

LANEY COLLEGE
Environmental Control Technology
Spring semester

Course: Commercial HVAC Systems Troubleshooting

Course Number/code: ECT 024 L20448

Time: Wednesday 7:00pm to 10:00pm.

Instructor: Charles Frost

Office: B151

Office Hours: Wednesday 5:00pm to 5:30pm

Phone: 510/464-3292

Units: 2 units.

Course Description: Introduction to commercial (HVAC) Heating, Ventilation and Air Conditioning Systems using proper tools and instrumentation for troubleshooting building components such as chillers, boilers, fans, pumps, variable frequency drives, and associated ventilation and zone equipment that form complex systems. This course will also cover proper maintenance procedures for energy conservation.

Student Outcomes:

1. Demonstrate proper use of tools and instrumentation for troubleshooting commercial building systems and controls
2. Describe the mechanical and electrical equipment sequence of operations for building systems and controls
3. Demonstrate proper safety practices when working on equipment and controls
4. Demonstrate proper maintenance procedures for optimizing system performance and energy savings

Recommended preparation: basic skill levels in reading, writing, and math,

Text Book: Air conditioning Principles and Systems by Edward G. Pita

Supplies Needed: Pencils, colored highlighters, graph paper, line paper, safety glasses, gloves, medium flat blade, flathead and phillips screwdrivers, two adjustable wrenches one 8" and one 12", combination wire cutter, stripper and crimper, one roll of electrical tape, wire connectors, fuse puller, digital multi-meter and tool box.

Lecture: The class will concentrate on the following areas:

1. Review of building HVAC systems.
2. Overview of the Psychometric processes of air
3. Review of electrical theory and instrumentation
4. Energy savings using economizer, temperature reset and equipment schedules
5. Overview of proper building equipment operation and maintenance procedures

6. Evaluation of system performance as compared to the design intent of the building.

Grading Policy:	Attendance and class participation	50%
	Midterm	25%
	Final	25%
Total: 100 points		

Attendance: Students may be dropped from the course if the number of absences exceeds two days worth of class meetings. However, extenuating circumstances may warrant consideration.