

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 |

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.

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 |