

REFRIGERATION AND AIR CONDITIONING MECHANICS

Pathway: Construction, Maintenance & Utilities
 Chair: William (Bill) Elarton, Room SQ/B-122
 (213) 763-3700, cdm@lattc.edu



Award Title	Award Type	GE Units	Required Course Units	Major Elective Units	Major Units
Refrigeration & Air Conditioning Mechanics* — (day only)	A.S.	21*	42	6	48
Refrigeration & Air Conditioning Mechanics — (day only)	C		42	6	48
Refrigeration & Air Conditioning Mechanics* — (evening only)	A.S.	21*	43	5	48
Refrigeration & Air Conditioning Mechanics — (evening only)	C		43	5	48

At least 60 degree applicable units are required to earn an Associate degree.

*This Associate Degree is eligible for a reduction of General Education requirements from 21 to 18 units; please consult with a counselor for more details.

For additional related certificates, refer to programs under Operation & Maintenance Engineering: Steam Plant.

PROGRAM OVERVIEW

Cooling and heating devices help regulate the temperature, humidity, and air quality in residential homes, commercial locations, and industrial facilities. Critical items like food and medicine require refrigeration to keep them from spoiling. Technicians repair, maintain, and install heating, air-conditioning, and refrigeration systems. Our program trains these technicians. Los Angeles Trade-Technical College offers an Associate of Science degree in Refrigeration and Air Conditioning Mechanics, as well as Certificate of Achievement.

By fulfilling the program requirements, students will have the necessary knowledge and skills for a career in residential, commercial, and Industrial service and repair of air conditioning, heating and refrigeration systems. Environmental Protection Agency (EPA) refrigerant certification will be received. Electrical controls, piping installation, compressor installation and repair are just some of the skills that would be mastered during this program.

PROGRAM LEARNING OUTCOMES (PLOs)

Upon completion of the **Degree/Certificate** program, students are able to:

1. Students will maintain and repair air conditioning and refrigeration systems using appropriate test instruments and tools effectively and safely.
2. Students will analyze the proper operation of air conditioning and refrigeration systems by applying the principles of thermodynamics and electrical theory.
3. Students will certify the proper and efficient operation of air conditioning and refrigeration systems by measuring temperatures, pressures, combustion gasses, and air flow.

REFRIGERATION & AIR CONDITIONING MECHANICS

Associate in Science Degree
 Major Units: 48

Requirements for the Associate in Science degree in [Refrigeration & Air Conditioning Mechanics](#) may be met by completing **42 units** of Required Courses and **6 unit** of Major Electives with a "C" or better along with [General Education units](#). Information on the General Education unit requirements may be found in the catalog under Graduation Requirements.

Courses from the day or evening programs should not be mixed in an attempt to meet the degree requirements.

OPTION 1: DAY PROGRAM

REQUIRED COURSES

SEMESTER I		UNITS
REF A/C 111 †	Fundamentals of Refrigeration	3
REF A/C 101	Air Conditioning & Refrigeration Principles & Practices-First Semester	9
ECONMT 119	Applied Calculations and Measurements	3
-or- ECONMT 173	Electrical Mathematics I (3)	
SEMESTER II		UNITS
REF A/C 123	Pipe and Tube Joining Processes	1
REF A/C 124	Refrigeration Electrical Circuits and Controls	5
REF A/C 125	Refrigeration System Components	3
ECONMT 174	Electrical Mathematics II	3
SEMESTER III		UNITS
REF A/C 133	Refrigeration Service Procedures I	3
REF A/C 134	Service for Commercial Refrigeration	3
REF A/C 135	Air Conditioning and Refrigeration	3
SEMESTER IV		UNITS
REF A/C 141	Applied Refrigeration and Air Conditioning Principles	3
REF A/C 143	Refrigeration Servicing Procedures II	3
REF A/C 145	Air Conditioning and Refrigeration Mechanics	3

OPTION 2: EVENING PROGRAM

REQUIRED COURSES

LEVEL I		UNITS
REF A/C 202	Refrigeration Fundamentals	3
REF A/C 250	Indoor Air Quality	3
ECONMT 115	Fundamentals of D.C. Electricity	3
ECONMT 173	Electrical Mathematics I	3
LEVEL II		UNITS
REF A/C 159	Principles and Practices of Electrical Circuits and Controls 4	4
REF A/C 203	Compression Systems of Refrigeration	3
REF A/C 204	Functions and Compression System Components	3
ECONMT 129	Fundamentals of Alternating Current	3

OPTION 2: EVENING PROGRAM

REQUIRED COURSES - CONTINUED

LEVEL III		UNITS
REF A/C 187	Servicing I	3
REF A/C 188	Servicing II	3
REF A/C 208	Refrigerant Management-EPA Section 608 Certification	4

LEVEL IV		UNITS
REF A/C 160	Refrigeration System Principles and Practices	4
REF A/C 164	Gas Heating Systems	4

MAJOR ELECTIVES

DAY PROGRAM: **Select at least 6 units from the courses below**

EVENING PROGRAM: **Select at least 5 units from the courses below**

		UNITS
BLDGCTQ 101	Contract's License Law	3
ECONMT 100	(O.S.H.A.) Safety Standards: Construction and Industry	2
PHYSICS 012	Physics Fundamentals	3
REF A/C 100	Air Conditioning Project Management	3
REF A/C 161	Air Conditioning System Principles and Practices	4
REF A/C 162	Piping Principles and Practices	4
REF A/C 164	Gas Heating Systems	4
REF A/C 165	Ice Storage Air Conditioning	4
REF A/C 176	Heating and Air Conditioning I	3
REF A/C 177	Heating and Air Conditioning II	3
REF A/C 187	Servicing I	3
REF A/C 188	Servicing II	3
REF A/C 250	Indoor Air Quality	3
REF A/C 199	Mechanical Code I - HVACR	3
REF A/C 208	Refrigerant Management-EPA Section 608 Certification	4
REF A/C 209	North American Technician Excellence (Nate) - Air Conditioning Specialist Certification Preparation	4
REF A/C 210	Refrigeration System Efficiency Factors	3
REF A/C 941	Cooperative Education-Refrigeration & Air Conditioning Mech	4

REFRIGERATION & AIR CONDITIONING MECHANICS

Certificate of Achievement

Major Units: 48

A Certificate of Achievement in Refrigeration & Air Conditioning Mechanics may be earned by completing 42 units of Required Courses and 6 unit of Major Electives listed under the Associates degree in Refrigeration & Air Conditioning with a "C" or better in each course.

Courses from the day or evening programs should not be mixed in an attempt to meet the degree requirements.

USEFUL LATTC LINKS:

College Catalog: <http://college.lattc.edu/catalog/>

Financial Aid Office: <http://college.lattc.edu/financialaid/>

Counseling Department: <http://college.lattc.edu/counseling/>

General Education Information: <http://college.lattc.edu/catalog>

Construction, Design, and Manufacturing Pathway: <http://college.lattc.edu/cdm>

You can register in these classes by logging on to the Student Information System at <http://college.lattc.edu/student/new-students/register-now/>

For additional information consult a LATTC college counselor.