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

Course Outline Cover Page

Introduction to Motor Vehicle Mechanics — Course Title
VTM101 — Department and Number

Course Description: This is a semester length course designed to introduce students to motor vehicle mechanics. It includes safe working habits and ethics in the automotive repair industry, safe manual handling and mechanical lifting, the use of shop equipment and tools, measuring and identifying fastener types, sealants, adhesives, and basic understanding of the principles of engine operation. This course will also develop skills in bench fitting which is generally required for successful repairs and maintenance of motor vehicles.

Prepared by: Pablo H. Lamsis, Jr. **State:** Pohnpei Campus

	Hours per Week	No. Of Weeks	Total Hours	Semester Credits
Lecture	3	16	48	3
Laboratory	3	16	48	1
			Total Semester Credits:	4

Purpose of Course

Degree Requirement	
Degree Elective	
Advanced Certificate	
Certificate	XX
Remedial	
Other (Workshop)	

Prerequisite Course(s): None

_____ _____
Signature, Chairman, Curriculum Committee **Date Approved by Committee**

_____ _____
Signature, President, COM-FSM **Date Approved by the President**

I. LEARNING OUTCOMES:

A. General Learning Outcomes: Upon successful completion of this course, students will competently be able to:

1. Perform safe, professional, and responsible work practices.
2. Carry out competent work activities in bench fitting, identification and use of fasteners, adhesives and sealants.
3. Explain and demonstrate two and four stroke cycle operation of an engine.

B. Specific Learning Outcomes: On completion of this course, students will be able to:

Learning Outcome 1: Perform safe, professional, and responsible work practices.

Assessment Criteria
- a. Explain the use of shop equipment and the hazards associated with it.
- b. Explain hazards associated with manual lifting and mechanical handling and demonstrate safe procedures.
- c. Demonstrate safety procedures to all areas at all times and follow workshop rules.
- d. Demonstrate competency in identifying and safely using proper hand tools for the job.

Assessment Method:
Multiple choice questions
Short answer questions
Practical exercises/tests

Learning Outcome 2: Carry out competent work activities in bench fitting, identification and use of fasteners, adhesives, and sealants.

Assessment Criteria:
- a. Identify fastener types and their applications.
- b. Demonstrate the ability to use automotive measuring instruments, read and interpret their readings.
- c. Competently use fastener extraction tools.
- d. Demonstrate competently the use of drilling machines and carry out tap and die thread cutting operations.
- e. Carry out competent workmanship in bench fitting activities: sawing, filing, chiseling, punching, and fastener torque specifications.
- f. Demonstrate the proper use of adhesives and sealants.

Assessment Method:
Multiple choice questions
Short answer questions
Practical exercises/tests

Learning Outcome 3: Explain and demonstrate two and four stroke cycle operation of an engine.

Assessment Criteria:
- a. Identify major engine parts, explain design, function,

and operation of each.

b. Explain and identify various engine configurations.
c. Define bore and stroke and demonstrate how to measure piston displacement.
d. Explain and demonstrate the two and four-stroke cycle.
e. Identify various types of engine lubrication and explain their function.

Assessment Method: Multiple choice questions
Short answer questions
Practical exercises/tests

STUDENTS WILL BE MADE AWARE OF OCCUPATIONAL HEALTH AND SAFETY ISSUES IN ALL SITUATIONS AND BE EXPECTED TO DEMONSTRATE SAFE WORKING PRACTICES AT ALL TIMES.

II. COURSE CONTENTS:

1. Orientation and shop safety
   - Introduction to shop equipment
   - Manual lifting and mechanical handling
   - Workshop safety
   - Orientation and use of basic hand tools

2. Automotive measurements, basic bench fitting, fasteners, sealants and adhesives.

- Fasteners types and applications
- Measuring instruments: pitch gauge, calipers, micrometers…
- Fastener extraction tools
- Drilling
- Tap and die operation
- Basic bench fitting tasks: sawing, filing, thread cutting, chiseling, punching, fastener torque specifications.
- Adhesives and sealants.

3. Two and four-stroke cycle engine operation

- Engine main parts, design, function and operation
- Basic engine configuration
- Bore, stroke and engine displacement.
- The four stroke cycle
- Engine lubrication types

III. TEXTBOOK:

Modern Automotive Technology, Duffy, 2003

IV. REQUIRED COURSE MATERIALS:

1. Instructor:
   a. Classroom with whiteboard
   b. Laboratory equipment with tools of the trade
   c. Text, Teacher's Resource Guide, workbook
   d. Computer, Overhead projector, transparencies
2. Student:
   a. Text(s), handouts provided when deemed necessary by the Instructor
   b. Ring binder
   c. College ruled note sheet, pencil or pen
   d. Tool Kit

V. REFERENCE MATERIALS:

Modern Automotive Technology, Duffy
How Stuff Works, www.howstuffworks.com
Manufacturer's Service Manuals
NIDA (Introductory Lessons Only)
Selected Films and Charts from Various Sources

VI. METHODS OF INSTRUCTION:

1. Computer Aided Instruction
2. Practical/Experimentation
3. Lecture/Demonstration

VII. EVALUATION:

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

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

Credit by Examination is allowed. (Exam sample – see attachment)

VIII. ATTENDANCE POLICY:

The COM-FSM attendance policy will apply.

IX. ACADEMIC HONESTY POLICY:

The COM-FSM academic honesty policy will apply.