



**2023-2024
NWKTC Catalog and Student Handbook**

Plumbing

Description: The plumbing program is a two-year program that provides a hands-on approach to learning a broad base of skills for a career in plumbing.

Degree/Certificates awarded:
Tech Cert A, Tech Cert B, Tech Cert C
AAS

Accreditation/Certification:
NCCER

- Program Learning Outcomes:**
Upon successful completion of this program, students will be able to:
1. Demonstrate knowledge of safety practices, tools and materials related to the plumbing industry
 2. Demonstrate the ability to read and calculate the estimated materials needed from blue prints
 3. Demonstrate the ability to size, install, test and service drains, wastes and vents
 4. Demonstrate the ability to size, install, test and service water distribution piping
 5. Demonstrate the ability to size, install, test and service fuel gas piping
 6. Demonstrate the ability to install and service plumbing fixtures
 7. Demonstrate the ability to install, service and test backflow prevention devices
 8. Demonstrate the ability to size and install private waste disposal systems
 9. Demonstrate a general knowledge and understanding of the International Plumbing Code
 10. Complete NC3 Ridgid Certifications.

Program Schedule:
Students will attend class from 8:00 a.m. – 2:30 p.m., Monday through Friday

PROGRAM GUIDE

YEAR I: FIRST SEMESTER

Course #	Course Name	Credits
COMM 150	Interpersonal Communications *Online	3
PLM 100	OSHA 10	1
PLM 105	Craft Skills for Plumbing	4
PLM 110	Plumbing Tools and Safety	2
PLM 115	Plumbing Math Calculations and Drawings I	2
PLM 120	Pipes and Fittings	4
PLM 125	DWV and Water Distribution Systems	2
SO 100	Student Success Seminar (Required)	1

YEAR I: SECOND SEMESTER

Course #	Course Name	Credits
MATH 105	Technical Math	3
MATH 107	Technical Math w/Review	3
PLM 130	Plumbing Math Calculations and Drawings II	4
PLM 135	Building Supply Systems	4
PLM 140	Plumbing Fixtures and Valves	3
PLM 145	Electricity and Fuel Gas	2

YEAR II: FIRST SEMESTER

Course #	Course Name	Credits
BA 215	Personal Finance	3
HUM 102	Workplace Ethics	3
PLM 205	Water Supply Systems	4
PLM 210	Venting and Pumps	4
PLM 215	Intermediate Plumbing	3

YEAR II: SECOND SEMESTER

Course #	Course Name	Credits
CF 101	Computer Fundamentals	3
PLM 220	Advanced Plumbing	4
PLM 225	Codes and Special Systems	2
PLM 230	Private Systems	3
PLM 235	Medical Gas and Vacuum Systems	1
PLM 240	Occupational Work Experience	4
PLM 241	Advanced Plumbing Projects	4

COURSE DESCRIPTIONS

PLM 100 OSHA-10
(1 credit)

This course introduces students to basic safety concepts for the general industry OSHA safety program.

PLM 105 CRAFT SKILLS FOR PLUMBING
(4 credits)

This course presents the NCCER Core of introductory craft skills and safety, communication skills, and introduction to construction drawings.

PLM 110 PLUMBING TOOLS AND SAFETY.
(2 credits)

This course introduces students to the plumbing profession; plumbing safety; tools of the trade. Prerequisite: PLM100, PLM 105

PLM 115 PLUMBING MATH AND DRAWINGS I
(2 credits)

This course introduces students to plumbing math and plumbing drawings. Prerequisite: PLM100, PLM 105

PLM 120 PIPES AND FITTINGS
(4 credits)

This course introduces students to plastic pipe and fittings; copper tube and fittings; cast-iron pipe and fittings; and steel pipe and fittings. Prerequisite: PLM100, PLM 105

PLM 125 DWV AND WATER DISTRIBUTION SYSTEMS
(2 credits)

This course introduces students to plumbing fixtures; drain, waste and vent (DWV) systems; and water distribution systems. Prerequisite: PLM100, PLM 105

PLM 130 PLUMBING MATH AND DRAWINGS II.
(4 credits)

This course introduces students to Plumbing Math II, reading commercial drawings; structural penetrations, insulation and fire-stopping. Prerequisite: PLM 115

PLM 135 BUILDING SUPPLY SYSTEMS.
(4 credits)

This course introduces students to Installing and testing DWV; installing roof, floor and area drains; installing and testing water supply piping.

PLM 140 PLUMBING FIXTURES AND VALVES.
(3 credits)

This course introduces students to types of valves; installation of fixtures and valves; installing water heaters.

PLM 145 ELECTRICITY AND FUEL GAS.
(2 credits)

This course introduces students to basic electricity and fuel gas systems.

PLM 200 WATER SUPPLY SYSTEMS.

(4 credits)

This course introduces students to sizing and protecting the water supply system; Potable Water Supply Treatment and applied math for plumbing.

PLM 210 VENTING AND PUMPS.

(4 credits)

This course introduces students to types of venting; sizing DWV and storm systems; sewage pumps and sump pumps.

PLM 215 INTERMEDIATE PLUMBING.

(3 credits)

This course introduces students to corrosive resistant waste piping; compressed air; and service pumping.

PLM 220 ADVANCED PLUMBING.

(4 credits)

This course introduces students to water pressure booster and recirculation systems; indirect and special waste; business principles for plumbers and the fundamentals of crew leadership.

PLM 225 CODES and Special Systems.

(2 credits)

This course introduces students to hydronic and solar heating systems; codes.

PLM 230 PRIVATE SYSTEMS.

(3 credits)

This course introduces students to private water supply well systems; private waste disposal systems; swimming pools and hot tubs; plumbing for mobile homes and travel trailers parks.

PLM 235 MEDICAL GAS AND VACUUM SYSTEMS.

(1 credits)

This course introduces students to medical gas and vacuum systems.

PLM 240 OCCUPATIONAL WORK EXPERIENCE OR SPECIAL PROJECTS

(4 credits)

This course offers students the option to gain practical work experience with a plumber or to complete a special plumbing project demonstrating mastery of the program competencies.