

Facilities Maintenance

27-credit Technical Diploma

About the Program

A graduate of the Facilities Maintenance program will be ready for a career maintaining and repairing residential and light commercial structures. Highly qualified instructors are ready to help the student learn the principles and skills related to electricity, electronic controls and instrumentation, basic plumbing, hydronics, building codes and blueprint reading, electro-mechanical devices, general repair and heating, ventilation, and air conditioning. In addition, students will study related federal, state, and local regulations, and learn to assess and solve problems during emergency situations.

Hospitals, shopping malls, industrial sites, office complexes, apartment buildings and schools are just a few of the sites in which Facilities Maintenance graduates may work.

Potential Job Titles

- Maintenance Mechanic

Admission Process

- Fill out a WCTC application
- Send \$30 non-refundable application fee
- Send high school transcript or GED/HSED
- Send any previous college transcripts
- Complete Skills Assessment test (COMPASS)
- Begin pursuing Financial Aid options

For more information call 262.691.5200.

Required Courses

		Credits
First Semester		
414-386	Industrial Electricity I	2
419-340	Facility Fluid Power	1
443-310	Facilities Maintenance I	2
443-325	Buildings and Grounds Maintenance	2
443-340	Mechanical Maintenance Applications	2
443-350	Facility Plumbing Maintenance	2
804-304	Industrial Math I	2+
Total semester credits		13
Second Semester		
401-300	Refrigeration Servicing	2
414-389	Industrial Electricity II	2
435-318	Power Plant Operation and Maintenance	2
442-350	Welding and Cutting/Basic	1
443-323	Facilities Management	2
443-332	HVAC Fundamentals	2
475-312	Construction Computer Skills	1
801-311	Communication in the Workplace	2+
Total semester credits		14

+ Proficiency exam available

Curriculum is current as of catalog printing. The most current curriculum requirements for graduation will be provided upon admission to program, or review at www.wctc.edu.

Facilities Maintenance Required Courses

401-300 Refrigeration Servicing 2
 Discover the basic procedures for the diagnosis and repair of mechanical and electrical problems common to vapor-compression refrigeration systems. Become familiar with fractional and multiple horsepower systems that employ standard heat-absorbing and heat-rejecting components. Prerequisites: 414-386

414-386 Industrial Electricity I 2
 Discuss topics such as the atomic nature of electricity, stressing units, basic definitions and symbols, series and parallel circuits, magnetism, inductance, capacitance, generators, motors, and basic alternating current circuits.

414-389 Industrial Electricity II 2
 Explore the selection, application, troubleshooting, and maintenance of electrical control devices and circuitry. Focus on line/ladder logic diagrams, motor starters, time delay logic, AC power systems, control devices, reduced voltage starter circuits, accelerating and decelerating circuits, and reversing circuits for single, three-phase, and DC motors. Prerequisites: 414-386

419-340 Facility Fluid Power 1
 Start by gaining knowledge of the physics behind fluid power systems, machinery and the transmission of hydraulic power. The mechanical components that comprise fluid power systems are studied in depth along with their maintenance. The course makes extensive use of hydraulic trainers in order to give "hands on" experience. The ultimate goal is to develop effective troubleshooting techniques. Safety is a major concern in performing work on hydraulic equipment and systems and this will be covered throughout the course in all its aspects.

435-318 Power Plant Op and Maint 2
 Become familiar with the operation of steam boilers and other power plant auxiliary equipment. Study safety, the efficient operation of boilers, and boiler maintenance. Explore the topics of refrigeration, electricity, turbines, pumps, licensing codes, and terminology.

442-350 Welding and Cutting/Basic 1
 Learn and apply basic welding and cutting skills.

443-310 Facilities Maintenance I 2
 Prepare to be a multi-level service technician within the facilities maintenance technology field by developing skills in using mathematics and taking measurements, working with metals, using hand and portable power tools, and reading blueprints, schematics, and symbols.

443-323 Facilities Management 2
 Develop skills in construction management, budgeting, energy conservation, tenant interaction, and compliance.

443-325 Buildings and Grounds 2
 Explore topics such as building codes, exterior and interior masonry, concrete, framing, drywall, painting, door and window maintenance, ceiling grid, floor covering, repair and remodel techniques, and other carpentry fundamentals. Study concepts in landscape maintenance.

443-332 HVAC Fundamentals 2
 Train in air balance, gas piping, combustion controls, installation, and start up as you study heating, ventilating, and air conditioning applications. Learn about equipment connections, heat pumps, evacuation techniques, leak detection, repair and charging procedures, cooling systems, and controls.

443-340 Mechanical Maintenance Apps 2
 Explore the applications of mechanical maintenance by examining topics such as mechanical drives, installing and replacing bearings and shaft seals, pump installation, pipefitting, tubing and hose systems, and valve maintenance and installation.

443-350 Facility Plumbing Maintenance 2
 Learn about residential and commercial plumbing systems. Plumbing blueprint reading will be covered along with the drawing of piping systems. Additionally, there is a strong emphasis on commercial plumbing equipment that is encountered in the field of facility maintenance. Learn about plumbing fixtures, and piping maintenance and installation techniques for a variety of pipe types. The course goal is to develop students who are capable of replacing existing plumbing pipes, plumbing fixtures and maintain the different types of plumbing systems. Safety is a great concern in plumbing work and students will learn how to protect themselves from pathogens encountered and safe plumbing tool use techniques.

475-312 Construction Computer Skills 1
 Study the basic competencies of computers and their application in the construction industry. Learn about basic computer use, software programs used in the industry, hardware, word processing, and basic spreadsheet use.

801-311 Communication in the Workplace 2
 Expand level of awareness and skill in interpersonal communications, both oral and written, while focusing on securing and maintaining a job. Develop competencies in the area of listening, sending, and employability skills.

804-304 Industrial Math I 2
 Explore the topics of applied arithmetic and algebra during this course. Study concepts related to measurement, fractions, decimals, percents, ratio and proportion, signed numbers, formula substitution, solutions to equations, tapers and gears.