



Semester Curriculum for Facility Maintenance Worker Diploma

1st Semester (Fall)		C-L-SHC
FMW 100	Introduction National Electric Code (NEC)	1-0-1
FMW 101	Basic NEC Problems	1-2-2
FMW 102	Practical Wiring I	2-6-4
FMW 105	Basic Heating	2-2-3
FMW 108	Electrical Blueprints	1-3-2
MAT 101	Applied Mathematics I	<u>2-2-3</u>
		9-15-15

2nd Semester (Spring)		
ENG 102	Applied Communication II	3-0-3
FMW 107	Introduction to Carpentry	1-4-3
MAS 140	Introduction to Masonry	1-2-2
PLU 130	Plumbing Systems	3-9-6
	Major Elective	<u>3-0-3</u>
		11-15-17

3rd Semester (Summer)		
CIS 111	Basic PC Literacy	1-2-2
	Major Elective	<u>0-0-6</u>
		1-2-8

Major Elective Course Listing (Select a minimum of 9 SHC)

AHR 160	Refrigerant Certification	1-0-1
BPR 130	Blueprint Reading/Construction	1-2-2
FMW 103	Practical Wiring II	2-6-4
FMW 104	Introduction to Industrial Wiring	2-6-4
FMW 106	Domestic Air Conditioning	2-2-3
FMW 109	Introduction to Small Engines	2-2-3
HEA 111	First Aid and Safety	1-2-2
ISC 110	Workplace Safety	1-0-1
ISC 115	Construction Safety	2-0-2
PLU 111	Introduction to Basic Plumbing	1-3-2
PLU 140	Introduction to Plumbing Codes	1-2-2

Total Semester Hours Credit: 40

**AHR 160 Refrigerant Certification** 1-0-1

This course covers the requirements for the EPA certification examinations. Topics include small appliances, high pressure systems, and low pressure systems. Upon completion, students should be able to demonstrate knowledge of refrigerants and be prepared for the EPA certification examinations.

**BPR 130 Blueprint Reading/Construction** 1-2-2

This course covers the interpretation of blueprints and specifications that are associated with the construction trades. Emphasis is placed on interpretation of details for foundations, floor plans, elevations, and schedules. Upon completion, students should be able to read and interpret a set of construction blueprints.

**CIS 111 Basic PC Literacy** 1-2-2

This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

**ENG 102 Applied Communications II** 3-0-3

*Prerequisites: RED 080 and ENG 090 or appropriate placement test scores*

This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. The computer is

**Facility Maintenance Worker  
Credential: Diploma in Facility Maintenance  
D5017000**

This curriculum is designed to prepare students to maintain and repair physical structures and systems of commercial and industrial establishments such as hotels, hospitals, apartment complexes and shopping centers. Students will learn to use hand and power tools, replace defective electric switches and fixtures, maintain performance of environmental control systems, and repair plumbing fixtures, woodworking, plastic and sheetrock, lay brick, finish small areas of concrete and paint structures. Upon completion of this curriculum, the graduate should have the necessary skills to find employment as a facility maintenance worker.

Program Length: 3 semesters

Career Pathway Options: Diploma in Facility Maintenance Worker

Program Sites: Lee Campus - Day Program Not Currently Offered

Course Requirements for Facility Maintenance Worker Diploma

A. General Education Courses (6 SHC) C-L-SHC

ENG 102	Applied Communication II	3-0-3
MAT 101	Applied Mathematics	2-2-3

B. Required Major Core Courses (18 SHC)

FMW 102	Practical Wiring I	2-6-4
FMW 105	Basic Heating	2-2-3
FMW 107	Introduction to Carpentry	1-4-3
MAS 140	Introduction to Masonry	1-2-2
PLU 130	Plumbing Systems	3-9-6

C. Other Major Hours Required for Graduation (16 SHC)

CIS 111	Basic PC Literacy	1-2-2
FMW 100	Introduction to NEC	1-0-1
FMW 101	Basic NEC Problems	1-2-2
FMW 108	Electrical Blueprints	1-3-2
	Major Electives	9

Major Elective Course Listing (Select a minimum of 9 SHC)

AHR 160	Refrigerant Certification	1-0-1
BPR 130	Blueprint Reading/Construction	1-2-2
FMW 103	Practical Wiring II	2-6-4
FMW 104	Introduction to Industrial Wiring	2-6-4
FMW 106	Domestic Air Conditioning	2-2-3
FMW 109	Introduction to Small Engines	2-2-3
HEA 111	First Aid and Safety	1-2-2
ISC 110	Workplace Safety	1-0-1
ISC 115	Construction Safety	2-0-2
PLU 111	Introduction to Basic Plumbing	1-3-2
PLU 140	Introduction to Plumbing Codes	1-2-2

Total Semester Hours Credit required for graduation: 40

used as a writing and design tool for this course. *This is a diploma-level course.*

**FMW 100 Introduction to Nat Elec Code** 1-0-1  
This course covers the use of the National Electrical Code. Topics include wiring methods, grounding, general areas of the NEC, and other related topics. Upon completion, students should be able to use the code effectively. *This is a diploma-level course.*

**FMW 101 Basic NEC Problems** 1-2-2  
This course covers sections of the NEC related to calculations. Topics include branch circuits, sizes, wire, conduit, and house problems. Upon completion, students should be able to use the code to find wire and conduit sizes. *This is a diploma-level course.*

**FMW 102 Practical Wiring I** 2-6-4  
This course covers the tools and materials commonly used in the electrical field. Emphasis is placed on mounting, installing, and wiring electrical fixtures common to residential and simple commercial installations. Upon completion, students should be able to properly install boxes, wires, and switches. *This is a diploma-level course.*

**FMW 103 Practical Wiring II** 2-6-4  
*Prerequisites: FMW 102*  
This course covers wiring and circuit layout and the actual building of mock-ups. Topics include using electrical blueprints, planning circuit layouts, and installing electrical equipment. Upon completion, students should be able to properly install electrical and related equipment. *This is a diploma-level course.*

**FMW 104 Intro-Industrial Wiring** 2-6-4  
*Prerequisites: FMW 102*  
This course covers blueprint reading and planning and repairing electrical wiring systems in industrial facilities. Emphasis is placed on reading electrical blueprints when repairing or replacing electrical material in an industrial facility. Upon completion, students should be able to properly repair an electrical system. *This is a diploma-level course.*

**FMW 105 Basic Heating** 2-2-3  
This course covers the fundamentals of heating systems, including oil, gas, and electrical systems and heat pumps. Topics include safety precautions, tools, and materials needed to safely troubleshoot and repair heating systems. Upon completion, students should be able to explain and repair the major components of a heating system. *This is a diploma-level course.*

**FMW 106 Domestic Air Conditioning** 2-2-3  
This course covers the principles of air conditioning, including terminology, identification, and function of component. Topics include compressors, condensers, and motors and controls with emphasis on practical work with hand tools and materials in the installation of air conditioning systems. Upon completion, students should be able to repair an air conditioning system. *This is a diploma-level course.*

**FMW 107 Introduction to Carpentry** 1-4-3  
This course introduces basic carpentry skills. Emphasis is placed on the proper and safe use of hand and power tools used by a beginning carpenter. Upon completion, students should be able to perform basic tasks involving forming, framing, and repair of windows and doors. *This is a diploma-level course.*

**FMW 108 Electrical Blueprints** 1-3-2  
This course introduces the basic principles of blueprint reading for residential electrical systems. Topics include floor plans, switch and receptacle layouts, lighting fixtures, and finished installations. Upon completion, students should be able to interpret basic blueprints. *This is a diploma-level course.*

**FMW 109 Introduction to Small Engines** 2-2-3  
This course provides training in the maintenance and overhaul of two- and four-cycle engines. Emphasis is placed on replacing defective parts and the rebuilding of lawn mowers, rotary tillers, and similar machines. Upon completion, students should be able to repair or rebuild a small engine. *This is a diploma-level course.*

**HEA 111 First Aid and Safety** 1-2-2  
This course provides first aid and safety education. Emphasis is placed on safe attitudes, accident prevention, and response to accidents and injuries. Upon completion, students should be able to demonstrate proper first aid and safety skills.

**ISC 110 Workplace Safety** 1-0-1  
This course introduces the basic concepts of workplace safety. Topics include fire, ladders, lifting, lock-out/tag-out, personal protective devices, and other workplace safety issues related to OSHA compliance. Upon completion, students should be able to demonstrate an understanding of the components of a safe workplace.

**ISC 115 Construction Safety** 2-0-2  
This course introduces the basic concepts of construction site safety. Topics include ladders, lifting, lock-out/tag-out, personal protective devices, scaffolds, and above/below ground work based on OSHA regulations. Upon completion, students should be able to demonstrate knowledge of applicable safety regulations and safely participate in construction projects.

**MAS 140 Introduction to Masonry** 1-2-2  
This course introduces basic principles and practices of masonry. Topics include standard tools, materials, and practices used in basic masonry and other related topics. Upon completion, students should be able to demonstrate an understanding of masonry and be able to use basic masonry techniques.

**MAT 101 Applied Mathematics I** 2-2-3  
*Prerequisites: MAT 060, MAT 070, or MAT 080 or appropriate placement test scores*  
This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study. *This course is intended for certificate and diploma programs.*

**PLU 111 Introduction to Basic Plumbing** 1-3-2  
This course introduces basic plumbing tools, materials, and fixtures. Topics include standard tools, materials, and fixtures used in basic plumbing systems and other related topics. Upon completion, students should be able to demonstrate an understanding of a basic plumbing system.

**PLU 130 Plumbing Systems** 3-9-6

This course covers the maintenance and repair of plumbing lines and fixtures. Emphasis is placed on identifying and diagnosing problems related to water, drain and vent lines, water heaters, and plumbing fixtures. Upon completion, students should be able to identify and diagnose needed repairs to the plumbing system.

**PLU 140 Introduction to Plumbing Codes** 1-2-2

This course covers plumbing industry codes and regulations. Emphasis is placed on North Carolina regulations and the minimum requirements for plumbing materials and design. Upon completion, students should be able to research and interpret North Carolina plumbing codes.