

Gas Utility Construction and Service

Program Code 314692

Technical Diploma - Nine Months (Begins in June)

Offered at the Green Bay campus. For information: (920) 498-5444.

Toll-free: (800) 422-NWTC, ext. 5444.

Program Description

Gas Utility Construction and Service prepares students to install, maintain, and operate natural and propane gas distribution systems used to supply residential, commercial, and industrial customers.

Program Outcomes

- Communicate technical information.
- Operate tools and equipment.
- Join pipe.
- Install propane gas distribution systems.
- Install natural gas distribution systems.
- Apply customer service skills.
- Maintain gas distribution systems.
- Operate pipeline excavation equipment.
- Service gas appliances.
- Opportunity to secure a commercial driver's license (CDL).

Requirements for Program Entry

- Completed application.
- High school transcript or equivalent (such as an HSED or GED® Transcript).
- NWTC Academic Skills Assessment or equivalent (See Academic Skills Assessment section for details and equivalents).
- Be able to obtain a commercial driver's license.
- Place satisfactorily in the NWTC mathematics examination.
- Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog.

Notes

- Students receive a certificate from the Midwest Energy Association. This certificate is recognized throughout the United States.
- Students also receive selected Pipeline Operator qualifications as mandated by the Federal Office of Pipeline Safety.
- Students who have completed the Gas Utility Construction and Service technical diploma program have the opportunity to fulfill the requirements for a Utility Management certificate and/or apply these credits toward a Leadership Development and/or an Individualized Technical Studies associate degree.

Employment Potential

A graduate of this program will have the potential for employment in the following areas:

Propane Gas Delivery Person: delivers bulk propane gas to customers and interacts with customers.

New Customer Tank and Cylinder Installer: installs propane and connects piping to customer appliances.

Bulk Plant Operator: fills and maintains cylinders and fills bulk delivery trucks.

Gas Construction Mechanic: installs and maintains gas distribution and transmission pipelines using trenching, backhoe, underground road boring, plastic fusion, welding, mapping, and record keeping skills.

Gas Meter Mechanic: installs, repairs, and maintains electronic and mechanical gas metering equipment.

Gas Service Mechanic: installs and maintains residential, commercial, and industrial gas piping, valving, pressure regulating, and over-pressure protective equipment.

Gas Clerk-Estimator: develops specifications and related maps and records used in installing and maintaining gas distribution facilities. Records of this type are manual but are moving towards computer emphasis.

Gas Regulator Maintenance Mechanic: installs and maintains high pressure gas regulating, measuring, odorizing, heating, filtering, valving, and piping systems; electronically and mechanically operated equipment is involved.

Gas Appliance Repair Mechanic: maintains and troubleshoots residential and/or commercial gas appliances and heating/cooling equipment.

Underground Facilities Locator: locates and marks all underground facilities prior to excavation using various locating equipment.

With additional education and/or work experience, graduates may find other opportunities for employment.

- Construction Crew Foreman
- Corrosion Technician
- Meter and Regulator Technician
- Utility Locating Supervisor
- Pipeline Welder
- Vendor Sales and Marketing

Curriculum

The Gas Utility Construction and Service Technical Diploma is a nine-month, three-semester program. Upon graduation, a student will have completed 33 credits.

First Semester

Catalog No.	Description	Credits
10-804-110	Elem Algebra w Apps	3
31-442-315	Welding-Gas Service 1	2
31-469-310	Gas Utility Field Trng 1	4
Semester Total		9

Second Semester

31-413-348	Electricity-Basic	2
31-442-325	Welding-Gas Service 2	2
31-469-320	Gas Utility Field Trng 2	5
31-469-330	Gas Utility Field Trng 3	5
31-801-385	Communicating-Writing	1
31-801-386	Communicating Effectively	1
Semester Total		16

Third Semester

31-413-358	Electricity-Gas Applianc	2
31-422-310	Metallurgy	2
31-469-340	Gas Utility Field Trng 4	4
Semester Total		8
Total Credits		33

This program is fully eligible for financial aid.

Please Note

- Some courses have prerequisites (listed at the end of each course description, if applicable) that need to be taken prior to enrolling in those courses.
- Many courses are offered via our Flexible Learning Options (online, accelerated, ITV, video, weekend, and self-paced) and may be taken in any order as long as prerequisites are met. To find out which program courses are offered through Flexible Learning Options, go to www.nwtc.edu or consult a counselor, (920) 498-5444.
- Descriptions of courses not found on this page can be found in the back of this catalog.

Course Descriptions

These courses provide an opportunity for students to develop the knowledge, skills, and understanding required for employment in this field.

31-413-348 ELECTRICITY-BASIC ...electron theory, electrical terms, Ohm's Law, DC and AC circuits, magnetism and magnetic devices, electrical measurements, inductance and capacitance, relays and transformers, motors and generators, circuit protective devices, electrical safety. (Prerequisite: Accepted into Gas Utility Construction & Service)

31-413-358 ELECTRICITY-GAS APPLIANCE

...electrical sources/circuits in gas appliances, safe practices, test equipment, reading wiring diagrams, gas/electrical control functions, ignition systems, sequence of operation and troubleshooting. (Prerequisite: 31-413-348, Electricity Basic)

31-422-310 METALLURGY ...manufacture of iron and steel, mechanical and physical properties of metals, metal identification, macro and microscopic grain structures, welding metallurgy, applied heat treating processes, and weld failures and fractures.

31-442-315 WELDING-GAS SERVICE 1 ...position pipe welding utilizing oxyacetylene and gas metal arc welding, welding safety, weld faults and causes, weld joint design, and fitup. (Prerequisite: Accepted into Gas Utility Construction & Service)

31-442-325 WELDING-GAS SERVICE 2 ...position pipe welding utilizing gas metal arc welding and shielded metal arc welding processes, pipe fitup, and pipe weld testing according to API 1104 code. (Prerequisite: 31-442-315, Welding-Gas Service 1)

31-469-310 GAS UTILITY FIELD TRAINING 1

...construction equipment safety and operation (trenching, backhoe, boring), equipment maintenance, gas and vehicular safety, field mapping. (Prerequisite: Accepted into Gas Utility Construction & Service)

31-469-320 GAS UTILITY FIELD TRAINING 2

...natural gas line installation standards for plastic pressure testing, fusion, leak detection procedures, general installation procedures and repair of plastic mains and services, introduction to propane gas systems and safety. (Prerequisite: 31-469-310, Gas Utility Field Training 1)

31-469-330 GAS UTILITY FIELD TRAINING 3

...installation and repair of steel mains and services, applied field welding and maintenance, line testing and leak detection procedures, approved safety installation procedures using hand tools and supportive equipment. (Prerequisite: 31-469-320, Gas Utility Field Training 2)

31-469-340 GAS UTILITY FIELD TRAINING 4

...installation, maintenance, and repair of residential gas appliances, venting codes, line stoppering equipment, corrosion control, regulators, metering, first aid, and customer service training. (Prerequisite: 31-469-330, Gas Utility Field Training 3)