

# ENVIRONMENT CONTROL TECHNOLOGY



The Environment Control Technology Department prepares students for entry-level employment in the field of Air Conditioning, Heating and Refrigeration Systems, and Environmental Control Technology (HVAC). Students completing these degrees/certificates will have a basic foundation in troubleshooting and repair of air conditioning, heating and refrigeration systems.

Career opportunities upon successful completion of this degree are HVAC/R technician, sales, service, and repair.

## Contact Information

### Environmental Control Technology Faculty Contact

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### Industry and Technology Division Chair

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### Dean of CTE and Workforce Development

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## Associate Degree

- Associate of Science in Environmental Control Technology (HVAC) (AS) (<https://catalog.cos.edu/areas-study/environment-control-technology/associate-science-environmental-control-technology-hvac-not-for-transfer-as/>)

## Certificates

- Certificate of Achievement in Environmental Control Technology (HVAC) (<https://catalog.cos.edu/areas-study/environment-control-technology/certificate-achievement-environmental-control-technology/>)

For a complete list of courses and descriptions visit: COURSES (<https://catalog.cos.edu/course-descriptions/>)

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### ECT 242 Air Conditioning Sheet Metal 4unit(s)

Hours: 3 Lecture/Discussion Hours:  
3 Lab

This course provides an introduction to basic air conditioning sheet metal theory, design, drafting, bending, shaping, soldering, tools and equipment used to fabricate fittings.

### ECT 280 Electrical Theory and Applications of Controls for HVAC 4unit(s)

Hours: 3 Lecture/Discussion Hours:  
3 Lab

This basic course in electrical theory and applications of controls for the heating, ventilating, air conditioning/refrigeration controls class explores the theories and concepts of Ohms and Kirchoff's laws, in addition to the theories and concepts of refrigeration.

**Corequisites:** ECT 281 must be taken concurrently.

### ECT 281 Basic Air Conditioning 12unit(s)

Hours: 11 Lecture/Discussion Hours:  
3 Lab

ECT 281 is an introductory lecture and demonstration course in residential air conditioning, refrigeration and heating that covers applied refrigeration theory, including how to evacuate and charge systems, diagnose refrigeration problems and how to properly install an entire duct system in the project house. In addition, proper brazing techniques, tools and safety practices are taught as applied to various other trades.

**Corequisites:** ECT 280 must be taken concurrently.

### ECT 282 Advanced Air Conditioning/Refrigeration Commercial/Domestic 12unit(s)

Hours: 9 Lecture/Discussion Hours:  
9 Lab

An advanced course offered in Environmental Control Technology that covers commercial and domestic air conditioning and refrigeration theory. Topics include the fundamentals of wiring circuits and the concept of electrical problem solving as it relates to both commercial and residential applications. Topics also include using methods to calculate heat loads values necessary to sizing equipment in the industry.

**Advisory on Recommended Preparation:** ECT 281 or equivalent college course with a minimum grade of C.

## Environmental Control Technology

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 B.S., California State University, Fresno

Serrato Aldaco, Ramiro  
 B.S., California Coast University