

## MAR-Lang Maritime English course

<b>Course Title</b>	Naval Engineering
<b>Course Description</b>	An English course in Naval Engineering on board different types of ships enabling communication with correct and appropriate terminology.
<b>Target Group</b>	Maritime students, merchant navy cadets and professionals in the maritime sector.
<b>Duration</b>	28 hours.
<b>Overall Learning Outcomes</b>	<p>By the end of the course, the learners will obtain the following knowledge, competencies and skills.</p> <ol style="list-style-type: none"> <li><b>1. Knowledge</b> <ol style="list-style-type: none"> <li>1.1 Knowing basic English naval engineering terminology related to diesel engines, auxiliary equipment, electrical and automation devices and their maintenance;</li> <li>1.2 Knowing extensive range of technical terminology and having sufficient vocabulary for use in a maritime context.</li> <li>1.3 Getting familiar with the ship's electrical and power plant equipment;</li> <li>1.4 Identifying the terms related to the parts of a diesel engine on diagrams, electrical devices and automation systems;</li> <li>1.5 Describing the operation of diesel engines, auxiliary equipment and power, automation systems.</li> </ol> </li> <li><b>2. Competencies</b> <ol style="list-style-type: none"> <li>2.1 Reading, comprehending and interpreting correctly authentic passages containing descriptions of technical equipment or devices, their function, properties and applications.</li> </ol> </li> <li><b>3. Skills</b> <ol style="list-style-type: none"> <li>3.1 Communicating in English in a marine environment;</li> <li>3.2 Understanding basic information and instructions of a technical manual in English;</li> <li>3.3 Performing duties efficiently collaborating with multi-lingual crews with safety and security;</li> <li>3.4 Producing oral speech, to participate in discussions, making or descriptions, presentations</li> </ol> </li> </ol>



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<b>Course Content</b>	The course content consists of 8 modules for a total of 16 lessons. These lessons will enable the learner to achieve the stated learning outcomes. Lessons can be accompanied by pre-learning tasks and post-lesson activities.				
	Lessons	Topic	Est. duration (total learning hours)	Theoretical /practical /online	Learning outcomes
	<b>Module 1</b>				
	<b>Auxiliary machinery</b>				
	1.1 An overview on fin stabilisers, capstans and winches, electric motors, refrigeration system, boilers, air compressors, oily water separators, heat exchangers				
	1.2 An overview on fans, launching gear, steering gear				
	1.3 Sewage treatment plant, bilge system, incinerator				
	1-2	Auxiliary machinery on board	4	All of the above	1.2;1.3;1.4; 1.5; 2.1; 3.1; 3.2; 3.4
	<b>Module 2</b>				
	<b>Pumps and piping systems</b>				
2.1 Types of pumps and their duties					
2.2 Displacement pumps and their subcategories: reciprocating: single acting ram, double acting ram / rotary pumps: gear, screw, vane, lobe					
2.3 Centrifugal pumps: volute, diffuser, regenerative					
2.4 Operation of a pump					
3-4	Pumps and piping systems	4	All of the above	1.1;1.2;1.3;1.4; 1.5; 2.1; 3.1;3.2; 3.4	
<b>Module 3</b>					
<b>Marine diesel engines and their auxiliaries</b>					
3.1 Two-stroke engine and its components					
3.2 Four-stroke engine and its components					
3.3 Cooling water system					
3.4 Lubricating oil system					
3.5 The turbocharger					
3.6 Compressed air system (starting, control and service air)					
3.7 Fuel oil system					
5-6	Marine diesel engines and their auxiliaries	4	All of the above	1.1;1.2;1.3;1.4; 1.5; 2.1; 3.1;3.2;3.4	



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<b>Module 4</b>				
<b>Propulsion</b>				
4.1 Diesel engine turbine, steam turbine plant, gas turbine engine, marine nuclear plant				
4.2 Steam turbines: parts and operation				
4.3 Impulse turbine				
4.4 Reaction turbine				
4.5 Action - reaction turbine				
4.6 Steam power plant for turbines				
7-8	Other types of propulsion plants	2	All of the above	1.1;1.2;1.3;1.4; 1.5; 2.1; 3.1;3.2;3.4
<b>Module 5</b>				
<b>Electrical machines</b>				
5.1. Generating units (GU) with auxiliary engines for power generation				
5.2. AC brushless generators				
5.3. Motors: construction, operation and types				
5.4. Shaft-alternator				
9-10	Electrical machines	4	All of the above	1.1;1.2;1.3;1.4; 1.5; 2.1; 3.1;3.2;3.4
<b>Module 6</b>				
<b>Ship power distribution system</b>				
6.1 Main switchboard and other switchboards				
6.2 Essential and non-essential consumers				
6.3 Emergency power system (EPS) and UPS				
6.4 System protection: circuit breakers, fuses, HV circuit breakers, load-shedding				
6.5 Transformers				
6.6 Earthing, grounding				
11-12	Ship power distribution system	4	All of the above	1.1;1.2;1.3;1.4; 1.5; 2.1; 3.1;3.2;3.4



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	<b>Module 7</b>			
	<b>Automated systems</b> 7.1. The principles of automation 7.2. Sensors and actuators 7.3. Relays: types 7.4. PLCs, their construction, operation, application. 7.5. Automation application on board: DP, monitoring and alarm systems, control systems.			
	13-14	Automated systems	4	All of the above 1.1;1.2;1.3;1.4;1.5; 2.1; 3.1;3.2;3.4
	<b>Module 8</b>			
	<b>Communication systems</b> 8.1. Construction and operation of communication systems (PA system, radio transmitters, satellite communication, VDRs, telephone exchangers, IP protection) 8.2. Maintenance of communication systems			
	15-16	Communication systems on board	2	All of the above 1.1;1.2;1.3;1.4;1.5; 2.1; 3.1;3.2;3.4
<b>Teaching methods</b>	Self-studying, lectures, tutorials, blended learning, group work, individual work...			
<b>Teaching material</b>	Audios, videos, texts, quizzes, infographic...			
<b>Assessment</b>	Any suitable oral and/or written assessment			
<b>ECTS</b>	4			
<b>Teaching prerequisites</b>	A working knowledge of the course modules with basic technical vocabulary. Competence in the target language to a minimum of C1 level (CECRL). Basic pedagogical competencies in teaching ESP (English for Specific Purposes).			



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