

FACILITIES MAINTENANCE TECHNOLOGY - HVAC/R

pcc.edu/programs/facilities-maintenance

CAREER AND PROGRAM DESCRIPTION

The Facilities Maintenance Technician (FMT) installs, maintains, and repairs HVAC/R and other equipment and systems where environmental quality is essential. FMTs work in the semi-conductor industry, large health care facilities, heavy industry organizations, commercial facilities, or for HVAC/R companies.

This program will provide the student with the skills to enhance a career in facilities maintenance. It was designed by the advisory committee to meet industry requirements. Students learn the skills and concepts necessary to install, operate, maintain and repair control, piping and mechanical systems in large commercial, medical, institutional and industrial buildings. Students also learn trouble shooting skills, problem solving methods and electrical concepts. Continuous improvement techniques and effective written, verbal and electronic communications skills are stressed across the curriculum. Classes are designed in lecture and lecture/lab format to give the student a solid foundation in general maintenance skills including HVAC/R. Print reading and troubleshooting skills are emphasized.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Facilities Maintenance Technology

LESS THAN ONE-YEAR CERTIFICATE

Facilities Maintenance Technology

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

HVAC/R Installer

Oregon State Bureau of Labor and Industries Approved Pre-Apprenticeship Training

Academic Prerequisites

- It is required that students place into MTH 20, into IRW 90 or (WR 90 or higher and RD 90 or higher). Individual course prerequisites are listed in the course descriptions.

Academic Requirements

- None

Non-Academic Prerequisites

- None

Non-Academic Requirements

- None

FACILITIES MAINTENANCE AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of fourteen to sixteen credits of General Education. Students must complete a total of four courses of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

Facilities Maintenance Degree Courses

Code	Title	Credits
APR 162	Calculations for the Trades §	4
ARCH 162	Commercial Print Reading	2
ELT 125	Basic Programmable Logic Controllers	2
ELT 126	Intermediate Programmable Logic Controllers (PC Based)	2
ELT 201	Electrical Motor Control	2
ELT 204	Adjustable Speed Drives	2
ELT 220	OSHA 30 Hr Safety Training	3
ELT 225	Advanced Programmable Controllers, PC Based	2
FMT 100	Introduction to Facilities Maintenance Systems	2
FMT 101	Refrigeration I	2
FMT 102	Refrigeration II	2
FMT 103	Refrigeration III	2
FMT 111	Refrigeration Electrical I	2
FMT 112	Refrigeration Electrical II	2
FMT 113	Refrigeration Electrical III	2
FMT 119	Water Treatment and Distribution	2
FMT 122	Introduction to Boilers	3
FMT 125	Natural Gas Equipment I	2
FMT 177	Introduction to Applied Technologies for the Trades	3
FMT 201	Introduction to Chiller Systems	3
FMT 202	Direct Digital Control Advanced Technology	3
FMT 207	Pneumatic Controls	2
FMT 222	Intermediate Boilers	3
FMT 280A	Cooperative Work Experience	8
PHY 101	Force, Motion, and Energy *	4
PSY 101	Psychology and Human Relations *	4
Facilities Maintenance Program Electives		14
General Education: 2 courses		
Total Credits		90

* Could be used as General Education

§ Course cannot be substituted for another course.

FACILITIES MAINTENANCE PROGRAM ELECTIVES

Any AB, AMT, APR, ARCH, BA, BCT, BI, CADD, CAS, CIS, CMET, CH, COMM, CS, DS, DST, EET, ELT, ENGR, ESR, FMT, GS, HE, HPE, MCH, MSD, MT, MTH (100 level and above), PE, PHY, SPA, WLD courses not found within the degree or certificate course of study. WR 227, ART 292, and ART 294.

LESS THAN ONE-YEAR CERTIFICATE

Facilities Maintenance Technology (p. 2)

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

HVAC/R Installer (p. 2)

Oregon State Bureau of Labor and Industries Approved Pre-Apprenticeship Training

FACILITIES MAINTENANCE LESS THAN ONE-YEAR CERTIFICATE

Minimum 44 credits. Students must meet all certificate requirements.

Facilities Maintenance Certificate Courses

Code	Title	Credits
ARCH 162	Commercial Print Reading	2
ELT 125	Basic Programmable Logic Controllers	2
ELT 220	OSHA 30 Hr Safety Training	3
FMT 100	Introduction to Facilities Maintenance Systems	2
FMT 101	Refrigeration I	2
FMT 102	Refrigeration II	2
FMT 103	Refrigeration III	2
FMT 111	Refrigeration Electrical I	2
FMT 112	Refrigeration Electrical II	2
FMT 113	Refrigeration Electrical III	2
FMT 119	Water Treatment and Distribution	2
FMT 122	Introduction to Boilers	3
FMT 125	Natural Gas Equipment I	2
FMT 177	Introduction to Applied Technologies for the Trades	3
FMT 201	Introduction to Chiller Systems	3
FMT 202	Direct Digital Control Advanced Technology	3
FMT 222	Intermediate Boilers	3
Facilities Maintenance Program Electives		4
Total Credits		44

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Any AB, AMT, APR, ARCH, BA, BCT, BI, CADD, CAS, CIS, CMET, CH, COMM, CS, DS, DST, EET, ELT, ENGR, ESR, FMT, GS, HE, HPE, MCH, MSD, MT, MTH (100 level and above), PE, PHY, SPA, WLD courses not found within the degree or certificate course of study. WR 227, ART 292, and ART 294.

HVAC/R INSTALLER CAREER PATHWAY CERTIFICATE

Minimum 14 credits. Students must meet all certificate requirements. The HVAC/R Installer Certificate is a Career Pathway. All courses for the certificate are contained in the Facilities Maintenance AAS Degree.

HVAC/R Installer Certificate Courses

Code	Title	Credits
FMT 101	Refrigeration I	2
FMT 102	Refrigeration II	2
FMT 103	Refrigeration III	2
FMT 111	Refrigeration Electrical I	2
FMT 112	Refrigeration Electrical II	2
FMT 113	Refrigeration Electrical III	2
FMT 210	Basic HVAC/R Installation & Techniques	2
Total Credits		14