**Subject Title:** Engine Watch 2

**Grade:** 12  
**Semester:** 1st Semester  
**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.

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>CONTENT STANDARDS</th>
<th>PERFORMANCE STANDARDS</th>
<th>LEARNING COMPETENCIES</th>
<th>CODE</th>
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</table>
| **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 Abled Seafarer Engine as a career |                           |

**Lesson 1: MAINTAIN THE CORRECT WATER LEVEL AND STEAM PRESSURE (WLSP) (80 hrs)**

1. Description of boiler  
   a. Evaporation  
   b. Energy conversion (steam energy to mechanical energy)  
   c. Condensation  | 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 |
<table>
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<td>4. Boiler safety operation</td>
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<td>LO 4. Explain safe operation of boiler during watch keeping (40 hrs)</td>
<td>TVL_MEW212WLSP-IIa-j-4</td>
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<td>4.1 Discuss the safe operating procedure of the boiler</td>
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<td>4.2 Identify the parameters for safe boiler operations</td>
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<td>4.3 Identify how these parameters are being measured</td>
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<td>4.4 Read the water level and steam pressure</td>
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<td>4.5 Discuss the procedure in maintaining the water level and steam pressure of the boiler</td>
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</table>
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.
## Code Book Legend

**Sample: TVL_MEW212WLSP-Ia-d-1**

<table>
<thead>
<tr>
<th>LEGEND</th>
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<td>Maintain the Correct Water Level and Steam Pressure</td>
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<td>I</td>
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<tr>
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<tr>
<td>Arabic Number</td>
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<td>Discuss the function of boiler</td>
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*LO - Learning Outcome*
Main Reference:


Other References:
