Marine Diesel Engines III

Basic Course Specification		
Course Title	**Course Code**	**Program on which the course is given**
Marine Diesel Engines III	MM 323T	Bachelor
Academic Year	**Specialization** (hr/week)	**Pre-Requisites**
2020 - 2021	Theoretical 1 hr/week Application 5 hrs/week Credit 3	S400 - MM 221 T

Overall Course Objectives

This syllabus covers the requirements of the STCW-78, as amended. In particular Chapter III, Section A-III/1for the function "Marine Engineering at the Operational Level" and the function of "Maintenance and Repair at the Operational Level, STCW-78, as amended. The syllabus designed with the guide of IMO Model course 7.04, version 2014, function 1 and 3. This functional element provides the detailed knowledge to support the training outcomes related to Maintenance and Repair at the Operational Level.

Course Learning Outcomes. By successful completion of the course each student will be able to:

Topic	Linking to PLOs	7th Week Assessment	12th Week Assessment	Class Activities	Final Exam
1. Define the construction of marine diesel engines	b,f	x	x	x	
2. Apply the basic methodologies used in selecting method of diesel engines maintenance	c, f, k		x	x	x
3. Explain the different types of Diesel Engine Maintenance.	d,f,k		x		x
4. Understand the Precautions to be taken before maintenance	a, g, h, k			x	x
5. Solve marine engineering problems.	d,e			x	x

Course Content

Lec./ Week #	Topic	Hrs. #	Theoretical	Application	Lab.
1	- Deferent types of maintenance (break down maintenance-planned maintenance -condition (vibration) monitoring maintenance. - Engine Room resource management	6	1	5	0
2	- Engine Room resource management - Appropriate basic mechanical knowledge and skills & Fastening (maintenance and repair)	6	1	5	0
3	- Engine Room resource management. - Safety preparations before diesel engine maintenance	6	1	5	0
4	- Spare parts control. - The use of appropriate specializesd tools and measuring instruments	6	1	5	0

Course Content					
Lec./ Week #	**Topic**	**Hrs. #**	**Theoretical**	**Application**	**Lab.**
5	- Maintenance and repair of Diesel engine – Cylinder - Head	6	1	5	0
6	- Maintenance and repair of Diesel engine – Cylinder - head fittings	6	1	5	0
7	- Maintenance and repair of Diesel engine - Trunk Piston and. Crosshead Piston - **7th Week Exam**	**6**	**1**	**5**	**0**
8	- Maintenance and repair of Connecting rod & Crosshead. - Procedure of piston disassembly, inspection of piston rings	6	1	5	0
9	- Maintenance and repair of stuffing box. - Inspection of Connecting rod , crosshead & Stuffing box	6	1	5	0
10	- Crank shaft deflection & Main bearing - Procedure of cylinder liner disassembly, inspection and maintenance	6	1	5	0
11	- Maintenance and repair of turbo charger - Crank shaft deflection & main Bearing	6	1	5	0
12	- **12th week exam.** - Camshaft, Chain ,Gears and Flywheel + Exam	**6**	**1**	**5**	**0**
13	- Assembly and engine test. Assembly	6	1	5	0
14	- Performance evaluation - Engine Test	6	1	5	0
15	- Diesel engine safety equipment tests - Performance evaluation	6	1	5	0
16	**Final Assessment**				
	Total Hours	**90**	**15**	**75**	**0**

Teaching & Learning Methods	Facilities Required for Teaching & Learning Methods
• Lectures • Tutorials • Reports & sheets • Practical lessons in the workshop	• White board and data show • PowerPoint Presentation • Videos • Diesel Workshop

Students Assessment Methods	
Assessment Schedule	
Assessment#1	Week 7
Assessment#2	Week 12
Assessment#4	Week 16

Grading Method		
7th Week Assessment	Written Exam	**30%**
12th week Assessment	Written Exam	**20%**

Class/ workshop Activities	Participation and Quiz	**10%**
Final Exam	Written Exam	**40%**
	Total	**100 %**

Assessment criteria meets the standards of the STCW 78 convention "as amended" and in the light of the related IMO model courses.

Staff Requirements	
Marine Chief Engineer/ Ph.D.	
List of References	
Course Notes	**Essential Books**
None	"Pounder's marine diesel engines and gas turbines, 9780750689847 "
Recommended Books	**Periodicals and Publications**
None	None
IMO References	
None	

Accreditation Bodies
*Egyptian Authority for Maritime Safety (EAMS)
*European Commission (EC)
*ISO (9001 – 2015) DNV-GL
*Central Evaluation and Accreditation Agency Hanover, Germany (ZEVA)
*Ministry of Education (KSA)
*Ministry of Higher Education (Greece)
*Ministry of Higher Education (Oman)
*Commission for Academic Accreditation (CAA), Ministry of higher Education (UAE)
*University of Plymouth, United Kingdom (dual degree)

Prepared by: Course Coordinator **Reviewed by: Head of Department**

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