

# **CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT**

## **HVAC MAINTENANCE ENGINEER**

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are **not** intended to reflect all duties performed within the job.*

### **SUMMARY DESCRIPTION**

Under direction, perform skilled mechanical work in the repair, inspection, servicing, and alteration of District heating, ventilation, air conditioning, and refrigeration systems and related equipment and facilities including chillers, direct expansion units, hot water boilers, air handling units, exhaust fans, circulating pumps, and energy management equipment; operate and maintain a wide variety of hand and power tools and equipment; assure classrooms and offices are kept at comfortable room temperatures; and assist in performing other skilled maintenance duties as assigned.

### **REPRESENTATIVE DUTIES**

*The following duties are typical for this classification. Incumbents may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.*

1. Inspect, test, troubleshoot, service, maintain, and repair heating, ventilation, air conditioning, and refrigeration equipment including chillers, direct expansion units, hot water boilers, air handling units, exhaust fans, circulating pumps, and associated piping systems.
2. Install, replace, repair, and adjust valves, thermostats, fans, pressure and air regulators, filters, belts, bearings, fuses, controls, motors, control centers, disconnects, relays, switches, gauges, air compressors, blowers, dryers, and pumps; test joints and insulate pipes of refrigeration and air conditioning systems; clean, lubricate, and adjust systems as required.
3. Rebuild water and circulating pumps as required.
4. Maintain and repair cafeteria refrigeration systems.
5. Install, wire and program Energy Management Systems components; utilize desk top computer to diagnose and program system.
6. Determine, locate, and acquire parts, supplies, and equipment necessary for repair or maintenance.
7. Perform electrical, pneumatic, and mechanical testing of equipment.
8. Diagnose mechanical and electrical problems; repair or replace defective parts in units and equipment and systems.
9. Fabricate and install minor sheet metal work and ducting; perform brazing and soldering as necessary.
10. Operate a variety of tools and power equipment and testing equipment utilized in the trade; maintain equipment in effective and safe working conditions.
11. Perform preventive maintenance for heating ventilation and air conditioning and refrigeration equipment.
12. Lead crew of maintenance workers when required.
13. Assist other crafts as required to facilitate completion of their tasks.
14. Perform related duties as required.

**MINIMUM QUALIFICATIONS**

*The following generally describes the knowledge and ability required to enter the job and/or be learned within a short period of time in order to successfully perform the assigned duties.*

**Knowledge of:**

1. Methods, practices, equipment, and tools used in the repair and maintenance of air conditioning, heating, ventilation, and refrigeration systems.
2. Methods and techniques of troubleshooting and diagnosing of HVAC malfunctions.
3. HVAC system design, equipment capabilities, and requirements.
4. The application, installation, programming and maintenance of a computerized energy management system (EMS).
5. Electronic, pneumatic and mechanical principles as applied to the maintenance and repair of heating, ventilation and air conditioning systems.
6. Proper methods, materials, tools, terminology, and equipment used in the HVAC and refrigeration trades.
7. The application and use of testing equipment used in checking, testing and analyzing HVAC and refrigeration systems such as gauge sets, leak detectors, thermometers and hydronic readout kits.
8. The application and use of electrical testing equipment normally associated with HVAC and refrigeration systems such as voltmeters, ohmmeters, ammeters, voltage testers, and circuit tracers.
9. Air compressors and pneumatic controls.
10. Fabrication and installation of sheet metal products and ducting used in the HVAC trade.
11. Basic welding and soldering techniques.
12. Proper methods of storing equipment, materials, and supplies.
13. Office procedures, methods, and equipment including computers and applicable software applications.
14. Methods and techniques of preparing and interpreting drawings, diagrams, schematics and blueprints.
15. Principles and procedures of record keeping.
16. Occupational hazards and standard safety practices.
17. Pertinent federal, state, and local codes, laws, and regulations including applicable codes, ordinances, and regulations of state and local authorities pertaining to HVAC, refrigeration, and boilers.

**Ability to:**

1. Perform skilled mechanical maintenance duties in the inspection, repair, installation, and alteration of District heating, ventilation, air conditioning and refrigeration systems and related equipment and facilities.
2. Diagnose defects and install, repair, and maintain heating, ventilating, refrigeration, and air conditioning units.
3. Inspect, maintain, and repair building HVAC, refrigeration, and hot water boiler systems.
4. Troubleshoot and repair electrical control circuits related to HVAC and refrigeration systems and components.
5. Troubleshoot and repair direct digital controls (DDC) EMS components.
6. Troubleshoot and repair pneumatic temperature control equipment.
7. Program computer for an EMS.
8. Develop and modify Windows based display screens.

**Chabot-Las Positas Community College District  
HVAC Maintenance Engineer (Continued)**

9. Lay out, estimate and procure material for projects.
10. Read and interpret mechanical drawings, schematics, blueprints and sketches.
11. Operate office equipment including computers and supporting software applications.
12. Meet schedules and time lines.
13. Ensure adherence to safe work practices and procedures.
14. Work independently with little direction.
15. Understand and follow oral and written instructions.
16. Plan and organize work.
17. Maintain accurate records and prepare reports.
18. Communicate clearly and concisely, both orally and in writing.
19. Establish and maintain effective working relationships with those contacted in the course of work.
20. Work with and exhibit sensitivity to and understanding of the varied racial, ethnic, cultural, sexual orientation, academic, socio-economic, and disabled populations of community college students.

**Minimum Education & Experience** - *Any combination of the following would provide a typical way to obtain the required knowledge and abilities.*

**Education/Training:**

Equivalent to the completion of the twelfth grade supplemented by specialized training in heating, ventilation, refrigeration, and air conditioning repair and maintenance.

**Experience:**

Four years of experience that demonstrates journey-level skill in the heating, ventilation, refrigeration, and air conditioning trade.

**License or Certificate:**

Possession of an appropriate, valid driver's license.

Possession of a certificate of successful completion of an HVAC apprenticeship training program.

Possession of an Environmental Protection Agency (EPA) license for refrigerant recovery.

**PHYSICAL DEMANDS AND WORKING ENVIRONMENT**

*The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.*

**Environment:** Work is performed primarily in indoor and outdoor environments; travel from site to site; exposure to noise, dust, grease, smoke, fumes, noxious odors, gases, electrical energy, and all types of weather and temperature conditions; work and/or walk on various types of surfaces including slippery or uneven surfaces and rough terrain; work at heights on scaffolding and ladders.

**Physical:** Primary functions require sufficient physical ability and mobility to walk, stand, and sit for prolonged periods of time; frequently stoop, bend, kneel, crouch, crawl, climb, reach, and twist; push, pull, lift, and/or carry moderate to heavy amounts of weights; requires a sense of touch, finger dexterity, gripping with fingers and hands; operate assigned equipment and vehicles; and verbally communicate to exchange information.

**Chabot-Las Positas Community College District  
HVAC Maintenance Engineer *(Continued)***

8/24/99;

Adopted by Board of Trustees on October 20, 2015

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Job Family: Maintenance and Operations