

Kto12 BASIC EDUCATION CURRICULUM
SENIOR HIGH SCHOOL TECHNICAL-VOCATIONAL-LIVELIHOOD MARITIME SPECIALIZATION
ENGINE WATCH 2

Grade: 12
Subject Title: Engine Watch 2

Semester: 1stSemester
No. of Hours: 80 hours
Prerequisite: Engine Watch 1

Subject Description: This course in Engineering Watch 2 is a requirement of the Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended. This course is a prerequisite to the certification of Rating Forming Part of an Engineering Watch (RFPEW) in compliance with the mandatory minimum requirements for ratings as specified in Section A-III/4. This is designed for Senior High School (SHS) students to enhance their knowledge, understanding, and proficiency in accordance with workplace standards. It focuses on maintaining the correct water level and steam pressure.

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCIES	CODE
Introduction: 1. Relevance of the course 2. Core concepts in Engine Watch 2 3. Career opportunities	The learners demonstrate an understanding of the basic concepts and underlying principles in engine watch 2 of table A-III/4	The learners shall be able to carry out standards in engine watch 2 as prescribed by STCW Training Regulations of table A-III/4	1. Discuss the relevance of the course 2. Explain the core concepts of Engine Watch 2 3. Explore job opportunities for Able Seafarer Engine as a career	
Lesson 1: MAINTAIN THE CORRECT WATER LEVEL AND STEAM PRESSURE (WLSP) (80 hrs)				
1. Description of boiler	The learner demonstrates an understanding of the basic concepts and underlying principles in maintaining the correct water level and steam pressure	The learner independently demonstrates an understanding of the competencies in maintaining the correct water level and steam pressure as prescribed by STCW Training Regulations of table A-III/4	LO 1. Explain the function of the boiler (16 hrs) 1.1 Define boiler 1.2 Discuss the types of boiler 1.3 Explain the function of the basic parts of the boiler	TVL_MEW212WLSP-Ia-d-1
2. Steam cycle a. Evaporation b. Energy conversion (steam energy to mechanical energy) c. Condensation			LO 2. Explain the cycle in producing steam (8 hrs) 2.1 Discuss steam cycle 2.2 Discuss the steam cycle in relation to the actual operation of boiler	TVL_MEW212WLSP-Ie-f-2
3. Uses of Steam a. Fuel oil heating b. HVAC c. Main propulsion d. Auxiliary machines			LO 3. Explain the application of steam onboard ships (16 hrs) 3.1 Discuss the different uses of steam onboard ships	TVL_MEW212WLSP-Ig-j-3

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCIES	CODE
4. Boiler safety operation			LO 4. Explain safe operation of boiler during watch keeping (40 hrs) 4.1 Discuss the safe operating procedure of the boiler 4.2 Identify the parameters for safe boiler operations 4.3 Identify how these parameters are being measured 4.4 Read the water level and steam pressure 4.5 Discuss the procedure in maintaining the water level and steam pressure of the boiler	TVL_MEW212WLSP-IIa-j-4

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Glossary

Auxiliary machinery	Other machinery found in the engine-room other than the auxiliary engine and main engine
Engine room	Space in which a vessel's main propulsion and auxiliary engines
Major maintenance	Any maintenance job that requires equipment shutdown and large resources
Minor maintenance	Any maintenance job that can be performed by a single person and few resources
Monitor	To watch, check on, or regulate the performance of a machine
Oiler	A rating forming part of engineering watch and provides support in all engineering tasks in ships except tanker
Preventive maintenance	To control or eliminate the damage and maintain the good working condition of internal combustion engine
Valve	A gate or a variable orifice that regulates the flow of liquid sludge

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Code Book Legend

Sample: TVL_MEW212WLSP-Ia-d-1

LEGEND		SAMPLE		DOMAIN/ COMPONENT	CODE
First Entry	Learning Area and Strand/ Subject or Specialization	Technical Vocational Track Maritime Track Engine Watch 2	TVL_MEW2 12	Maintain the Correct Water Level and Steam Pressure	WLSP
	Grade Level	Grade 12			
Uppercase Letter/s	Domain/Content/ Component/ Topic	Maintain the correct water level and steam pressure	WLSP		
				-	
Roman Numeral <i>*Zero if no specific quarter</i>	Quarter	First Quarter	I		
Lowercase Letter/s <i>*Put an en dash (-) in between letters to indicate more than a specific week</i>	Week	Week One to Four	a-d		
				-	
Arabic Number	Competency	Discuss the function of boiler	1		

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References

Main Reference:

International Maritime Organization. *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and STCW Code including the 2010 Manila Amendments*. London: International Maritime Organization, 2011.

Other References:

Joel, R. *Basic Engineering Thermodynamics in S.I. Units*. 5th ed. Harlow, Longmann, 1996.

Morton, T.D. *Motor Engineering Knowledge for Marine Engineers*. London: Thomas Reed Publications Ltd, 1994