

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

Course Outline Cover Page

Building Maintenance 1

Course Title

VBM 101

Department and Number

Course Description:

Provides the students with the opportunity to correctly use a range of Hand & Power Tools more commonly used by building maintenance personnel. This course will also provide the student with knowledge and hands-on experience in Blueprint Reading, Surface Preparation and Finishing and Trim work.

Prepared by: Jeff Steel

State: Pohnpei Campus

	Hours per Week	No. Of Weeks	Total Hours	Semester Credits
Lecture	3/6	16/8	48	3
Laboratory	3/6	16/8	48	1
Total Semester Credits:				4

Purpose of Course

Degree Requirement	_____
Degree Elective	_____XX_____
Advanced Certificate	_____
Certificate	_____XX_____
Apprenticeship	_____XX_____
Other (Workshop)	_____

Prerequisite Course(s): VSP 153a Industrial Safety

Signature, Chairman, Curriculum Committee

Date Approved by Committee

Signature, President, COM-FSM

Date Approved by the President

COURSE TITLE **BUILDING MAINTENANCE 1**

Nominal Duration **96Hours/4 Credits**

Course Code **VBM 101**

General Objective

Provides the students with the opportunity to correctly use a range of Hand & Power Tools more commonly used by building maintenance personnel. This course will also provide the student with knowledge and hands-on experience in Blueprint Reading, Surface Preparation and Finishing and Trim work.

Prerequisites

VSP 153a Industrial Safety
A student may seek recognition for competencies already held.

Specific Objectives:

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

1. **Identify, select, use, maintain, and store hand tools and equipment used in building maintenance.**
2. **Manufacture a range of timber construction joints.**
3. **Explain the benefits of scheduling practices in building maintenance.**
4. **Identify and interpret types of plans and symbols, extract and communicate basic information needed for everyday requirements from plans and specifications.**
5. **Reproduce shapes to nominated scales.**
6. **Draw a full size setout of a project to a given specification.**
7. **Identify and remove defects in timber surfaces required for finishing.**
8. **Select, prepare and apply stoppings to timber surfaces to repair nail holes and defects.**
9. **Identify, describe and perform defect removal from various substrates used in the building industry.**

10. **Demonstrate the skills and knowledge required to be able to apply specified paint coatings to selected surfaces.**
11. **Demonstrate the skills and knowledge required to be able to install a window and door with finishing hardware.**
12. **Identify and install different types of trim molding.**
13. **Identify various insulation, flashing, and siding used in building construction and describe their use.**

Delivery

Delivery methods must provide for the demonstration of competence in skills specified in all learning outcomes.

Assessment

More than one learning outcome may be assessed at once, by observing the learners ability to apply both specified skills and knowledge.

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.

LEARNING OUTCOME 1

Introduction to Hand Tools and Equipment

VBM 101.1

Identify, select, use, maintain and store hand tools and equipment used in building maintenance.

Assessment Criteria

- 101.1.1** Identify hand tools in common use in building maintenance.
- 101.1.2** Select hand tools for specified construction tasks.
- 101.1.3** Demonstrate the safe use of hand tools in the workplace while constructing specified joints. Tolerances to be $\pm 1/16"$.
- 101.1.4** Demonstrate the safe cleaning and maintenance of tools and equipment specified.
- 101.1.5** Select and fit relevant personal protective equipment required to be worn when operating and handling basic hand tools.

All work practices must ensure that safe practices are adopted.

Conditions

Working in groups given:

- **Resources**
- **Verbal presentation to the group of learners**

Assessment Method

Assessment may involve any of the following methods

- **Oral questioning**
- **Written tests**
- **Computer managed testing**
- **Individual written assignments**
- **Active participation in group activity**

LEARNING OUTCOME 2

Timber Construction Joints

VBM 101.2

Manufacture a range of timber construction joints.

Assessment Criteria

101.2.1

Use hand and power tools to safely manufacture six (6) of the following construction joints, without error.

- “T” half lap
- cross halving/half/lap
- stopped housing
- stopped rebate
- flat miter
- edge miter
- dowel-butt and mitred
- “T” and corner bridle
- through single dovetail
- plate jointed-butt and mitred (biscuit)

All work practices must ensure that safe practices are adopted.

Conditions

Working in groups given:

- **Resources**
- **Verbal presentation to the group of learners**
- **Demonstration of procedure**

Assessment Method

Assessment may involve any of the following methods

- **Oral questioning**
- **Written tests**
- **Computer managed testing**
- **Individual written assignments**
- **Active participation in group activity**

LEARNING OUTCOME 3

Production Planning

VBM 101.3

Explain the benefits of scheduling practices in building maintenance.

Assessment Criteria

101.3.1 Describe the function of scheduling

101.3.2 Explain the principles of “Just in Time” management.

101.3.3 Explain effects of poor quality control.

All work practices must ensure that safe practices are adopted.

Conditions

- **Verbal presentation to the group of learners**
- **Workplace visits to various sectors of Industry**

Assessment Method

Assessment may involve any of the following:

- **Oral questioning**
- **Written testing**
- **Computer managed testing**
- **Individual and group written assignments**
- **Active participation in group activity**

LEARNING OUTCOME 4

Plan and Document Reading

VBM 101.4

Identify and interpret types of plans and symbols, extract and communicate basic information needed for everyday requirements from plans and specifications.

Assessment Criteria

- 101.4.1** Describe drawing terms.
- 101.4.2** Identify various symbols used in plans.
- 101.4.3** Identify types of plans.
- 101.4.4** Identify and explain plan title blocks.
- 101.4.5** Identify and explain basic symbols and abbreviations.
- 101.4.6** Extract basic information from a given Specification.

All work practices must ensure that safe practices are adopted.

Conditions

- **Verbal presentation to the group of learners.**
- **Resources**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written testing**
- **Computer managed testing**
- **Individual and group written assignments**
- **Active participation in group activity**

LEARNING OUTCOME 5

Scale Drawings

VBM 101.5

Reproduce shapes to nominated scales.

Assessment Criteria

- 101.5.1** List the reasons for scaling as part of drawing.
- 101.5.2** Demonstrate the use of a scale rule reading.
- 101.5.3** Produce scaled working drawings (3/32:1, 1/8:1) and construction details (1:1, 1/2: 1) using nominated drawing equipment, methods and techniques.

All work practices must ensure that safe practices are adopted.

Conditions

- **Verbal presentation to the group of learners.**
- **Resources**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written tests**
- **Computer managed testing**
- **Individual written assignments.**
- **Active participation in group activity.**

LEARNING OUTCOME 6

Full Size Setout Drawn to Specifications

VBM 101.6

Draw a full size setout of a project to a given specification.

Assessment Criteria

101.6.1 State the importance of a full size setout.

101.6.2 Set out a project to given specifications. Within $\pm 1/16''$.

All work practices must ensure that safe practices are adopted.

Conditions

- **Verbal presentation to the group of learners.**
- **Resources**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written tests**
- **Computer managed testing**
- **Active participation in group activity**

LEARNING OUTCOME 7 Repair of Damaged Timber Surfaces

VBM 101.7

Identify and remove defects in timber surfaces that require finishing.

Assessment Criteria

101.7.1 Identify defects including:

- Bruises
- Cross sanding marks
- Glue
- Grease
- Machine marks
- Scratches
- Shakes
- Knots
- Splits

101.7.2 Remove defects including:

- Bruises
- Cross sanding marks
- Glue
- Grease
- Machine marks
- Pencil marks
- Scratches

All work practices must ensure that safe practices are adopted.

Conditions

- **Examples of defects supplied**
- **All tools and equipment required to remove defects supplied**

Assessment Method

Assessment may involve any of the following methods

- **Oral questioning**
- **Written tests**
- **Computer managed testing**
- **Practical exercisers**

LEARNING OUTCOME 8 • **Active participation in group activity**
Stoppings

VBM 101.8

Select, prepare and apply stoppings to timber surfaces to repair nail holes and defects.

Assessment Criteria

101.8.1 Identify and name 5 stoppings used to fill nail holes and minor defects.

101.8.2 Explain the properties of:

- Epoxy/polyester putties
- Wax Stoppings
- Wood putties
- Water putty
- Oil putty

101.8.3 Prepare 3 stoppings commonly used.

101.8.4 Apply 3 stoppings most commonly used.

All work practices must ensure that safe practices are adopted.

Conditions

- **Resources**
- **Examples of stoppings supplied**

Assessment Method

Assessment may involve any of the following:

- **Oral questioning**
- **Written testing**
- **Computer managed testing**
- **Practical exercisers**
- **Active participation in group activity**

LEARNING OUTCOME 9

Surface Preparation

VBM 101.9

Identify, describe and perform defect removal from various substrates used in the building industry.

Assessment Criteria

- 101.9.1** Identify various types of substrates used in the building industry.
- 101.9.2** Describe the composition and qualities of selected substrates.
- 101.9.3** Select the stopping or filling materials for a selected substrate and the type of paint coating to be applied.
- 101.9.4** Remove paint coatings from a surface using
- a power sander
 - chemical liquid paint remover
 - scraper
 - sanding block
- 101.9.5** Demonstrate the repair of a given wall surface with the following defects:
- Hole 6”x 6”
 - Indentations.
 - Scratches

All work practices must ensure that safe practices are adopted.

Conditions

- **Demonstration to the group of learners.**
- **Examples of materials supplied**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written tests**
- **Practical exercisers.**

LEARNING OUTCOME 10 • **Active participation in group activity**
Paint Application

VBM 101.10

Demonstrate the skills and knowledge required to be able to apply specified paint coatings to selected surfaces.

Assessment Criteria

- 101.10.1** Select surface fillers, abrasives and equipment suitable for the preparation of surfaces for finishing with full gloss acrylic paint
- 101.10.2** Prepare a surface suitable for finishing with full gloss acrylic.
- 101.10.3** Demonstrate application and finishing of full gloss acrylic paint by brush and roller coater.

All work practices must ensure that safe practices are adopted.

Conditions

- **Demonstration to the group of learners.**
- **Examples of materials supplied**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written tests**
- **Practical exercisers.**
- **Active participation in group activity**

LEARNING OUTCOME 11 Windows and Doors

VBM 101.11

Demonstrate the skills and knowledge required to be able to install a window and door with finishing hardware.

Assessment Criteria

- 101.11.1** Identify various types and members of fixed, Sliding and swinging windows.
- 101.11.2** Identify the common types of exterior doors and explain how they are constructed.
- 101.11.3** Identify different types of fittings used in the Installation of doors and windows.
- 101.11.4** Demonstrate the correct procedure of installing a standard door in a timber frame with proper clearances.
- 101.11.5** Demonstrate the correct procedure of installing a sliding window into a timber frame.
- 101.11.6** Demonstrate the correct procedure of installing an entrance lock set.

All work practices must ensure that safe practices are adopted.

Conditions

- **Demonstration to the group of learners.**
- **Examples of materials supplied**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written tests**
- **Practical exercisers.**

- **Active participation in group activity**

LEARNING OUTCOME 12

Interior Finishing and Trim work

VBM 101.12

Identify and install different types of trim molding.

Assessment Criteria

- 101.12.1** Identify the different types of standard moldings and describe their uses.
- 101.12.2** Make square and miter cuts using a miter saw.
- 101.12.3** Make coped joint cuts using a coping saw.
- 101.12.4 Install interior trim including:
- Door Trim
 - Window Trim
 - Base Trim
 - Ceiling Trim
- 101.12.5** Estimate the quantities of different trim materials required for selected rooms.

All work practices must ensure that safe practices are adopted.

Conditions

- **Demonstration to the group of learners.**
- **Examples of materials supplied**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written tests**
- **Practical exercisers.**

- **Active participation in group activity**

LEARNING OUTCOME 13

Exterior Finishing

VBM 101.13

Identify various insulation, flashing and siding used in building construction and describe their use.

Assessment Criteria

- 101.13.1** Describe the purpose of wall insulation And flashing.
- 101.13.2** Describe the types and applications of common wood and fiber cement sidings.
- 101.13.3** Demonstrate the installation of selected types of siding material.
- 101.13.4** Describe the types and applications of Masonry veneer finishes.
- 101.13.5** Describe the types and styles of gutters and downspouts and their accessories.
- 101.13.6** Demonstrate the installation of metal or vinyl gutters and downspouts.

All work practices must ensure that safe practices are adopted.

Conditions

- **Demonstration to the group of learners.**
- **Examples of materials supplied**

Assessment Method

Assessment methods may involve any of the following methods:

- **Oral questioning**
- **Written tests**
- **Practical exercisers.**

- **Active participation in group activity**

SUGGESTED REFERENCE MATERIALS

- **Hardware and manufacturers manuals**
- **Wheels of learning, Carpentry (nccer) Levels One, Two, Three and Four**
- **Carpentry and Building Construction, Fifth Edition. (Glencoe, McGraw-Hill)**
- **Library Resources**

RESOURCES

- **Workshop Facilities**
- **Demonstration Units**
- **Appropriate Materials and Supplies**

GRADES

Final Grades for this course will be assessed based on COM-FSM policy and 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.