

College of Micronesia – FSM

P.O. Box 159

Kolonia, Pohnpei

Course Outline Cover Page

Introduction to Small Engine Repair

Course Title

VSM101

Department and Number

Course Description: This is an introductory course to small engine technology. It covers in-depth topics of safety in the workshop; use and application of hand tools, equipment, measuring tools, specialized small engine tools,

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 the student will be able to:

1. Demonstrate an understanding of general workshop rules.
2. Demonstrate safety common sense when working with shop equipment and engines.
3. Identify hand tools, measuring tools and specialized tools and demonstrate or explain their application and safe use..
4. Identify internal combustion engine types and their classification and explain engine power factors.

B. Specific Learning Outcomes: On completion of this course the student will be able to:

Learning Outcome 1: Demonstrate an understanding of general workshop rules

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| Assessment Criteria | <ol style="list-style-type: none"> a. Enumerate some of the workshop safety rules and explain the need to adhere to them. b. Name a few rules on personal safety and explain the reason for each. c. Demonstrate the procedure in dealing with spilled flammable chemicals in the workshop. d. Demonstrate safe handling of a battery in the workshop. e. Demonstrate a positive attitude towards personal safety. f. Explain how to prevent a fire. |
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Assessment Method:	Multiple choice questions Short answer questions Practical exercises/tests
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Learning Outcome 2: Demonstrate safety common sense when working with shop equipment and engines.

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| Assessment Criteria: | <ol style="list-style-type: none"> a. Demonstrate safety awareness and practical common sense at all times when working on the following equipment: <ul style="list-style-type: none"> • Electric drill motor • Drill press • Bench grinder • Valve face grinder • Air-driven power tools • Lifting devices • Oxygen/Acetylene torch • Engines |
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Assessment Method: Multiple choice questions
Short answer questions
Practical exercises/tests

Learning Outcome 3: Identify hand tools, measuring tools and specialized tools and demonstrate or explain their application and safe use..

Assessment Criteria: a. Identify and demonstrate safe use of the following hand tools:

- Hand tools
- Clamps or vise
- Hacksaw
- Twist drills
- Tap and die set
- Extractors
- Puller tools
- Feeler gauge
- Micrometer
- Dial caliper
- Dial indicator
- Plastigage
- Engine tools

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

Learning Outcome 4: Identify internal combustion engine types and their classification and explain engine power factors.

Assessment Criteria: a. Identify engine internal and external parts.
b. Enumerate engine types and classification.
c. Calculate piston displacement on a given engine.
d. Explain work, force, torque and power concepts.

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:

- A. Preventative safety
 - General workplace safety rules
 - Personal safety rules
 - Safety with engines
 - Fire protection rules
 - Flammable liquids
 - Workplace chemicals
 - Battery safety
- B. Equipment safety
 - Electric drill motor
 - Drill press
 - Bench grinder
 - Valve face grinder
 - Air-driven power tools
 - Lifting devices
 - Oxygen/Acetylene torch
- C. Tool identification and safety
 - Hand tools
 - Clamps or vise
 - Hacksaw
 - Twist drills
 - Tap and die set
 - Extractors
 - Puller tools
- D. Measuring tools
 - Feeler gauge
 - Micrometer
 - Dial caliper
 - Dial indicator
 - Plastigage
- E. General tool requirements
 - Tool box tools
 - Metric tools
 - Specialized engine tools
- F. Engine technology basics
 - Internal engine components
 - External engine components
 - Engine classification
 - Internal combustion engine types
 - EPA – Control of Air Pollution
 - Engine power factors
 - Engine output measurements

III. TEXTBOOK:

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. Calculator

V. REFERENCE MATERIALS:

Small Engine Technology by William Schuster (ISBN: 0-8273-7700-2)
Small Engine Technology by William Schuster (0827377789)
Small Engine Care & Repair by Briggs & Stratton
Small Engines Fundamentals and Service, Eugene W. Stagner, 1998
How Stuff Works, www.howstuffworks.com
Manufacturer's Service Manuals
Selected Films and Charts from Various Sources
Drills Taps and Dies, Tubal Cain

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.

VIII. ATTENDANCE POLICY:

The COM-FSM attendance policy will apply.

IX. ACADEMIC HONESTY POLICY:

The COM-FSM academic honesty policy will apply.