

**Did you know that commercial buildings consume over 1/3 of the electrical 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.

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.

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.



## How to Enroll

Apply for Admission at:

1. Welcome Center: Building A, Room A101
2. Admissions & Records: Building A, Room A109
3. Online: [passport.peralta.edu](http://passport.peralta.edu)

## Financial Aid

Contact Information

Location: Administration Tower 2nd Floor, 20I  
 Website: [laneyfinancial@peralta.edu](mailto:laneyfinancial@peralta.edu)  
 Loan Information: [lanestudentloans@peralta.edu](mailto:lanestudentloans@peralta.edu)  
 Phone: 510-464-3414 Fax: 510-464-3418

## Certificates and Degrees

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.

- 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

### Academic Transfer

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

# ECT & Building Automation Careers at Laney



**Enroll Now**



**Environmental Controls  
Technology and  
Building Automation**

Careers in  
Environmental  
Controls

ECT bio tech welding electricity machine tech architecture



# ECT: Build a Green Future

## Residential and Light Commercial HVACR

### FIRST SEMESTER

Course#	Course Title	Units
ECT 13	Fundamentals of Refrigeration	4
ECT 11	Mechanical and Electrical Devices and Controls	2
ECT 214	Technical Mathematics for ECT	3
ECT 12	Blueprint Reading and Interpretation	1.5
E/ET 202	Fundamentals of Electricity for ECT	2
WELD 215	Welding for ECT Technicians	1.5
ECT 211	Mechanical and Electrical Codes	1.5

### SECOND SEMESTER

ECT 14	Advanced Refrigeration	2
ECT 15	Refrigeration Equipment Troubleshooting	2
ECT 16	Fundamentals of Heating and Air Conditioning	2
ECT 17	Heating and Air Conditioning Troubleshooting	1
ECT 18	HVACR Installation Practices	1
E/ET 221	Motors and Drives	2
ECT 28	Energy Management & Efficiency in Bldg Systems	2

**Certificate of Achievement, total units: 27.5**

## Advanced Certificate of Achievement,

### THIRD SEMESTER

ECT 22	Commercial HVACR Systems	2
ECT 24	Commercial HVACR Systems Troubleshooting	2
ECT 25	Introduction to Building Commissioning	2
ECT 212	Testing, Adjusting, and Balancing	2
E/ET 11	Commercial Electricity for HVACR Applications	2
ECT 19	Psychrometrics and Load Calculations	2
ECT 211	Introduction to Direct Digital Controls	2

### FOURTH SEMESTER

ECT 27	Advanced DDC Controls	4
ECT 26	Advanced Building Commissioning	3
ECT 213	Indoor Air Quality and Building Envelope	1
ECT 23	HVACR System Design	2
ECT 29	Data Analysis for Performance Monitoring	2
ECT 40	Introduction to Control Systems Networking	1

**Advanced Certificate of Achievement, total units: 52.5**

## Building Automation

### FIRST SEMESTER

Course#	Course Title	Units
ECT 214	Technical Mathematics for ECT	3
E/ET 202	Fundamentals of Electricity for ECT	2
ECT 01	Physics for Building Science	4
E/ET - ECT 37	Introduction to PC Hardware & Software for Building Technicians	3

### SECOND SEMESTER

ECT 11	Mechanical & Electrical Devices & Controls	2
ECT 22	Commercial HVAC Systems	2
ECT 24	Commercial HVAC Systems Troubleshooting	2
ECT 21	Introduction to Direct Digital Controls	2
E/ET- ECT 31	Introduction to DDC Hardware for Building Automation Systems	3
E/ET 221	Motors & Drives	2

### THIRD SEMESTER

ECT 27	Advanced Direct Digital Controls	2
ECT 25	Introduction to Building Commissioning	2
ECT 12	Blueprint Reading & Interpretation for ECT	1.5
ECT 32	Control Systems Design	2
E/ET 33 - ECT 33	Control Systems Networking	3
ECT 212	Testing, Adjusting, & Balancing	2

### FOURTH SEMESTER

ECT 34	Control Routines for Energy Efficiency	2
ECT 35	Control Systems Integration	2
ECT 36	Energy Issues, Policies, & Codes	1.5
ECT 29	Data Analysis for Performance Monitoring	2
ECT 26	Advanced Building Commissioning	3

**Certificate of Achievement, total units: 48**

Total units required for AS degree 66  
(including General Education requirements)

ECT 01 meets General Ed. requirements for Natural Science



*Not a Job, a Career!*

**Environment Controls Technology** 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. For more information visit:

**Building Automation** Industry is seeing a growing demand for a workforce that combines some of the traditional skill sets of building technicians with advanced skills in controls programming, networking, and systems integration. "Control Technicians" or "Building Automation Technicians" present an emerging and rapidly expanding market of high-wage employment for community college graduates. Their skill sets will also be needed for increasing green workforce demands to implement energy management, efficiency and sustainability measures in buildings.

Environmental Control Technology Program

Room B-150, Laney College

900 Fallon Street, Oakland, CA 94607

510-464-3292

[www.laney.peralta.edu/ect](http://www.laney.peralta.edu/ect)

ECT bio tech welding electricity  
welding machine tech  
graphic arts media architecture