College of Micronesia-FSM

Introduction to Diesel Mechanics (Course Title) | VT-101a (Dept. & No.)

Course Description: This course will introduce the student to maintenance and repair of the diesel engines used in automobiles, trucks and off road vehicles.

	Hours per Week		No. of Weeks		Total Hours	Sem. Credits
Lecture	3	x	16	=	48	= 3
Lab		x		=		=
Workshop		x		=		=

Total Sem. Credits 3

PURPOSE OF COURSE:

Degree Requirement	x
Degree Elective	
Certificate	x
Remedial	
Other	

PREREQUISITE COURSES:
None

ature, Chairman Curriculum Committee — Date Approved Committee: 3/14/95

SUSAN MOSES
President, College of Micronesia-FSM — Date Approved: 3/17/95

I. COURSE OBJECTIVES:

A. General:

l . The student will be able to identify the Shop Equipment used to repair diesel engines.
2. The student will be able to understand the history, development and uses of the Diesel Engine.
3. The student will be able to identify the main components on an Engine and what components require servicing.
4. The student will become familiar with the intake, exhaust, and cooling systems.
5. The student will become familiar with the fuel injection systems commonly used in the FSM.
6. The student will become familiar with the basic electrical systems in use in the FSM.
7. Students will be trained to perfrom break-in, troubleshooting and tuneup procedures.

B. Specific:

1. At the completion of the course, the student will be able to identify with 70% accuracy the hand tools, shop tools, measuring tools, fasteners, taps and dies normally used to repair, service and maintain diesel engines.

2. At the completion of the course the student will be able to identify basic engine external components, define engine performance terminology, identify cycle operation, combustion chambers with a least a 70% accuracy.

3. At the completion of the course the student will be able to identify and state the purpose and function of the cylinder block, camshaft, cylinder sleeve, crankshaft, connecting rod, piston and rings, engine oil, lubrication pump and oil cooler, cylinder head and valves, valve train operating mechanism, flywheel housing, flywheel, and timing cover and bearings, with a 70% accuracy.

4. At the completion of the course the student will be able to identify and correctly describe the function of the air-intake system, exhaust system, cooling system, hydraulic lines and fittings, filters, seals and gaskets with a 70 % accuracy.

5. At the completion of the course the student will be able to define and explain the use of diesel fuel, governors, antipollution control devices, fuel-injection nozzles and holders, fuel-injection systems, the differences between American Bosch, Robert Bosch and CAV fuel-injection systems, Caterpillar fuel-injection systems, Detroit Diesel fuel-injection systems, Cummins fuel-injection systems, the major differences between DPA and Roosa Master Distributor-type fuel-injection pumps, American Bosch distributor-type fuel-injection pumps, and Caterpillar Sleeve-metering fuel-injection systems with a 70% accuracy.

6. At the completion of the course, the student will be able to define and explain the use of electricity and magnetism, electric circuits and test instruments, wires and terminals, relays, switches and solenoids, batteries, electrical starting (cranking) systems, hydraulic and air starting systems, charging systems (generators), and regulators as they relate to the diesel engine and with a 70% accuracy.

7. At the completion of the course the student will understand the checks and adjustments required before starting the engine, how to troubleshooting and perform a basic tuneup of the basic diesel engine, all to an accuracy of 70%.

II. TEXTBOOKS: Diesel Mechanics, by Erich J. Schultz, Pacific Vocational Institute-Burnaby Campus, Burnaby, British Colombia, Gregg Division, McGraw-Hill Book Company, New York.

III. SELECTED REFERENCES:

Engines, Fundamentals of Service (1980), Deere & Company, Moline Illinois, 5th edition.

Bearings and Seals, Fundamentals of Service (1980), Deere & Company, Moline, Illinois.

Shop Tools, Fundamentals of Service (1985), Deere & Company, Moline, Illinois.

Fuels, Lubricants and Coolants, Fundamentals of Service (1974), Deere & Company, Moline, Illinois.

IV. METHODS OF INSTRUCTION;

Lecture
Readings
Class discussions

V. INSTRUCTIONAL COSTS:
None

VI. EVALUATION:
A minimum of periodic quizes, a mid-term and final written as well as practical examination.

VII. REQUIRED COURSE MATERIALS: Safetytoe shoes and eye protection.

VIII. ATTENDANCE POLICY:
Student will be dropped from the class if over seven class periods are missed.

IX. CREDIT BY EXAMINATION:
Not at this time.