CMI COURSE CURRICULUM
COURSE ACTION

Course Title: Introduction to Engine Room Maintenance **Alpha Number:** MART 131
CIP No. 15.0806

Type of Action:

✓ New Course (attach narrative justification for course creation): See program document

_____ Substantive Revision (attach narrative justification for changes, including assessment and/or achievement data and feedback from the advisory committee if relevant)

Select all that apply:
_____ Change in number of credit hours
_____ Change in prerequisite
_____ Substantive change in course content
_____ Change to SLOs
_____ Other:

_____ Non-substantive Revision
Select all that apply:
_____ Change in Alpha Number or Title (unless letter abbreviation has not previously been used)
_____ Edit to course description that does not alter the substance of the course
_____ Change to recommended texts
_____ Other

_____ Reinstitution of Archived Course (attach narrative justification for reinstitution, including evidence of demand, evidence of capacity, feedback from the advisory committee if relevant, and commentary that speaks directly to the reasons the course was initially archived)

_____ Reaffirmation of Course (only allowable if course completion rate exceeds ISS, the benchmark has been met for the majority of SLO assessments, and there is no evidence of inequitable levels of achievement across subpopulations; attach evidence)

Approvals:

	Name	**Signature**	**Date**
Department Chair	Edward Adiniwin	DocuSigned by: Edward Adiniwin 0A4D30580E1D40C...	2/17/2023
Curriculum Committee Chair	Rosie Koroi	DocuSigned by: Rkoroi 59252531F4FC4A3...	2/18/2023
Dean	Rigieta R. Lord	DocuSigned by: Rigieta Lord 20A90D8FCE5AA44C...	2/18/2023
VPASA	Dr. Elizabeth Switaj	DocuSigned by: 89BEB3BDDC23455...	2/20/2023

CMI COURSE OUTLINE

CIP No. 15.0806 **Version No.** 1

MART 131 — **Alpha Number**

Introduction to Engine Room Maintenance — **Course Title**

Course Description: Continues development of students' abilities to contribute to a watch in a manned engine room or perform duties in a periodically unmanned engine room. The focus is on carrying out basic operations using hand tools and assisting in the maintenance of marine diesel engines and associated auxiliary machinery in accordance with established procedure and safety/statutory requirements. Students will be required to spend two months on board a training vessel.

Course originally prepared by: Mark Gooderham Consultant July/2022
Most recent revision by: Mark Gooderham Consultant July/2022

Course mode(s): ✓ Face to Face (including Zoom) ____ Hybrid

Credits calculated by: ✓ Credit Hour ____ Clock Hour ____ N/A

Contact Hours: 395

Type	No. of Hours	No. of Credits	Maximum No. of Hours Online
Lecture/Seminar/Workshop	80	5	
Clinical			
Practicum	338	7	
Lab			
Fieldwork			
Studio Time			
Total	418	12	

Purpose(s) of Course:
Degree Requirement _____
Degree Elective _____
General Education _____
Credit Certification CC in Rating Forming Part of an Engine Room Watch
Developmental _____
CTE/TVET ✓
ABE/Adult HS _____

Distribution Area:
Humanities _____
Social Sciences _____

Mathematics (Credit) _____
Science _____

Prerequisite: MART 130

Student Learning Outcomes: Upon completion of this course, students will be able to:

1. Demonstrate safe working practices in the engine room.
2. Identify the components of hydraulic and steering systems, electrical systems, compressed air systems, and bilge and ballast systems.
3. Demonstrate safe operation of marine boilers, diesel engines, pollution control equipment, propulsion plants, hydraulic and steering systems, electrical systems, compressed air systems, and bilge and ballast systems.
4. Explain the effect of shipping activities on the marine environment.
5. Develop a career plan of action based on their understanding of career pathways and their shipboard experience.

SLO Mapping:

Prerequisite Course SLO	Linked SLO from this Course	Explanation
1. Explain the watchkeeping routines and general duties of a rating forming part of an engineering watch.	1. Demonstrate safe working practices in the engine room.	Students must understand what basic working practices are in order to complete them safely.
3. Describe the purpose, elements, and operational requirements of marine boilers. 4. Identify basic diesel engine components and the cleaning requirements of those components. 5. Describe the requirements of MARPOL and common types of pollution control equipment. 6. Identify the shaft configuration of propulsion plants and the required basic operational checks.	3. Demonstrate safe operation of marine boilers, diesel engines, pollution control equipment, propulsion plants, hydraulic and steering systems, electrical systems, compressed air systems, and bilge and ballast systems.	Systems must be understood before they can be operated safely.

Links to Program Learning Outcomes:

SLO	Linked PLO	I/P/M	Explanation of Link
1	1. Carry out basic engine room watchkeeping duties.	M	Safe practices are part of

			watchkeeping duties.
	6. Demonstrate proper use of PPE and safe use of hand tools.	P/M	Use of appropriate PPE is part of safe working practices.
2	5. Carry out operational checks on the shafting components of a marine propulsion plant and relevant hydraulic systems, including steering gear in accordance with established procedure and safety requirements.	P	In order to carry out these checks, students must know the parts of each system.
	7. As a member of the engine room crew, assist in the maintenance of relevant pumping systems, including the bilge and ballast system in accordance with established procedure and safety/statutory requirements.	P	In order to assist in maintenance, students must know the parts of each system.
3	3. Carry out relevant operational checks of marine boilers, marine diesel engines, and related systems in accordance with established procedure and safety/statutory requirements. 4. Safely operate the on board pollution control machinery and equipment in accordance with safety, statutory and environmental requirements. 5. Carry out operational checks on the shafting components of a marine propulsion plant and relevant hydraulic systems, including steering gear in accordance with established procedure and safety requirements. 7. As a member of the engine room crew, assist in the maintenance of relevant pumping systems, including the bilge and ballast system in accordance with established procedure and safety/statutory requirements.	M	Students are required to demonstrate these skills.
4	8. Describe the importance of marine environmental awareness and relevant precautions.	M	Students understand the importance of regulations and equipment they have already learned about.
5	9. Explain maritime career pathways.	P/M	Students understand the pathways and can apply them to their own lives.

Course Content: Students in this course will practice:

1. Compressed Air Systems
2. Electrical Systems
3. Pumping Systems
4. Safe Working Practices in the Engine Room

5. Marine Environmental Awareness
6. Hydraulic Systems and Steering Gear
7. Daily work and working conditions on a ship

Recommended Methods of Instruction

✓____ Demonstration

✓____ Lecture

_____ Small group discussion

✓____ Class discussion

✓____ Audio-Visual Aids

_____ Laboratory

✓____ Supervised Practice

✓____ Field Trips

_____ Other:

Recommended Assessment Tool Type(s):

_____ Case Study

_____ Critique of Performance

✓____ Exam/Quiz In-Course

_____ Exam/Quiz Standardized (attach narrative describing development and validation process)

_____ Focus Group

_____ Group Project

_____ Individual Project

✓____ Observation

_____ Portfolio Review

_____ Presentation

✓____ Simulation

✓____ Skill Performance

_____ Supervisor Evaluation

_____ Survey

_____ Written Assignment

Equipment and Materials:

1. Recommended texts: Course notes.

2. Equipment/Facilities: PPE. Hand tools. Workshop area. Training vessel. Vessels of opportunity (Fieldwork). Teaching Facility

3. Materials and Supplies: PPE.

Connection to College Mission:

The CMI Mission states, “The College of the Marshall Islands will provide our community with access to quality, higher and further educational services, prioritize student success through engagement in relevant Academic, Career and Technical Education, and be a center for the study of Marshallese

Culture. It will also provide intellectual resources and facilitate research specific to the needs of the nation". BOR approved 1st December, 2020
The course will provide access to quality further education which will prioritize student success through engagement in relevant Academic, Career and Technical Education.

Connection to Department Mission:
The mission of the department is "providing a high-quality educational service in maritime related vocational training to the Marshallese people and to students from other nations who desire maritime career opportunities in the area of maritime studies". The course will provide high quality maritime vocational training to students who desire career opportunities in the area of maritime studies.