

ANNOTATION

Hydraulics, Refrigeration And Air Conditioning Technology		ESTC credits: 9	
60 hours			
Department Ship Power Systems	Lectures: <div style="text-align: right;">Prof. Ph.D. Peycho Tomov; Assist. Prof . Ph.D. Dragiya Yanulov</div> Exercises: Assist. Prof . Ph.D. Dragiya Yanulov		
Learning objectives: Students SHOULD KNOW: <ul style="list-style-type: none"> - principle and detailed design solutions for hydraulic powered deck machinery; - principle and detailed design solutions for general and special purpose hydrostatic power systems; - design, service and maintenance features of refrigeration systems; - design, service and maintenance features of air conditioning systems Students SHOULD BE ABLE TO: <ul style="list-style-type: none"> - operate and service general and special purpose hydrostatic power systems - conduct control and diagnostics of hydrostatic power systems; - operate and serve refrigeration and air conditioning systems. 			
Assessment system: The trainees' progress in the acquisition of the material is controlled at the end of each topic. The theoretical knowledge of the trainees is assessed with questionnaires and tests. Their practical knowledge is assessed with oral assignments. <i>(Only students who have done and passed the semester tests and tasks successfully are allowed to sit for the examinations.)</i>			
SCOPE: This syllabus covers the requirements of the 1995 STCW convention Chapter III, Section A-III/1 Code Competence, Reference 1.6, 1.7, 2.1, 4.1 Operational level competences, Section A-III/2 code competence Reference 1.3, 1.4, 1.5, 3.2 Management level competence and the recommendations in the IMO/ILO Document for Guidance 1999 as prescribed in IMO Model course 7.02, Function 1 Competence 1.1.3.2, 1.1.4.5, 1.2.2.11 to 14, 1.3.1 and Model Course 7.04 Function 1 Competence 1.6.1.24 to 1.6.1.43, 1.7.1.			
Contents:			
No.	Subject Area (modules)	Lectures	Exercises
	Part One Hydraulic Power Systems		
1.	Principle features of marine hydrostatic power systems, classification and terminology.	2	0
2.	Components of marine hydrostatic power systems	6	4
3.	Hydraulic fluids	4	2

4.	Conduits and seals	4	2
5.	Real marine hydrostatic power systems, diagnostics	4	2
	Total for part one	20	10
	Part Two		
6.	Thermodynamic basics of operating processes in refrigeration plants	5	2
7.	Automation and control	5	2
8.	Service and maintenance	3	2
9.	Design features of the components	3	0
10	Air conditioning plants	4	2
	Total for Part Two	20	10
	Total	40	20