

RENEWABLE ENERGY WITH ENERGY EFFICIENCY EMPHASIS



Pathway: Construction, Maintenance & Utilities
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| Award Title | Academic Plan | Award Type | GE Units | Required Course Units | Major Elective Units | Major Units |
|--|---------------|------------|----------|-----------------------|----------------------|-------------|
| Renewable Energy: Energy Efficiency* | T031090C | A.S. | 21* | 36-38 | 4 | 40-42 |
| Energy Systems Technology Fundamentals | T030906D | C | | 16 | - | 16 |
| Weatherization and Energy Efficiency | T030210D | C | | 12 | - | 12 |

At least 60 degree applicable units are required to earn an Associate degree.
 *This Associate Degree may be eligible for a reduction of General Education requirements from 21 to 18 units; please consult with a counselor for more details. These programs are Financial Aid Eligible, except Weatherization and Energy Efficiency.

PROGRAM OVERVIEW

LATTC offers a series of courses for individuals interested in working in the new, emerging renewable energy and energy efficiency industry. This degree program includes courses that enable individuals to: (1) have the requisite knowledge and skills to obtain employment in the energy/utility sector and (2) obtain skills and expertise to pursue other renewable energy and/or energy efficiency occupations.

By fulfilling the program requirements, students will have the necessary knowledge and skills for a career in residential and commercial renewable energy-related occupations.

PROGRAM LEARNING OUTCOMES (PLOs)

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

- Use energy efficiency diagnostic tools such as door blowers and duct blasters to determine air infiltration into buildings.
- Calculate energy usage in terms of electrical, mechanical and heat energy units.
- Recommend alternative energy methods to reduce utility costs and provide green energy substitutes for fossil fuel energy forms.

RENEWABLE ENERGY: ENERGY EFFICIENCY

Associate in Science Degree

Major Units: 40-42

Requirements for the Associate in Science degree in Renewable Energy Technician W/ Energy Efficiency Emphasis may be met by completing 36-38 units of Required Courses and 4 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.

REQUIRED COURSES

| SEMESTER I | | UNITS |
|-------------|--|-------|
| ECONMT 115 | Fundamentals of D.C. Electricity | 3 |
| ECONMT 116 | Hand Tools and Wiring Practices | 2 |
| BLDGCTQ 010 | Energy and Utility Industry Careers | 3 |
| ECONMT 119 | Applied Calculations and Measurements | 3 |
| | -or- ECONMT 173 Electrical Mathematics I (3) | |
| | -or- MATH 115 or higher Elementary Algebra (3-5) | |

| SEMESTER II | | UNITS |
|-------------|--|-------|
| ECONMT 129 | Fundamentals of Alternating Current | 3 |
| ECONMT 100 | (O.S.H.A.) Safety Standards: Construction and Industry | 2 |
| CRPNTRY 148 | Computer Assisted Estimating I | 3 |

| SEMESTER III | | UNITS |
|--------------|---|-------|
| REF A/C 100 | Air Conditioning Project Management | 3 |
| ECONMT 110 | Renewable Energy Systems | 3 |
| BLDGCTQ 007 | Weatherization – Practical Energy Efficiency Techniques | 3 |
| BLDGCTQ 008 | Weatherization - Energy Efficiency Practices | 1 |

| SEMESTER IV | | UNITS |
|-------------|--|-------|
| BLDGCTQ 009 | Energy Auditor – Residential | 3 |
| BLDGCTQ 012 | Energy Auditor – Residential Practices | 1 |
| ECONMT 171 | Electrical Codes and Ordinances I | 3 |
| | -or- PLUMBNG 028 Plumbing Code I (3) | |
| BLDGCTQ 921 | Cooperative Education-Building Construction Techniques | 2 |

MAJOR ELECTIVES

| 1 or more courses from the following list of courses | | UNITS |
|--|--|-------|
| ECONMT 105 | Fundamentals of Solar Electricity | 3 |
| ECONMT 205 | Solar Energy Installation & Maintenance Principles and Practices | 2 |
| REF A/C 105 | Solar Water & Pool Heating System Principles | 3 |
| REF A/C 110 | Solar Water & Pool Heating System Practices | 2 |
| REF A/C 165 | Ice Storage Air Conditioning | 4 |

ENERGY SYSTEMS TECHNOLOGY FUNDAMENTALS

Certificate of Achievement

Major Units: 16

A Certificate of Achievement in Energy Systems Technology Fundamentals may be earned by completing 16 units of Required Courses listed below, with a "C" or better in each course.

The goal of the Energy Systems Technology Fundamentals Certificate of Achievement Program is to provide short-term industry-recognized training for entry-level professionals in the utility/energy sector; a significant industry sector in the Los Angeles region.

Skills gained from this program prepare a student for employment at the entry level in jobs such as; Los Angeles Department of Water and Power "Electrical Utility Helper" classification, Southern California Edison's "Utility Helper" position, City of Los Angeles "Electrical Craft Helper".

PROGRAM LEARNING OUTCOMES (PLOs)

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

- Use electrical drawings and other related documents and graphics to communicate information effectively.
- Calibrate, use, and maintain tools, instrumentation and test equipment.

REQUIRED COURSES

UNITS

| | | |
|-----------------|--|---|
| BLDGCTQ 010 | Energy and Utility Industry Careers | 3 |
| ECONMT 100 | (O.S.H.A.) Safety Standards: Construction and Industry | 2 |
| ECONMT 115 | Fundamentals of D.C. Electricity | 3 |
| ECONMT 116 | Hand Tools and Wiring Practices | 2 |
| ECONMT 119 | Applied Calculations and Measurements | 3 |
| -or- ECONMT 173 | Electrical Mathematics I (3) | |
| ECONMT 129 | Fundamentals of Alternating Current | 3 |

WEATHERIZATION AND ENERGY EFFICIENCY

Certificate of Achievement

Major Units: 12

A Certificate of Achievement in Weatherization and Energy Efficiency may be earned by completing 12 units of Required Courses listed, with a "C" or better in each course.

LATTC offers a series of courses for individuals interested in employment as weatherization and energy efficiency specialists. The courses are developed both for new building professionals and for professional builders/contractors already in the workforce in need of these skills. Homeowners may also find the introduction class helpful. Individuals will be prepared to be weatherization, energy efficiency, and retrofit technicians, home improvement retrofit trainees, residential air sealing technicians, insulation installers, energy conservation representatives or residential energy field auditors.

PROGRAM LEARNING OUTCOMES (PLOs)

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

- Perform new and retrofit weatherization and related energy efficiency operations using hand and power tools, testing equipment, and other P.P.E. in accordance to industry standards.
- Evaluate site and remediation strategies through building orientation, erosion, water management.

REQUIRED COURSES

UNITS

| | | |
|-------------|---|---|
| BLDGCTQ 007 | Weatherization - Practical Energy Efficiency Techniques | 3 |
| BLDGCTQ 008 | Weatherization - Energy Efficiency Practices | 1 |
| BLDGCTQ 009 | Energy Auditor – Residential | 3 |
| BLDGCTQ 012 | Energy Auditor – Residential Practices | 1 |
| BLDGCTQ 921 | Cooperative Education-Building Construction Techniques | 2 |
| ECONMT 100 | (O.S.H.A.) Safety Standards: Construction and Industry | 2 |

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, Maintenance & Utilities Pathway:

<http://pathways.lattc.edu/catalog-programs/cmu/>

To register: <http://college.lattc.edu/student/new-students/register-now/>

For additional information consult a LATTC college counselor.