

Course title	Code No.
<b>Water Management aboard Ships</b>	--

Semester	Course status (mandatory or optional)
<b>III.</b>	<b>Mandatory</b>

Lecturer(s)	E-Mail
<b>Prof. Dr.-Ing. Wiktoria Vith</b>	<b>wiktoria.vith@hs-flensburg.de</b>

Contact hours per week	Credit Points	Workload (hours per semester)		
		Presence	Self-study	
4	6	<b>Lecture</b>	60	120
		<b>Seminar</b>	-	-
		<b>Practice</b>	-	-
		<b>Laboratory</b>	-	-
		<b>Other</b>	-	-

Media (equipment)	Teaching aids (literature, group work ...)
<ul style="list-style-type: none"> <li>- computer</li> <li>- projector</li> <li>- board</li> <li>-</li> </ul>	-

Enrolment requirements and entry competences required for the course
<ul style="list-style-type: none"> <li>- proficiency in English</li> <li>-</li> </ul>

Conditions for permission to take the exam
-

Assessment methods and criteria
- Written Exam 2 h

Learning outcomes at the program level to which the course contributes
<p>On completing this module, students will have an understanding of different water systems and plants being operated on ships. Students know legally required water specification, treatment methods and can assess the effect of water quality either regarding the safety of ship operation or environmental responsibility caused by water emissions.</p>

## Learning Outcomes

### Professional competence

The student has the ability to organize and assess the water pipe system aboard under consideration of regulations for use and treatment as much as environmental standards.

### Key skills

The student has the ability to

- recognize and define water emissions of ships;
- know the requirements for the use of water aboard ships;
- understand the prevailing treatment technologies to produce the required water specification;
- implement the current legal requirements on maritime environment protection (i.e. MARPOL etc.) on waterborne emissions
- demonstrate an understanding of the correlation of the environmental obligations of the ship operator and the operation of water systems and plants aboard.

## Applicability in other courses/programs

## Content

This course gives an overview of water cycle management on ships. The contents of the course are subjected to theoretical and practical knowledge (laboratory works) of different water cycles, their regulatory background (law) and used treatment technologies on ships particularly in the following areas:

1. Ballast Water Treatment
2. Scrubber Water Treatment
3. Drinking Water Treatment
4. Boiler Water Treatment

## 5. Sewage Water Treatment

### Literature

- Matej David, Stephan Gollasch: Global Maritime Transport and Ballast Water Management: Issues and Solutions; Springer Verlag 2014
- J.D. Edwards Industrial Wastewater Treatment; CRC Press 2019

### Amendment Log

Version No.:	Date:	Changes:	Name:
1	17/07/2020		Vith