College of Micronesia – FSM
Course Modification Request

VEM112 Electrical Wiring II Course Number and Title	Technology and Trade Department
Same as above Recommended Course Number and Title	Same as above Department

New Course Objectives:
No change

New Course Description:
No Change.

Revision Request:
Change the Prerequisite – from VEE111 to "VEE111 or concurrently"

Justification for the Revision:
The students will have better understanding of residential wiring if they can take the theory part (VEM111) with the practice (VEM112).

Signed by Bernardo Dimaliwat	09-15-04 Date
Chairperson, Curriculum Committee	Date
President, COM-FSM	Date

Official Use Only
New Course Number and Title:

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

Course Outline Cover Page

Electrical Wiring II — Course Title
VEM 112 — Department and Number

Course Description: This course is designed to introduce students to basic wiring methods used in the electrical industry. The students will develop skills in basic circuitry, identification of cable types and terminology used in the industry. Apply techniques as required by the National Electrical code with respect to safe wiring practices.

Prepared by: Grilly Jack **State:** Pohnpei Campus

	Hours per Week	No. Of Weeks	Total Hours	Semester Credits
Lecture	3/8	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): VEM 111 or concurrently

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

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

General Objective: **The students will become familiar with common electrical and building terminology used in the industry. Use the various methods of installing cables and conductors in different types of situations and terminate the conductors in the correct manner, to fixtures and appliances. Operate in compliance with the National Electrical Code.**

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

1. Describe safety and the importance of grounding during installation.
2. Demonstrate box and conductor installation.
3. Demonstrate how to properly wire electrical devices.
4. Describe how to plan branch circuits.
5. Demonstrate blue print reading skills and wire various residential circuits.
6. Demonstrate electrical circuit troubleshooting skills.

Outline of Content: This course contains:

1. Electrical safety and grounding.
   - Effects of electrical shock.
   - Grounding.
   - Grounding theory.
   - System grounding.
   - Bonding.
2. Installing boxes and Conductors.
   - Planning the rough in.
   - Locating boxes.
   - Attaching boxes.
   - Installing conduits.
   - Boring and notching for conduits.
   - Cutting conduits.
3. Electrical devices wiring.
   - Wiring method
   - Attaching conductors.
   - Splicing conductors.
   - Fixture wiring.
   - Mounting fixtures.
4. Planning electrical circuits.
   - Obsolete wiring.
   - Types of branch circuits.
   - Determining load.
   - Balancing circuit load.
5. Reading prints and wiring circuits.
   - Standard symbols.

- Wiring circuits.
- Outdoor wiring.
- Fluorescent lighting.

6. Electrical troubleshooting.
   - Tools.
   - Diagnosing.
   - Overloaded circuits.
   - Unbalanced circuits.
   - Fuses.
   - Breakers.
   - Miscellaneous problems.

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

Learning Outcome 1: Describe safety and the importance of grounding during installation.

Assessment Criteria
a. Describe conditions most likely to cause electrical shock.
b. Explain equipment and system grounding.
c. Explain the principles for electrical grounding.
d. Define bonding and how it is done.

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

Learning Outcome 2: **Demonstrate box and conductor installation.**

Assessment Criteria
a. Explain the planning steps for rough in.
b. Explain how to determine location for boxes.
c. Demonstrate how to attach boxes.
d. Demonstrate how to install conduits.
e. Demonstrate boring and notching techniques.
f. Demonstrate how to cut conduit.

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

Learning Outcome 3: **Demonstrate how to properly wire electrical devices.**

Assessment Criteria
a. describe how to prepare conductors for connections.
b. Demonstrate the proper method of attaching conductors to devices and fixtures.
c. Demonstrate split wiring connections.

d. Demonstrate safe wiring practice.

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

Learning Outcome 4: **Describe how to plan branch circuits.**

Assessment Criteria
a. Define branch circuits.
b. Identify the types of branch circuits.
c. Explain purpose of branch circuits.
d. Describe the NEC requirements for branch circuits.
e. Calculate circuit loads.

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

Learning Outcome 5 : **Demonstrate blue print reading skills and wire various residential circuits.**

Assessment Criteria
a. Recognize and use electrical symbols.
b. Describe the relation between electrical plan, schematic and pictorial diagram.
c. Sketch an electrical wiring diagram.
d. Plan and wire circuit according to plan.
e. Discuss polarity in wiring and explain its importance.

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

Learning Outcome 6: **Demonstrate electrical circuit troubleshooting skills.**

Assessment Criteria
a. Describe the safety procedures required for troubleshooting an electrical circuit.
b. List the trouble shooting tools required.
c. Explain the procedure for testing fuses, circuit breakers, receptacles, fixtures and switches.
d. Describe overloaded neutral and unbalanced currents.

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

Required Course Materials:

1. Instructor:

a. Laboratory equipment with tools of the trade
b. Text, Electrical Level Two, Annotated Teacher's Guide NCCER ISBN 0-13-046667-0
c. Teacher's Resource Guide, workbook
d. Overhead projector, transparencies

2. Student:

a. Text(s), Electrical Level Two, Trainee Guide NCCER ISBN 0-13-046665-4
b. Ring binder
c. College ruled note sheet, pencil or pen
d. Scientific calculator

Reference Materials:

Modern Residential Wiring.
Harvey N. Holzman.

Method of Instruction:

1. Lecture and Discussion.
2. Practical/Experimentation

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 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.