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

# Course Outline Cover Page

**Workshop Fabrication** — Course Title
**VEM110** — Department and Number

**Course Description:** This course introduces basic hand tools and basic power tools used in electrical work, construction and maintenance. Proper use and care of these tools is stressed. Valuable safety information for each type of tool is discussed. After this course, the student will be able to perform specific tasks using hand and power tools and fabricate small projects from simple drawings.

**Prepared by:** Bernardo Dimaliwat **State:** Pohnpei Campus

| | Hours per Week | No Of Weeks | Total Hours | Semester Credits |
|---|---|---|---|---|
| Lecture | 3/6 | 16/8 | 48 | 3 |
| Laboratory | | | | |
| | | Total Semester Credits: | | 3 |

**Purpose of Course**

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

**Prerequisite Course(s):** ESL 050 Technical English
MS104 Technical Math I
Or concurrently

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

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

## General Objective:

The students will be able to identify, select, safely use and maintain a range of basic hand and power tools commonly used in the electrical industry; use measuring devices accurately; read simple drawings, follow written instructions and translate the information to build small projects; develop a methodical approach to completing a task.

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

1. Identify and classify basic hand tools
2. Select the right tool for the right task
3. Apply hand tools correctly and safely
4. Maintain hand tools
5. Identify basic portable power tools
6. Select the right portable tool for the right task
7. Apply portable power tools correctly and safely
8. Maintain power tools
9. Demonstrate the above skills in the manufacture of small projects

**Outline of Content:** This course contains:

1. Safety
   - Demonstrate safe work practices in a controlled environment

2. Tool Identification
   - Identify the common tools used in the Electrical Industry
   - Classify basic hand and power tools
   - Appropriate use of each tool
   - Parts of each tool

3. Tool Usage
   - Reading manuals
   - Correct usage of each tool
   - Maintenance of each tool

4. Workshop
   - Workshop safety
   - Machine shop procedures
   - Diagram/Plan reading and transfer of information in a workshop situation
   - Marking out techniques
   - Basic metal work including metal joinery techniques such as rivets, soldering and welding

**Learning Outcomes:** **On completion of this course the learner will be able to:**

**Learning Outcome 1:** **Identify and classify basic hand tools**

Assessment Criteria
a. Identify tools by name
b. Label each part of the tool
c. Name four (4) classes of hand tools
Range: Measuring and marking
Cutting
Holding and supporting
Impelling and Percussion, etc

Assessment Method
Multiple choice questions
Short answer questions
Practical Exercises/Test

**Learning Outcome 2 :** **Select the right tool for the right task**

Assessment Criteria
a. Explain why a selected tool is appropriate for a particular task
b. Demonstrate during practical tasks appropriate selection of tools

Assessment Method
Multiple choice questions
Short answer questions
Practical Exercises/Test

**Learning Outcome 3:** **Apply hand tools correctly and safely**

Assessment Criteria
a. Demonstrate proper procedure for hand tool usage
b. Explain appropriate procedure for hand tool usage
c. Demonstrate and explain safety precautions
d. Mark out a workpiece to a specific tolerance
e. Produce a workpiece using cutting, holding, supporting, impelling and percussion tools

Assessment Method
Multiple choice questions
Short answer questions
Practical Exercises/Test

**Learning Outcome 4:** **Maintain hand tools**

Assessment Criteria
a. Explain appropriate maintenance requirements for hand tools
b. Demonstrate maintenance of hand tools
c. State the consequence of poorly maintained hand tools

d. Demonstrate safe and appropriate storage of hand tools
e. Demonstrate an attitude of caring for the maintenance of hand tools

Assessment Method
Multiple choice questions
Short answer questions
Practical Exercises/Test

**Learning Outcome 5 : Identify basic portable power tools**

Assessment Criteria
a. Identify power tools by name
b. Label each part of a portable power tool

Assessment Method
Multiple choice questions
Short answer questions
Practical Exercises/Test

**Learning Outcome 6: Select the right portable tool for the right task**

Assessment Criteria
a. List the work applications for portable power tools
b. Explain why a selected portable power tool is the most appropriate for the task
c. List the holding methods and jigs appropriate for power tools
d. Given a situation requiring the use of a portable power tool select the most appropriate type of holding method and or jig required, justify the selection with regards to issues such as safety, time efficiency, cost and quality of finished product

Assessment Method
Multiple choice questions
Short answer questions
Practical Exercises/Test

**Learning Outcome 7: Apply portable power tools correctly and safely**

Assessment Criteria
a. List safety precautions
b. Explain the safe and proper procedure for use of portable power tools
c. Demonstrate the safe and proper procedure for use of a portable power tool
d. Produce a work piece using appropriate portable power tools to given dimensions and profile as indicated on a given drawing

Assessment Method
Multiple choice questions
Short answer questions
Practical Exercises/Test

**Learning Outcome 8: Maintain power tools**

Assessment Criteria
a. Prepare a maintenance check schedule of power tools
b. Conduct a routine maintenance check of power tools and associated equipment
c. Identify unsafe or faulty power tools
d. Demonstrate procedure for removal and repair of unsafe and faulty power tools
e. Demonstrate proper storage and cleaning of tools

Assessment Methods
Multiple Choice Questions
Short Answer Questions
Practical Exercises/Test

**Required Course Materials:**

**1. Instructor:**

a. Laboratory equipment with tools of the trade
b. Text, Teacher's Resource Guide, workbook
c. Overhead projector, transparencies
d. Manufacturers manuals

**2. Student:**

a. Text(s), handouts provided by instructor
b. Ring binder
c. College ruled note sheet, pencil or pen
d. Scientific calculator

**Reference Materials:**

- Core Curriculum, NCCER, 2000 Revision
  Prentice Hall, Inc Upper Saddle River, New Jersey

**Method of Instruction:**

a. Theory sessions
b. Practical demonstrations
c. Students practical activities/projects

**Evaluation:**

Final Grade for this course will be based on 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 vocational educational attendance policy will apply.

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