

Laney's Environmental Control Technology Curriculum

The curriculum is designed so that the courses for one certificate program become the foundation for the next.

	Units
1st Semester	
Residential and Light Commercial HVACR	
Fundamentals of Refrigeration	4
Mechanical and Electrical Devices and Controls	2
Technical Mathematics for ECT	3
Blueprint Reading and Interpretation	1.5
Fundamentals of Electricity for ECT	2
Welding for ECT Technicians	1.5
Mechanical and Electrical Codes	1.5
2nd Semester	
Advanced Refrigeration	2
Refrigeration Equipment Troubleshooting	2
Fundamentals of Heating and Air Conditioning	2
Heating and Air Conditioning Troubleshooting	1
HVACR Installation Practices	1
Motors and Drives	2
Energy Management and Efficiency in Building Systems	2
Certificate of Achievement, total units:	27.5 (2 semesters)
3rd Semester	
Advanced Courses in Commercial HVACR Systems	
Commercial HVACR Systems	2
Commercial HVACR Systems Troubleshooting	2
Introduction to Building Commissioning	2
Testing, Adjusting, and Balancing	2
Commercial Electricity for HVACR Applications	2
Psychrometrics and Load Calculations	2
Introduction to Direct Digital Controls	2
4th Semester	
Advanced DDC Controls	4
Advanced Building Commissioning	3
Indoor Air Quality and Building Envelope	1
HVACR System Design	2
Data Analysis for Performance Monitoring	2
Introduction to Control Systems Networking	1
Advanced Certificate of Achievement, total units:	52.5

Certificates and Degrees

- **Certificate of Achievement in Residential and Light Commercial HVACR** Requires completion of full-time, 2-semester program.
- **Advanced Certificate of Achievement in Commercial HVACR** Requires completion of advanced courses in semester 3-4.
- **Associate of Science Degree in Residential and Light Commercial HVACR**
- **Associate of Science Degree in Commercial HVACR Systems**

We strongly encourage all students to complete the necessary coursework to receive an Associate of Science (AS) degree in ECT. This includes a minimum requirement of 19 units of General Education courses.

Academic Transfer

Most of the courses in this program are transferable to California state universities.

How to Enroll

To register for environmental control technology classes, you must first apply to Laney. Two ways to apply:

- 1) Visit www.laney.peralta.edu (link to "Enroll Now!")
- 2) Apply in person.

Counselors are available: 510-464-3122

Financial Aid

The State of California provides financial aid to help students go to college. Many students qualify to receive financial aid. Even students who are working full time are eligible for a waiver of fees.

Apply at: www.laney.peralta.edu (click "Financial Aid") or call: 510-464-3292

For more information visit:
 Environmental Control Technology Program
 Room B-150, Laney College
 900 Fallon Street, Oakland, CA 94607
 510-464-3292
www.laney.peralta.edu/ect



Environmental Control Technology

(Heating, Ventilation, Air Conditioning and Refrigeration)



- Refrigeration Technician
- HVACR Technician
- Building Operator
- Energy Manager
- Commissioning Technician
- Building Performance Technician
- Controls Technician
- HVACR Sales



Environmental Control Technology
 Room B150
 510-464-3292
nkyriakopedi@peralta.edu

ECT: Build a Green Future

Did you know that commercial buildings consume over 1/3 of the electric energy used in California? Increasing energy efficiency takes hands-on, technical knowledge and electronic and computer-based skills, which you can learn in the Environmental Control Technology (ECT) program. ECT students install, service and operate heating, ventilation, air conditioning and refrigeration (HVACR) and building controls systems. Well-trained ECT technicians specialize in either residential and light commercial systems, or large, commercial and industrial systems. ECT is a green field, challenging, and rapidly changing.

“ECT is a good career path to follow. The jobs can't be outsourced, and you can make good money. It's a growing field that meets the green objectives and philosophy of business today.”

Steve Tuttle, Vice President,
Building Services Division, ACCO Engineered Systems

In both public and private sectors, current demand for well-trained technicians is high and rapidly increasing, due to growing market demands in green technology, energy efficiency and sustainability. Laney's ECT program certificates and degree qualify for immediate employment.

Inside the Laney College state-of-the-art, commercial HVACR lab.



- Are you interested in green technology, environmental conservation and sustainability?
- Do you like to work with your hands?
- Do you enjoy solving problems?
- Do you enjoy working as part of a team?

Graduate with an Associate of Science (AS) degree, and you will develop communication, advanced math, and science skills which will give you greater opportunities for career advancement in the field.

The ECT program trains HVACR technicians, and benefits both new students and workers returning to college to update their skills and knowledge. ECT courses cover theory and current technical information necessary for employment. You will acquire a variety of skills and mathematical abilities, ranging from welding to systems design, installation and analysis, troubleshooting, energy management, and direct digital controls.

“ECT courses are very intense, but it's worth it. Every class you take, you learn what you need to know in the field.”

Veronica Padilla, Laney College Graduate



Laney Works for Me

Laney College • 900 Fallon Street • Oakland, CA 94607



“The program at Laney opened my eyes to a whole spectrum of opportunities. I got a new job through the school.”

Bill Pottinger, PG&E

A grant from the National Science Foundation (NSF) has supported the ECT program in the design of a comprehensive sequence of courses in commercial HVACR, energy management, and building control systems, as well as providing students with a state-of-the-art, commercial HVACR and building controls lab, and instructional software.

INDUSTRY AND EDUCATIONAL PARTNERS:

- ACCO Engineered Systems • Automated Logic Corp.
- Bayside HVAC Products • Belimo Air Controls
- Bell Systems • California Energy Commissioning
- California Polytechnic Univ., College of Engineering
- Carrier Corp. • Center for the Built Environment, UC Berkeley • Controlco • CSU East Bay • Danfoss Co. • EB Ward • Facility Dynamics, Inc. • Freeman Heating & Air Conditioning • Frontline Building Technologies • Honeywell • Institute for Sustainable Building Performance • Johnson Controls • Lawrence Berkeley National Laboratories • New Mechanical • PG&E • Quantum Energy Services & Technologies (QuEST) • Siemens Building Technologies
- TAC/Yamas • Taylor Engineering, Inc. • Trane Co. • Univ. of California, Office of the President
- Western Cooling Efficiency Center, UC Davis
- York International