

HVAC Apprentice - Suggested Courses

Companies use TPC's Training Needs Analysis to implement highly successful technical skills training for apprenticeship programs. These programs are tailored precisely to the needs of their plants/facilities and maintenance workforce. We've organized the results of these analyses into job/craft-specific apprenticeship curricula for a variety of maintenance positions. Each curriculum includes those TPC courses most frequently selected by organizations like yours to meet the performance goals for their maintenance apprentices.

The suggested curricula provide a proven starting point for planning your own apprenticeship programs. TPC can help fine-tune your program for your unique workforce requirements using our copyrighted Training Needs Analysis process—it's simple, accurate, and only takes a few hours.



HVAC Apprentice Curriculum

The suggested curriculum for HVAC apprentices includes 52 technical skills courses. Each course contains 5-12 detailed, topic-specific lessons for a total of 382 lessons in this curriculum. The subject matter ranges from fundamental knowledge required by an entry-level apprentice to advanced competencies for your senior apprentices.

Fundamentals

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|------------------------------------|------------------------------------|
| 101 - Reading Blueprints | 106 - Nonmetals in the Plant |
| 102 - Reading Schematics & Symbols | 107 - Hand Tools |
| 103 - Mathematics in the Plant | 108 - Portable Power Tools |
| 104 - Making Measurements | 109.1 - Industrial Safety & Health |
| 105 - Metals in the Plant | 110 - Troubleshooting Skills |

Industrial Hazard Control

- 151 - OSHA Hazard Communication Standard

Electrical Systems

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| 201 - Basic Electricity & Electronics | 209 - AC Control Equipment |
| 203 - Transformers & AC Circuits | 210 - Electrical Troubleshooting |
| 205.1 - Electrical Safety & Protection | |

Mechanical Systems

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|--------------------------------|---------------------------------|
| 301 - Basic Mechanics | 306 - Piping Systems |
| 302 - Lubricants & Lubrication | 309 - Basic Pneumatics |
| 304 - Bearings | 310 - Pneumatic Troubleshooting |
| 305 - Pumps | |

Mechanical Maintenance Applications

343 - Bearing & Shaft Seal Maintenance
 345 - Maintenance Pipefitting

346 - Tubing & Hose System Maintenance
 347 - Valve Maintenance/Piping System Protection

Energy Conservation

377 - Energy Losses in Buildings

378 - Heating/Cooling System Efficiency

Welding

416 - Blueprint Reading for Welders
 417 - Welding Principles

418 - Oxyfuel Operations

Air-Conditioning & Refrigeration Systems

431 - The Refrigeration Cycle
 432 - Refrigerants & Refrigerant Oils
 433 - Compressors
 434 - Evaporators & Metering Devices
 435 - Condensers & Cooling Towers
 436 - Piping
 437 - Control Systems

438 - Air-Handling Systems
 439 - System Troubleshooting
 440 - Absorption Chillers
 441 - Heat Pumps
 442 - Heating System Basics
 443 - Heating System Equipment

Microprocessors

261 - Introduction to Computers — User Level

262 - Input/Output Devices I — User Level

Process Instrumentation

271 - Introduction to Process Control

277 - Temperature Measurement

PLCs

298 - Programmable Logic Controllers

Rigging/Equipment Installation

318 - Industrial Rigging Principles & Practices

319 - Equipment Installation

Additional Suggested TPC Apprentice Curricula

Electrical/Instrumentation Systems
 Electrical Systems
 Facility/Building Maintenance
 Instrumentation/Control Systems
 Lubricator/Oiler
 Machinist/Tool & Die Maker

Mechanical Systems
 Millwright
 Multi-Craft Maintenance
 Pipefitter
 Refrigeration/Utilities
 Welder