College of Micronesia - FSM
P.O. Box 159 Kolonia, Pohnpei

Course Outline Cover Page

Applied Marine Machinery — MME 181
Course Title — Department and Number

Course Description: To enhance the knowledge by providing the necessary skills the students will require to be able to operate the propulsion plant of not over 500 kW, as well as the auxiliary engines and deck machineries of a ship. The skills would include the proper operation of refrigeration units, milling machines for precision parts for engines and machineries, electrical works as well as repairs, maintenance and operation of outboard motors, valves and pumping arrangements. This course is in line with the requirements of the International Convention on the Standards of Training, Certification and Watch keeping for Seafarers, 1978, as amended (STCW Convention).

Prepared by: Marcellino Jibemai **State:** FSM-FMI

	Hours per week	No. of weeks	Total hours	Semester Credits
Lecture	2	16	32	2
Laboratory	6	16	96	2
Practicum	32	16	192	4
			Total Semester Credits:	8

Purpose of Course
Degree Requirement _____
Degree Elective _____
Advance Certificate _____
Certificate Remedial _____
Other (Workshop) _____

Prerequisite of Course(s): Class 6 EK I

1/25/2005
2/17/2005

General Objective: On successful completion of this course, the students will have been provided with the skills required by a Class 5 Engineer to operate, maintain and take apart and assemble a propulsion engine of not over 500 kW, as well as the auxiliary engines and deck machineries of a ship. The skills would include the proper operation of refrigeration units, milling machines for precision parts for engines and machineries, electrical works as well as repairs, maintenance and operation of outboard motors, valves and pumping arrangements.

Outline of Contents:

1. Ship Machinery
2. Marine Refrigeration
3. Machining and Fabrication
4. Marine Electricity
5. Outboard Motor Engine
6. Pumps, Valves and Piping

Learning Outcomes: *Upon successful completion of this course the student will be able to:*

1. Describe the major components of a diesel engine and its operation and to be able to carry out periodic preventive maintenance, inspections, repairs and basic troubleshooting as may be required in the maritime or industrial work place.
2. Operate a small marine refrigeration plant and to carry out the necessary checks maintenance, inspections, basic troubleshooting, and repairs as may be required.
3. Safely operate equipment and tools that are being utilized for machining and fabrication of pars and repairs of ship's structure as well as other appurtenances on board a vessel.
4. Carry out basic repairs of electrical motors and equipment on board a ship and to do preventive maintenance as well as testing and inspection in a safe manner and in accordance with normal electrical practices.
5. Operate an outboard engine in a safe manner and to do periodic checks and maintenance in accordance with the user's manual as well as carrying out basic troubleshooting and repairs.
6. Perform periodical maintenance and basic troubleshooting and repairs on various pumps used on board ships including other accessories.

Assessment Criteria: Learning and assessments will take place at a safe and suitable working place including the engineering laboratory and on board appropriate vessels.

Delivery Strategy: The course provides for delivery on-the-job and assessment utilizing practical demonstration that simulate conditions found on small vessel engineering plant installation of not over 500 kW.

Some areas of content may be common to more than one learning outcomes, and therefore integration of training and assessment may be appropriate.

Methods of Instructions:

1. Laboratory and appropriate work place instruction
2. Instructor's demonstrations
3. Participation of students in practical sessions and exercises
4. Group and individual work

Resources Requirement:

- Engineering Shop
- Assorted Tools
- White board
- Engine for practical work
- Electrical motor
- 12V DC batteries
- Assorted pumps
- Outboard motor engine
- Marine refrigeration simulator
- Appropriate vessel
- Gas and electric welding equipment
- Appropriate safety gears and clothing

Assessment Strategy

Assessment Method: Learning outcomes will be assessed separately. A holistic assessment strategy will be provided to ensure that as much as possible the assessment replicates conditions that learners may encounter in their workplace.

Practical assessment will be undertaken by observing the ability of learners to correctly apply the techniques and methods used in a workplace on board ship.

Condition of Assessment: Assessment will take place on-the-job in a safe environment working place and will as much as possible simulate the on board normal practices. Competence may be assessed in classroom, laboratory, and appropriate vessel.

Evaluation Final grade for this course will be based on the individual meeting the course requirements at the following percentage rates:

90%-100%	A - Superior
80%-89%	B - Above Average
70%-79%,	C - Average
60%-69%	D - Below Average
0 -59%	F - Failure

Attendance The COM-FSM attendance policy will apply.

Academic Honesty Policy The College academic honesty policy shall be applied.