

Discipline	Thermodynamics and Heat and Mass Transfer code: 17 winter semester				
Specialty	Naval Architecture and Marin Engineering				
ECTS credits: 5	Form of assessment: exam				
Lecturer	Assoc. professor Ph D / scientific title/ Daniela Chakyrova /name/ Room 312AM Phone: +359 52 383 506 E-mail: chakyrova_d@tu-varna.bg				
Department	Thermal Engineering and Technology				
Faculty	Shipbuilding				
<p>Learning objectives:</p> <p>As a result of the study of the discipline, students must master both the regularities of energy transformations in the interaction of bodies and force fields, as well as the theoretical bases of heat transfer and methods of calculating the basic parameters and dimensioning of heat exchangers and facilities.</p> <p style="text-align: center;">/ANNOTATION/</p> <p>The course in Thermodynamics and Heat Transfer is a theoretical discipline for students in the field of Shipbuilding. It is made up of two parts.</p> <p>The first part - Technical thermodynamics studies the patterns of energy transformations in the interaction of bodies and force fields and allows to determine the conditions for the flow of physical processes in the technical equipment. Students master the methods of studying the general macrophysical properties of material bodies, which are manifested in the processes of transformation of one kind of movement of matter into another.</p> <p>In the second part - Heat transfer the main attention is paid to the issues related to heat transfer by radiation, thermal conductivity and convection under stationary and non-stationary conditions of interaction. The issues of intensification of heat exchange and heat exchange apparatus are also discussed.</p>					
CONTENTS:					
Training Area			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Hours lectures</td> <td style="text-align: center;">Hours seminar exercises</td> </tr> </table>	Hours lectures	Hours seminar exercises
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Thermodynamic Systems, Thermodynamic Properties, Ideal Gases	3	2
Thermodynamic Energy, Energy Change	4	1
Thermodynamic Processes with Ideal Gases, Work Transfer	6	2
Thermodynamic Processes with Vapores, Work Transfer	6	2
Heat Transfer - Conduction	4	2
Heat Transfer - Convection	4	2
Heat Transfer - Radiation	3	2
Heat Exchangers	2	2
TOTAL: 45 h	30 h	15 h