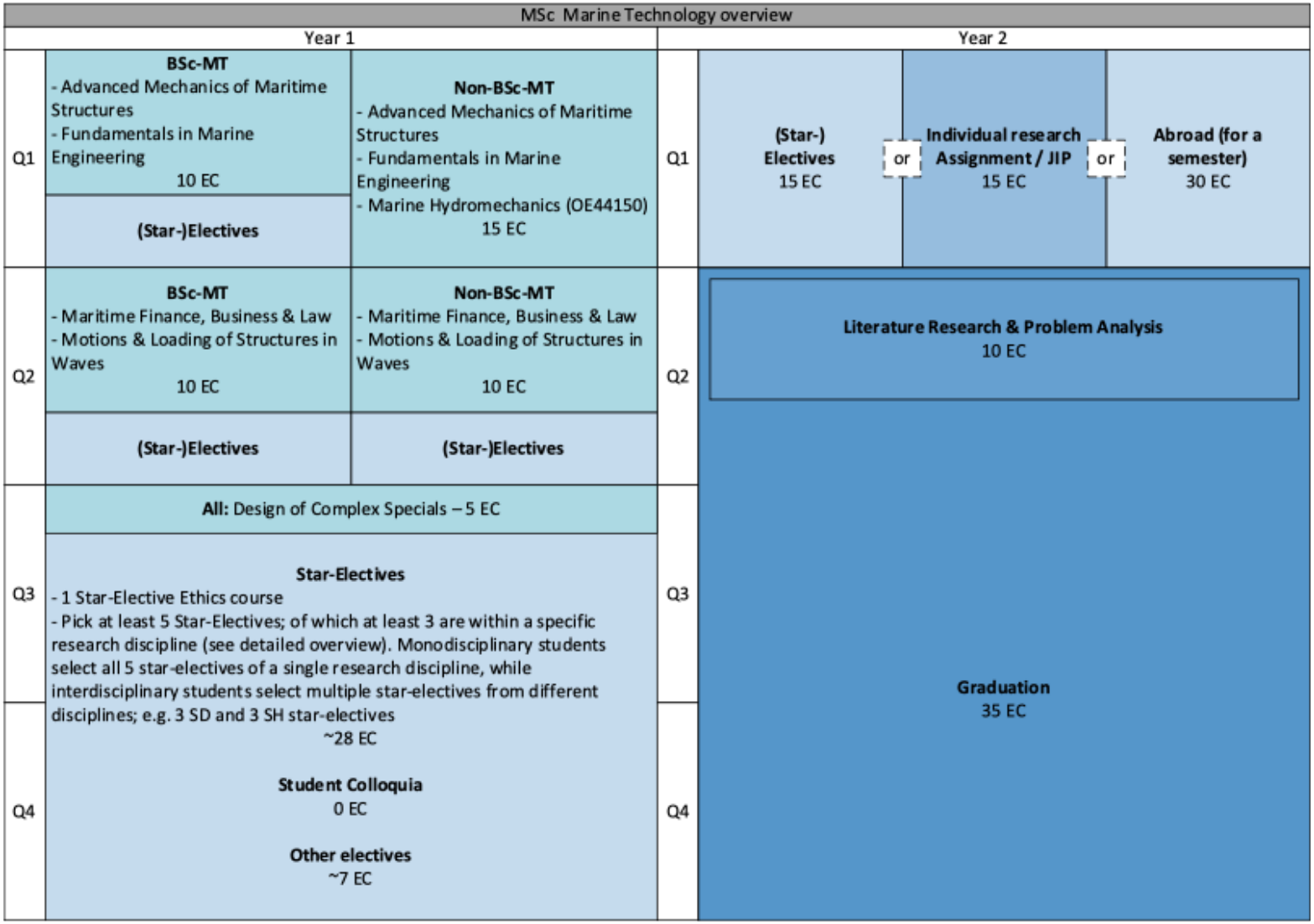
Star Electives - choose your specialty

Maritime Operations & Management (MOM)
Ship Design (SD)
Marine Engineering (ME)
Ship Hydromechanics (SH)
Ship and Offshore Structures (SAOS)

Code	Course	Docent	MOM	SD	ME	SH	SAOS
OE44150	Marine Hydromechanics	Fiscaletti	*	*	*	*	*
MT44070	Shipping Management	van Hassel	*	*			
ME44311	Advanced Operations and Production Management	Napoleone	*				
ME44206	Quantitative Methods for Logistics	Atasoy / Duinkerken	*	R			
ME44305	System Analysis and Simulation	Duinkerken / Schulte	*	R	R		
MOT112A	Economic Foundations	Storm / Naastepad	*				
MT44095	Design of Advanced Marine Vehicles	Gelling	R	*			
MT44001	Mechatronics in MT	Coraddu		R	*	*	
MT44006	Future Marine Propulsion System	Grevink / de Vos	R	*	*	R	
MT44100	Internal Combustion Engines A	Boersma			*		
MT44105	Internal Combustion Engines B	de Vos			*		
ET4117	Electrical Machines and Drives	Chandra Mouli			*		
MT44025	Numerical Ship Hydrodynamics	Weymouth		R		*	
MT44061	Advanced Course in Resistance and Propulsion	Terwisga	R	*	R	*	
ME45042	Advanced Fluid Dynamics	Tam				*	
MT44090	Fluid - Structure Interaction in Maritime Structures	Grammatikopoulos				*	*
MT44010	Non-metallic materials in Maritime Structures	Pahlavan		*			*
MT44085	Ultimate Strength of Maritime Structures	Walters		R			*
OE44085	Fatigue in Offshore Structures	den Besten					*
MS43805	Metallic Materials in Maritime Structures	Gonzalez Garcia / Petrov					*

R = Recommended elective course; a course that is always allowed in the individual study program

Course Program



25 ECTS electives → focus area!

- **Offshore renewables** (OE44170 Offshore Renewables Technologies, SET3014 Renewable Energy, …)
- **Floating Wind** (AE4T40 Airborne Wind Energy, AE4W31 Floating Offshore Wind Energy, AE4W30 Wind resource and wind farm yield, SET3014 Renewable Energy, AE4W02TU Introduction to Wind Turbines: Physics and Technology)
- **Fluid Dynamics** (AE4136-24 CFD 2: discretization techniques, AE4139 CFD 3: Large Eddy Simulation, AE4180 flow measurement techniques, ME45026 Introduction to Multiphase flow, ME45030 Turbulence)

25 ECTS electives → focus area!

- **Sustainable Propulsion** (AE4263 Modeling, Simulation and Application of Propulsion and Power Systems, ME44210 Drive & Energy Systems, SET3135 Fuel Cell Systems, ME45203 Electrolysers, Fuel Cells, and Batteries, ME45001 Advanced Heat Transfer, ME45160 Advanced Applied Thermodynamics)
- **Structural Health & Monitoring** (AE4ASM100 Mechanics and Structural health monitoring of composite structures, AE4ASM108 Experimental Techniques and NDT, AE4ASM103 Functional Coatings, AE4ASM109 Mechanics and Structural Health Monitoring of Composite Structures, MS43120 Corrosion Engineering)

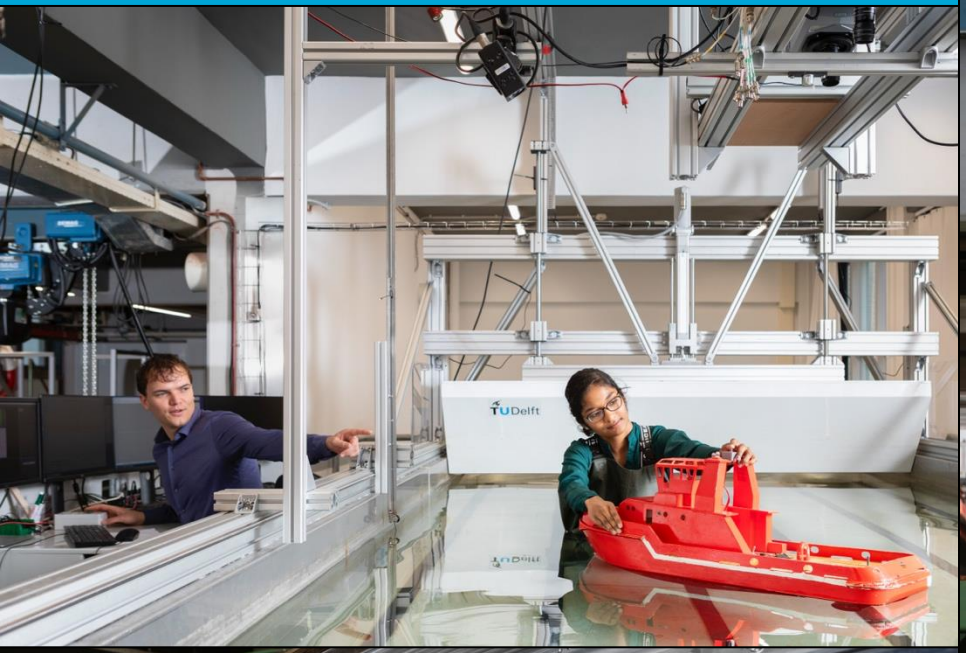
25 ECTS electives → focus area!

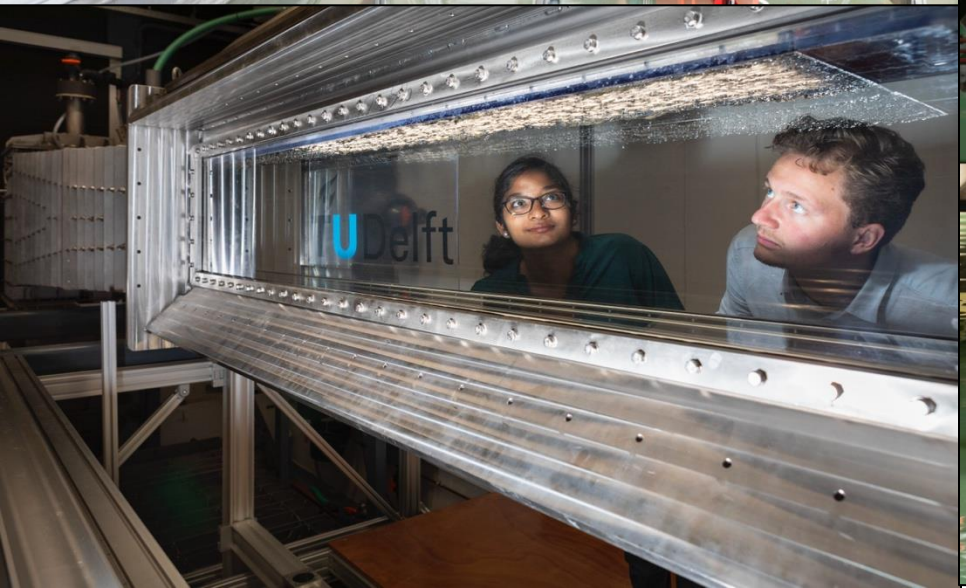
- **Numerical Methods** (AE4136-24 CFD 2: Discretization Techniques, AE4139 CFD 3: Large Eddy Simulation, AE4138-18 CFD 4: Uncertainty Quantification, WI4014TU Numerical Analysis, AE4117 Fluid-Structure Interaction, OE44185 Numerical Methods for Offshore and Dredging Engineering)
- **Big Data/ AI** (DSAIT4010 Probabilistic AI and Reasoning, DSAIT4115 Deep Reinforcement Learning, ME44312 Machine Learning for Transport and Multi-Machine Systems)

25 ECTS electives → focus area!

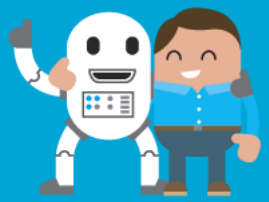
- **Logistics** (ME44300 Multi-Machine Coordination for Logistics, SEN122A Statistical Analysis of Choice Behaviour, ME44220 Intelligent Operations and Maintenance for Transport and Production, ME44300 Multi-Machine Coordination for Logistics, ME44125 Reliability and Maintenance of Transport Equipment)
- **Experimental techniques** (ME46007 Measurement Technology, ME45220 Experimental Techniques in Fluid Mechanics, AE4185 Fluid Flow Data Processing and Visualization, AE4180 Flow Measurement Techniques, AE4ASM108 Experimental Techniques and NDT)

Facilities





Contact information



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  - 34B-4-260 / 34-B-1-250
- https://www.tudelft.nl/en/education/programmes/masters/marine-technology/msc-marine-technology/

My own research…

- Inverse sea state estimation from measured vessel responses
- Novel time-domain framework for real-time estimation using Adaptive Kalman Filtering
  - Platform for fusion with other sensor/ info sources (radar, strain gauges)
- Monitoring structural condition for implications on ship risk profile
- Estimating remaining usable design life and probability of failures
- Adaptive screening approach for converged statistics of extreme responses (how to find & design dangerous waves)