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| Discipline | SHIP RESISITANCE AND PROPULSORS code 31 5 semester – /winter / | |
| Specialty | NAVAL ARCHITECTURE and MARINE TECHNOLOGY | |
| ECTS credits: **4** | Form of assessment: EXAM | |
| Lecturer | Assoc. Prof. Galina Ilieva<br>Room 406M<br>Phone: +359 52383 524<br>E-mail: galina.ilieva@tu-varna.bg | ☺ |
| Department | Naval architecture, Marine engineering | |
| Faculty | SHIPBUILDING | |

Learning objectives:

This discipline is very important in education and training of future naval architects. Its content is based on previously gained basic knowledge in hull resistance, as well as basic knowledge in other specialized disciplines from the curricula of Naval Architecture and Marine Technology program.

Main aim of the discipline is students to gain strong knowledge and background in – ship propellers, thwir geometry and characteristics, learn how to design a propeller and match it with a marine engine, exploitation curves, etc.

CONTENTS:

| Training Area | Lectures | Lab sessions |
|---|---|---|
| Revision of hull resistance: types and specifics, formularium, calculations. | 2 | 1 |
| Ship propellers – types, classification, specifics. Geometry of ship propellers | 2 | 2 |
| Hydrodynamic characteristics of propellers | 3 | 2 |
| Hull-propeller interaction. Energy efficiency and approaches to reduce resistance; energy-saving devices | 4 | - |

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| Systematic series of ship propellers and application of systematic series results for propeller design | 3 | 2 |
| Propeller theories and models | 3 | - |
| Cavitation – types, specifics, calculations and prevention | 3 | 2 |
| Model tests for determination propeller hydrodynamics | 4 | - |
| Strength of propellers | 2 | 2 |
| Matching propeller and marine engine, exploitation curves. | 2 | 2 |
| Sea trials of ship performance | 2 | 2 |
| TOTAL: 45 hours | **30** | **15** |