

Exclosure to Subject Specific Regulations  
 from 18.07.2018  
 for Master-Programme Energietechnik  
 at TUHH  
 Programme Director: Prof. Arne Speerforck  
 Total: 120 CP  
 Number of Specilisations to choose: 1

# TUHH

## Course Scheme Master Energy Systems (ENTMS)

Consolidated Version  
 for Study Cohort: WiSe21/22  
 en\_head\_sda  
 and Approval of Chair from:  
 04.05.2022  
 Replaces Version from: 17.03.2021  
 In Force on: 01.10.2018  
 Out of Force on: 30.09.2024

Das offene Wahlpflichtmodul "Ausgewählte Themen der Energiesysteme" kann entweder im Umfang von 6 (Option B) oder 12 Leistungspunkten (Option A) belegt werden. Es darf jedoch nicht mehrfach belegt werden.  
 Das offene Wahlpflichtmodul "Ausgewählte Themen des Schiffsmaschinenbaus" kann ent-weder im Umfang von 6 (Option B) oder 12 Leistungspunkten (Option A) belegt werden. Es darf jedoch nicht mehrfach belegt werden.  
 Information regarding the lectures are available in the TUHH modul manuals as well as in the course catalogue.

| Re-com. Term  | Module  |          |                      |           |          |           | Examination |   |                     | Course Work |                  |           |
|---|---|----------|----------------------|-----------|----------|-----------|-------------|---|---------------------|-------------|------------------|-----------|
|   | Module Name (German / English)  | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4)      | Grade                                     | Examination Form(3) | Compulsory  | Course Work Type | Bonus (%) |
| <b>Core Qualification</b> Compulsory Courses: 30 LP Optional Courses: 18 LP |   |          |                      |           |          |           |             |   |                     |             |                  |           |
| 1   | Praktikum Energietechnik / Practical Course Energy Systems  | DE       | Prof. Speerforck     | M-21      | C        | CM        | 6           | N   | SA                  |             |                  |           |
| 1   | Finite-Elemente-Methoden / Finite Elements Methods  | EN       | Prof. von Estorff    | M-16      | EC       | CM        | 6           | Y   | KL                  | N           | MT               | 20        |
| 1   | Modellierung und Optimierung in der Dynamik / Modelling and Optimization in Dynamics  | DE       | Prof. Seifried       | M-13      | EC       | CM        | 6           | Y   | MP                  |             |                  |           |
| 1   | Strömungsmechanik und Meeresenergie / Fluid Mechanics and Ocean Energy  | DE       | Prof. Schlüter       | V-5       | EC       | CM        | 6           | Y   | KL                  | Y           | GD               | 10        |
| 1   | Technische Schwingungslehre / Vibration Theory  | DE / EN  | Prof. Hoffmann       | M-14      | EC       | CM        | 6           | Y   | KL                  |             |                  |           |
| 1   | Technischer Ergänzungskurs Kernfächer für ENTMS (laut FSPO) / Technical Complementary Course Core Studies for ENTMS (according to Subject Specific Regulations) |          | NN                   | M-21      | EC       | OM        | 6           | according to Subject Specific Regulations |                     |             |                  |           |
| 1   | Theorie und Entwurf regelungstechnischer Systeme / Control Systems Theory and Design  | EN       | Prof. Werner         | E-14      | EC       | CM        | 6           | Y   | KL                  |             |                  |           |
| 2   | Aufbau und Eigenschaften der Faser-Kunststoff-Verbunde / Structure and properties of fibre-polymer-composites   | DE / EN  | Prof. Fiedler        | M-11      | EC       | CM        | 6           | Y   | KL                  |             |                  |           |
| 2   | Boundary-Elemente-Methoden / Boundary Element Methods   | EN       | Prof. von Estorff    | M-16      | EC       | CM        | 6           | Y   | KL                  | N           | MT               | 20        |
| 2   | High-Order FEM / High-Order FEM   | EN       | Prof. Düster         | M-10      | EC       | CM        | 6           | Y   | KL                  | N           | RE               | 10        |
| 2   | Numerik gewöhnlicher Differentialgleichungen / Numerical Treatment of Ordinary Differential Equations   | DE / EN  | Prof. Ruprecht       | E-10      | EC       | CM        | 6           | Y   | KL                  |             |                  |           |
| 2   | Numerische Methoden der Thermofluiddynamik II / Computational Fluid Dynamics II   | DE / EN  | Prof. Rung           | M-8       | EC       | CM        | 6           | Y   | MP                  |             |                  |           |

|   |   | Module   |                      |           |          |           | Examination |  |                     |            | Course Work      |              |  |
|---|---|----------|----------------------|-----------|----------|-----------|-------------|--|---------------------|------------|------------------|--------------|--|
| Re-com. Term  | Module Name (German / English)  | Language | ModuleResponsability | Institute | C/EC (1) | CM/OM (2) | CP (4)      | Grade  | Examination Form(3) | Compulsory | Course Work Type | Bonus (in %) |  |
| 2   | Optimale und robuste Regelung / Optimal and Robust Control  | EN       | Prof. Werner         | E-14      | EC       | CM        | 6           | Y  | MP                  |            |                  |              |  |
| 2   | Technische Akustik I (Akustische Wellen, Lärmschutz, Psychoakustik) / Technical Acoustics I (Acoustic Waves, Noise Protection, Psycho Acoustics )           | EN       | Prof. von Estorff    | M-16      | EC       | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 3   | Studienarbeit Energietechnik / Project Work Energy Systems  |          | Prof. Speerforck     | M-21      | C        | CM        | 12          | Y  | STA                 |            |                  |              |  |
| 3   | Innovative Methoden der Numerischen Thermofluidodynamik / Innovative CFD Approaches   | DE / EN  | Prof. Rung           | M-8       | EC       | CM        | 6           | Y  | MP                  | Y          | SA               | 20           |  |
| 3   | Seminar Energietechnik / Seminar Energy Systems   | DE       | Prof. Speerforck     | M-21      | EC       | CM        | 6           | Y  | RE                  |            |                  |              |  |
| 1-3   | Nichttechnische Angebote im Master / Non-technical Courses for Master   | DE / EN  | Richter              | 0-TUHH    | C        | OM        | 6           | Selection out of seperatly published Catalogue |                     |            |                  |              |  |
| 1-3   | Betrieb & Management / Business & Management  | DE / EN  | Prof. Meyer          | W-1       | C        | OM        | 6           | Selection out of seperatly published Catalogue |                     |            |                  |              |  |
| <b>Specialisation Energy Systems</b> Compulsory Courses: 6 LP Optional Courses: 36 LP |   |          |                      |           |          |           |             |  |                     |            |                  |              |  |
| 1   | Thermische Energiesysteme / Thermal Energy Systems  | DE       | Prof. Speerforck     | M-21      | C        | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 1   | Elektrische Energiesysteme I: Einführung in elektrische Energiesysteme / Electrical Power Systems I: Introduction to Electrical Power Systems               | DE       | Prof. Becker         | E-6       | EC       | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 1   | Energietechnik auf Schiffen / Marine Power Engineering  | DE       | Prof. Wirz           | M-12      | EC       | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 1   | Flugzeug-Energiesysteme / Aircraft Energy Systems   | DE       | Prof. Thielecke      | M-7       | EC       | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 1   | Technischer Ergänzungskurs für ENTMS, Option A (laut FSPO) / Technical Complementary Course for ENTMS, Option A (according to Subject Specific Regulations) |          | NN                   | M-21      | EC       | OM        | 12          | according to Subject Specific Regulations      |                     |            |                  |              |  |
| 1   | Technischer Ergänzungskurs für ENTMS, Option B (laut FSPO) / Technical Complementary Course for ENTMS, Option B (according to Subject Specific Regulations) |          | NN                   | M-21      | EC       | OM        | 6           | according to Subject Specific Regulations      |                     |            |                  |              |  |
| 2   | Dampferzeuger / Steam Generators  | DE       | Dr. Abel-Günther     | M-5       | EC       | CM        | 6           | Y  | KL                  | N          | ÜA               | 5            |  |
| 2   | Klimaanlagen / Air Conditioning   | DE       | Prof. Speerforck     | M-21      | EC       | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 2   | Kraft-Wärme-Kopplung und Verbrennungstechnik / Combined Heat and Power and Combustion Technology  | DE       | Dr. Abel-Günther     | M-5       | EC       | CM        | 6           | Y  | KL                  | N          | SA               | 10           |  |
| 2   | Schiffsmotorenanlagen / Marine Diesel Engine Plants   | DE       | Prof. Wirz           | M-12      | EC       | CM        | 6           | Y  | MP                  |            |                  |              |  |
| 2   | Solarenergienutzung / Use of Solar Energy   | DE       | Prof. Kaltschmitt    | V-9       | EC       | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 2   | Strömungsmaschinen / Turbomachinery   | DE       | Prof. Schatz         | 0-Extern  | EC       | CM        | 6           | Y  | KL                  |            |                  |              |  |
| 2-3   | Ausgewählte Themen der Energiesysteme - Option A / Selected Topics of Energy Systems - Option A   | DE / EN  | Dr. Scharfetter      | M-21      | EC       | OM        | 12          | Selection out of Catalogue below               |                     |            |                  |              |  |
| 2-3   | Ausgewählte Themen der Energiesysteme - Option B / Selected Topics of Energy Systems - Option B   | DE / EN  | Dr. Scharfetter      | M-21      | EC       | OM        | 6           | Selection out of Catalogue below               |                     |            |                  |              |  |

|  |   | Module   |                         |           |          |           | Examination |   |                     | Course Work |                  |              |
|--|---|----------|-------------------------|-----------|----------|-----------|-------------|---|---------------------|-------------|------------------|--------------|
| Re-com. Term   | Module Name (German / English)  | Language | ModuleResponsability    | Institute | C/EC (1) | CM/OM (2) | CP (4)      | Grade                                     | Examination Form(3) | Compulsory  | Course Work Type | Bonus (in %) |
| 3  | Bioenergie / Bioenergy  | DE       | Prof. Kaltschmitt       | V-9       | EC       | CM        | 6           | Y   | KL                  | Y           | FFST             | 0            |
| 3  | Elektrische Energiesysteme II: Betrieb und Informationssysteme elektrischer Energienetze / Electrical Power Systems II: Operation and Information Systems of Electrical Power Grids | DE       | Prof. Becker            | E-6       | EC       | CM        | 6           | Y   | MP                  |             |                  |              |
| 3  | Flugzeug-Kabinensysteme / Aircraft Cabin Systems  | DE       | Prof. God               | M-25      | EC       | CM        | 6           | Y   | KL                  |             |                  |              |
| 3  | Smart-Grid-Technologien / Smart Grid Technologies   | DE / EN  | Prof. Becker            | E-6       | EC       | CM        | 6           | Y   | RE                  |             |                  |              |
| <b>Specialisation Marine Engineering</b> Compulsory Courses: 12 LP Optional Courses: 30 LP |   |          |                         |           |          |           |             |   |                     |             |                  |              |
| 1  | Energietechnik auf Schiffen / Marine Power Engineering  | DE       | Prof. Wirz              | M-12      | C        | CM        | 6           | Y   | KL                  |             |                  |              |
| 1  | Maritime Technik und Offshore-Windkraftparks / Maritime Technology and Offshore Wind Parks  | DE       | Prof. Abdel-Maksoud     | M-8       | EC       | CM        | 6           | Y   | KL                  |             |                  |              |
| 1  | Technischer Ergänzungskurs für ENTMS, Option A (laut FSPO) / Technical Complementary Course for ENTMS, Option A (according to Subject Specific Regulations)                         |          | NN                      | M-21      | EC       | OM        | 12          | according to Subject Specific Regulations |                     |             |                  |              |
| 1  | Technischer Ergänzungskurs für ENTMS, Option B (laut FSPO) / Technical Complementary Course for ENTMS, Option B (according to Subject Specific Regulations)                         |          | NN                      | M-21      | EC       | OM        | 6           | according to Subject Specific Regulations |                     |             |                  |              |
| 1-2  | Ausgewählte Themen des Schiffsmaschinenbaus - Option A / Selected Topics of Marine Engineering - Option A   | DE / EN  | Prof. Wirz              | M-12      | EC       | OM        | 12          | Selection out of Catalogue below          |                     |             |                  |              |
| 1-2  | Ausgewählte Themen des Schiffsmaschinenbaus - Option B / Selected Topics of Marine Engineering - Option B   | DE / EN  | Prof. Wirz              | M-12      | EC       | OM        | 6           | Selection out of Catalogue below          |                     |             |                  |              |
| 2  | Schiffsmotorenanlagen / Marine Diesel Engine Plants   | DE       | Prof. Wirz              | M-12      | C        | CM        | 6           | Y   | MP                  |             |                  |              |
| 2  | Dampferzeuger / Steam Generators  | DE       | Dr. Abel-Günther        | M-5       | EC       | CM        | 6           | Y   | KL                  | N           | ÜA               | 5            |
| 2  | Klimaanlagen / Air Conditioning   | DE       | Prof. Speerforck        | M-21      | EC       | CM        | 6           | Y   | KL                  |             |                  |              |
| 2  | Kraft-Wärme-Kopplung und Verbrennungstechnik / Combined Heat and Power and Combustion Technology  | DE       | Dr. Abel-Günther        | M-5       | EC       | CM        | 6           | Y   | KL                  | N           | SA               | 10           |
| 2  | Strömungsmaschinen / Turbomachinery   | DE       | Prof. Schatz            | 0-Extern  | EC       | CM        | 6           | Y   | KL                  |             |                  |              |
| 3  | Schiffsvibrationen / Ship Vibration   | EN       | Dr. von Bock und Polach | M-10      | EC       | CM        | 6           | Y   | KL                  |             |                  |              |
| 3  | Thermische Energiesysteme / Thermal Energy Systems  | DE       | Prof. Speerforck        | M-21      | EC       | CM        | 6           | Y   | KL                  |             |                  |              |
| <b>Thesis</b> Compulsory Courses: 30 LP Optional Courses: 0 LP                             |   |          |                         |           |          |           |             |   |                     |             |                  |              |
| 4  | Masterarbeit / Master Thesis  |          | Professoren der TUHH    | 0-TUHH    | C        | CM        | 30          | Y   | AB                  |             |                  |              |

## Selected Topics of Energy Systems - Option A

| Course  |                      |                 |         |            | Examination |       |                        |   |
|---|----------------------|-----------------|---------|------------|-------------|-------|------------------------|---|
| Course Name (German / English)  | Course Form<br>LV(5) | Language<br>(6) | SWS (7) | Sem.<br>LV | CP (4)      | Grade | Examination<br>Form(3) | Additional information                          |
| Brennstoffzellen, Batterien und Gasspeicher: Neue Materialien für die Energieerzeugung und -speicherung / Fuel Cells, Batteries, and Gas Storage: New Materials for Energy Production and Storage | VL                   | DE              | 2       | SoSe       | 2           | Y     | KL                     |   |
| Dampfturbinen in Energie, Umwelt- und Antriebstechnik / Steam turbines in energy, environmental and Power Train Engineering   | VL                   | DE              | 3       | WiSe       | 5           | Y     | KL                     |   |
| Dampfturbinen in Energie, Umwelt- und Antriebstechnik / Steam turbines in energy, environmental and Power Train Engineering   | GÜ                   | DE              | 1       | WiSe       | 1           | Y     | KL                     |   |
| Gasnetze / Gas Distribution Systems   | VL                   | DE/EN           | 2       | SoSe       | 3           | Y     | MP                     |   |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships   | VL                   | DE              | 2       | SoSe       | 2           | Y     | MP                     |   |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships   | HÜ                   | DE              | 1       | SoSe       | 1           | Y     | MP                     |   |
| Nachhaltige industrielle Produktion / Sustainable Industrial Production   | VL                   | DE              | 2       | SoSe       | 4           | Y     | KL                     |   |
| Numerische Strömungssimulation - Übung mit OpenFoam / Computational Fluid Dynamics - Exercises in OpenFoam  | GÜ                   | EN              | 1       | SoSe       | 1           | Y     | MP                     |   |
| Numerische Strömungssimulation in der Verfahrenstechnik / Computational Fluid Dynamics in Process Engineering   | VL                   | EN              | 2       | SoSe       | 2           | Y     | MP                     |   |
| Offshore-Windkraftparks / Offshore Wind Parks   | VL                   | DE              | 2       | WiSe       | 3           | Y     | MP                     |   |
| Spezielle Gebiete der Experimentellen und Theoretischen Fluidodynamik / Selected Topics of Experimental and Theoretical Fluidynamics  | VL                   | DE              | 2       | WiSe       | 3           | Y     | MP                     |   |
| Systemsimulation / System Simulation  | VL                   | DE              | 2       | WiSe       | 2           | Y     | MP                     |   |
| Systemsimulation / System Simulation  | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | MP                     |   |
| Turbinen und Turboverdichter / Turbines and Turbo Compressors   | VL                   | DE              | 2       | WiSe       | 3           | Y     | MP                     |   |
| Turbinen und Turboverdichter / Turbines and Turbo Compressors   | HÜ                   | DE              | 1       | WiSe       | 1           | Y     | MP                     |   |
| Verbrennungsmotoren II / Internal Combustion Engines II   | VL                   | DE              | 2       | WiSe       | 2           | Y     | KL                     |   |
| Verbrennungsmotoren II / Internal Combustion Engines II   | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | KL                     |   |
| Wasserstofftechnik / Hydrogen Technology  | VL                   | DE              | 2       | SoSe       | 2           | Y     | KL                     |   |
| Wasserstofftechnologie / Hydrogen Technology  | VL                   | DE              | 2       | SoSe       | 2           | Y     | KL                     | Replaces "Hydrogen Technology (VL)" from SoSe22 |
| Windenergieanlagen / Wind Turbine Plants  | VL                   | DE              | 2       | SoSe       | 3           | Y     | KL                     |   |
| Zuverlässigkeit in der Maschinendynamik / Reliability in Engineering Dynamics   | GÜ                   | EN              | 1       | SoSe       | 2           | Y     | KL                     |   |

## Selected Topics of Energy Systems - Option B

| Course  |                      |                 |         |            | Examination |       |                        |   |
|---|----------------------|-----------------|---------|------------|-------------|-------|------------------------|---|
| Course Name (German / English)  | Course Form<br>LV(5) | Language<br>(6) | SWS (7) | Sem.<br>LV | CP (4)      | Grade | Examination<br>Form(3) | Additional information                          |
| Brennstoffzellen, Batterien und Gasspeicher: Neue Materialien für die Energieerzeugung und -speicherung / Fuel Cells, Batteries, and Gas Storage: New Materials for Energy Production and Storage | VL                   | DE              | 2       | SoSe       | 2           | Y     | KL                     |   |
| Dampfturbinen in Energie, Umwelt- und Antriebstechnik / Steam turbines in energy, environmental and Power Train Engineering   | VL                   | DE              | 3       | WiSe       | 5           | Y     | KL                     |   |
| Dampfturbinen in Energie, Umwelt- und Antriebstechnik / Steam turbines in energy, environmental and Power Train Engineering   | GÜ                   | DE              | 1       | WiSe       | 1           | Y     | KL                     |   |
| Gasnetze / Gas Distribution Systems   | VL                   | DE/EN           | 2       | SoSe       | 3           | Y     | MP                     |   |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships   | VL                   | DE              | 2       | SoSe       | 2           | Y     | MP                     |   |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships   | HÜ                   | DE              | 1       | SoSe       | 1           | Y     | MP                     |   |
| Nachhaltige industrielle Produktion / Sustainable Industrial Production   | VL                   | DE              | 2       | SoSe       | 4           | Y     | KL                     |   |
| Numerische Strömungssimulation - Übung mit OpenFoam / Computational Fluid Dynamics - Exercises in OpenFoam  | GÜ                   | EN              | 1       | SoSe       | 1           | Y     | MP                     |   |
| Numerische Strömungssimulation in der Verfahrenstechnik / Computational Fluid Dynamics in Process Engineering   | VL                   | EN              | 2       | SoSe       | 2           | Y     | MP                     |   |
| Offshore-Windkraftparks / Offshore Wind Parks   | VL                   | DE              | 2       | WiSe       | 3           | Y     | MP                     |   |
| Spezielle Gebiete der Experimentellen und Theoretischen Fluidodynamik / Selected Topics of Experimental and Theoretical Fluid Dynamics  | VL                   | DE              | 2       | WiSe       | 3           | Y     | MP                     |   |
| Systemsimulation / System Simulation  | VL                   | DE              | 2       | WiSe       | 2           | Y     | MP                     |   |
| Systemsimulation / System Simulation  | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | MP                     |   |
| Turbinen und Turboverdichter / Turbines and Turbo Compressors   | VL                   | DE              | 2       | WiSe       | 3           | Y     | MP                     |   |
| Turbinen und Turboverdichter / Turbines and Turbo Compressors   | HÜ                   | DE              | 1       | WiSe       | 1           | Y     | MP                     |   |
| Verbrennungsmotoren II / Internal Combustion Engines II   | VL                   | DE              | 2       | WiSe       | 2           | Y     | KL                     |   |
| Verbrennungsmotoren II / Internal Combustion Engines II   | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | KL                     |   |
| Wasserstofftechnik / Hydrogen Technology  | VL                   | DE              | 2       | SoSe       | 2           | Y     | KL                     |   |
| Wasserstofftechnologie / Hydrogen Technology  | VL                   | DE              | 2       | SoSe       | 2           | Y     | KL                     | Replaces "Hydrogen Technology (VL)" from SoSe22 |
| Windenergieanlagen / Wind Turbine Plants  | VL                   | DE              | 2       | SoSe       | 3           | Y     | KL                     |   |

## Selected Topics of Marine Engineering - Option A

| Course   |                      |                 |         |            | Examination |       |                        |                        |
|--|----------------------|-----------------|---------|------------|-------------|-------|------------------------|------------------------|
| Course Name (German / English)   | Course Form<br>LV(5) | Language<br>(6) | SWS (7) | Sem.<br>LV | CP (4)      | Grade | Examination<br>Form(3) | Additional information |
| Grundzüge des Schiffbaus für Schiffsmaschinenbauer / Fundamentals of Naval Architecture for Marine Engineers | VL                   | DE              | 2       | WiSe       | 2           | Y     | MP                     |                        |

| Course   |                      |                 |         |            | Examination |       |                        |                        |
|--|----------------------|-----------------|---------|------------|-------------|-------|------------------------|------------------------|
| Course Name (German / English)   | Course Form<br>LV(5) | Language<br>(6) | SWS (7) | Sem.<br>LV | CP (4)      | Grade | Examination<br>Form(3) | Additional information |
| Grundzüge des Schiffbaus für Schiffsmaschinenbauer / Fundamentals of Naval Architecture for Marine Engineers | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | MP                     |                        |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships  | VL                   | DE              | 2       | SoSe       | 2           | Y     | MP                     |                        |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships  | HÜ                   | DE              | 1       | SoSe       | 1           | Y     | MP                     |                        |
| Kavitation / Cavitation  | VL                   | DE              | 2       | SoSe       | 3           | Y     | MP                     |                        |
| Manövrierfähigkeit von Schiffen / Manoeuvrability of Ships   | VL                   | DE/EN           | 2       | WiSe       | 3           | Y     | KL                     |                        |
| Nachhaltige industrielle Produktion / Sustainable Industrial Production                                      | VL                   | DE              | 2       | SoSe       | 4           | Y     | KL                     |                        |
| Schiffsakustik / Ship Acoustics  | VL                   | DE              | 2       | SoSe       | 3           | Y     | MP                     |                        |
| Schiffspropeller / Marine Propellers   | VL                   | DE              | 2       | SoSe       | 2           | Y     | MP                     |                        |
| Schiffspropeller / Marine Propellers   | PBL                  | DE              | 2       | SoSe       | 1           | Y     | MP                     |                        |
| Spezielle Gebiete der Schiffspropulsion / Special Topics of Ship Propulsion                                  | VL                   | DE/EN           | 3       | SoSe       | 3           | Y     | MP                     |                        |
| Systemsimulation / System Simulation   | VL                   | DE              | 2       | WiSe       | 2           | Y     | MP                     |                        |
| Systemsimulation / System Simulation   | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | MP                     |                        |
| Verbrennungsmotoren II / Internal Combustion Engines II  | VL                   | DE              | 2       | WiSe       | 2           | Y     | KL                     |                        |
| Verbrennungsmotoren II / Internal Combustion Engines II  | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | KL                     |                        |

## Selected Topics of Marine Engineering - Option B

| Course   |                      |                 |         |            | Examination |       |                        |                        |
|--|----------------------|-----------------|---------|------------|-------------|-------|------------------------|------------------------|
| Course Name (German / English)   | Course Form<br>LV(5) | Language<br>(6) | SWS (7) | Sem.<br>LV | CP (4)      | Grade | Examination<br>Form(3) | Additional information |
| Grundzüge des Schiffbaus für Schiffsmaschinenbauer / Fundamentals of Naval Architecture for Marine Engineers | VL                   | DE              | 2       | WiSe       | 2           | Y     | MP                     |                        |
| Grundzüge des Schiffbaus für Schiffsmaschinenbauer / Fundamentals of Naval Architecture for Marine Engineers | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | MP                     |                        |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships  | VL                   | DE              | 2       | SoSe       | 2           | Y     | MP                     |                        |
| Hilfsanlagen auf Schiffen / Auxiliary Systems on Board of Ships  | HÜ                   | DE              | 1       | SoSe       | 1           | Y     | MP                     |                        |
| Kavitation / Cavitation  | VL                   | DE              | 2       | SoSe       | 3           | Y     | MP                     |                        |
| Manövrierfähigkeit von Schiffen / Manoeuvrability of Ships   | VL                   | DE/EN           | 2       | WiSe       | 3           | Y     | KL                     |                        |
| Nachhaltige industrielle Produktion / Sustainable Industrial Production                                      | VL                   | DE              | 2       | SoSe       | 4           | Y     | KL                     |                        |
| Schiffsakustik / Ship Acoustics  | VL                   | DE              | 2       | SoSe       | 3           | Y     | MP                     |                        |
| Schiffspropeller / Marine Propellers   | VL                   | DE              | 2       | SoSe       | 2           | Y     | MP                     |                        |
| Schiffspropeller / Marine Propellers   | PBL                  | DE              | 2       | SoSe       | 1           | Y     | MP                     |                        |
| Spezielle Gebiete der Schiffspropulsion / Special Topics of Ship Propulsion                                  | VL                   | DE/EN           | 3       | SoSe       | 3           | Y     | MP                     |                        |
| Systemsimulation / System Simulation   | VL                   | DE              | 2       | WiSe       | 2           | Y     | MP                     |                        |
| Systemsimulation / System Simulation   | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | MP                     |                        |

| Course  |                      |                 |         |            | Examination |       |                        |                        |
|---|----------------------|-----------------|---------|------------|-------------|-------|------------------------|------------------------|
| Course Name (German / English)                          | Course Form<br>LV(5) | Language<br>(6) | SWS (7) | Sem.<br>LV | CP (4)      | Grade | Examination<br>Form(3) | Additional information |
| Verbrennungsmotoren II / Internal Combustion Engines II | VL                   | DE              | 2       | WiSe       | 2           | Y     | KL                     |                        |
| Verbrennungsmotoren II / Internal Combustion Engines II | HÜ                   | DE              | 1       | WiSe       | 2           | Y     | KL                     |                        |

**Explanation:**

<sup>1</sup>C=Compulsory, EC=Elective Compulsory

<sup>2</sup>CM=Compulsory Defined Module, OM=Optional Defined Module

<sup>3</sup>MT=Midterm, KL=Written exam, SA=Written elaboration, FFST=Subject theoretical and practical work, FFA=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, STA=Study work, GD=Group discussion, UA=Exercices, AB=Thesis, SA It. FPrO=Written elaboration (accord. to Internship Regulations)

<sup>4</sup>CP=Credit Points

<sup>5</sup>VL=Lecture, SE=Seminar, GÜ=Recitation Section (small), PBL=Project-/problem-based Learning, PR=Practical Course, HÜ=Recitation Section (large), IV=Integrated Lecture

<sup>6</sup>DE=German, EN=English, DE/EN=German and English

<sup>7</sup>SWS=Contact hours