

ELECTRICAL CONSTRUCTION & MAINTENANCE



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
Electrical Construction and Maintenance: Electrician* —(day only)	A.S.	21*	42	6	48
Electrical Construction and Maintenance: Electrician —(day only)	C		42	6	48
Electrical Construction and Maintenance: Construction Technician* —(evening only)	A.A.	21*	40	8	48
Electrical Construction and Maintenance: Construction Technician* —(evening only)	C		40	8	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.

PROGRAM OVERVIEW

To meet the training needs of persons interested in becoming an Electrician LATTC offers an Electrical Construction and Maintenance Associate of Science degree, and Electrical Construction and Maintenance Construction Technologies Associate of Arts degree, as well as Certificates of Achievement.

The Associate in Science degree is designed for individuals seeking entry level positions in the field. Students enrolling in this program should be able to commit to full time student status, which is approximately 24 hours per week in the classrooms and laboratories, plus at least 12 hours of homework every week. This time commitment is necessary to allow for hands on training in the laboratory applications used during the course of instruction.

The Associate in Arts degree is an evenings only course of study designed for individuals, currently working in the electrical field, who want to improve or expand their skills. Due to the limitations of the student's available evening hours, much of the hands on laboratory component is assumed to be provided at the student's place of employment. Depending on availability, the Associate in Arts degree may require more time to complete. See the Department Chair for details prior to enrolling.

By fulfilling the program requirements, students will have the necessary knowledge and skills for a career in Residential, Commercial, and Industrial Construction and Maintenance of Electrical Systems. Electrical theory, electrical controls, conduit installation, blueprints, low voltage systems, maintenance practices, equipment installation, etc. are just some of the skills that will be mastered during this program.

PROGRAM LEARNING OUTCOMES (PLOs)

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

1. Use electrical trade hand and power tools in accordance with industry and safety standards.
2. Analyze and solve mathematical problems related to the electrical trade.
3. Locate and interpret technical information from the National Electrical Code.

ELECTRICAL CONSTRUCTION AND MAINTENANCE: ELECTRICIAN

Associate in Science Degree
Major Units: 48

Requirements for the Associate in Science degree in Electrical Construction and Maintenance: Electrician 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.

REQUIRED COURSES

SEMESTER I		UNITS
ECONMT 115	Fundamentals of D.C. Electricity	3
ECONMT 116	Hand Tools and Wiring Practices	2
ECONMT 117	Elementary Circuit Practices	4
ELECTIVE		3
SEMESTER II		UNITS
ECONMT 120	Industrial Control Systems	3
ECONMT 128	Industrial Control Systems Practices	3
ECONMT 129	Fundamentals of Alternating Current	3
ECONMT 169	Alternating Current Practices	2
ELECTIVE		1
SEMESTER III		UNITS
ECONMT 130	Principles of Industrial Electric Power	3
ECONMT 136	Industrial Power Applications	3
ECONMT 137	Industrial Electronic Control Systems	3
ECONMT 138	Applications of Electrical and Electronic Devices	2
ELECTIVE		1
SEMESTER IV		UNITS
ECONMT 140	Construction Wiring Principles and Practices	3
ECONMT 150	Introduction to the Electrical Codes	3
ECONMT 167	Electrical Construction Wiring Techniques	3
ECONMT 168	Installation of Electrical Wiring	2
ELECTIVE		1

MAJOR ELECTIVES

Select at least 6 unit from the courses below		UNITS
ECONMT 001	Resistive Circuit Electrical Fundamentals	3
ECONMT 006	Security & Fire Alarm Technician Certification	3
ECONMT 007	Home Theater & Comm Audio Video Installation	3

	Theory & Practices	
ECONMT 100	(O.S.H.A.) Safety Standards: Construction and Industry	2
ECONMT 101	Electrical Craft Helper	4
ECONMT 105	Fundamentals of Solar Electricity	3
ECONMT 110	Renewable Energy Systems	3
ECONMT 119	Applied Calculations and Measurements	3
ECONMT 142	Basic Programmable Logic Controls (PLC)	1
ECONMT 159	Programmable Logic Controls (PLC)	4
ECONMT 164	Sustainable Lighting Principles & Practices	3
ECONMT 171	Electrical Codes and Ordinances I	3
ECONMT 172	Electrical Codes and Ordinances II	3
ECONMT 173	Electrical Mathematics I	3
ECONMT 174	Electrical Mathematics II	3
ECONMT 177	Electric Motor Control I	3
ECONMT 178	Electric Motor Control II	3
ECONMT 181	Basic Wiring Practices	3
ECONMT 182	Basic Diagram and Circuit Practices	1
ECONMT 183	Residential Electric Wiring	3
ECONMT 184	Motor Control Principles and Practices	3
ECONMT 185	Directed Study - Electrical Construction and Maintenance	1
ECONMT 185L	Directed Study, Electrical Construction And Maintenance (Lab)	1
ECONMT 186	Industrial Electrical Principles and Practices	3
ECONMT 187	Advanced Programmable Controllers	4
ECONMT 190	Electrical Code Calculations	3
ECONMT 191	Commercial Wiring and Practices	2
ECONMT 192	Residential Wiring and Practices	2
ECONMT 193	Conduit Bending and Calculations	3
ECONMT 193A	Conduit Bending Laboratory	1
ECONMT 195	Grounding: Fundamentals, Applications and Practices	3
ECONMT 196	Infrastructure Wiring Practices	4
ECONMT 197	Low Voltage Electrical Practices	3
ECONMT 199	Journeyman Electrician Exam Preparation	3
ECONMT 205	Solar Energy Installation & Maintenance Principles & Practices	2
ECONMT 212	Significant Changes NEC - National Electrical Code	3
ECONMT 215	Small Wind Energy Systems Principles and Practices	3
ECONMT 285	Directed Study - Electrical Construction and Maintenance	2
ECONMT 285L	Directed Study, Electrical Construction and Maintenance (Lab)	2
ECONMT 385	Directed Study - Electrical Construction and Maintenance	3
ECONMT 385L	Directed Study, Electrical Construction and Maintenance (Lab)	3
ECONMT 941	Cooperative Education -Electrical Construction & Maintenance	4

ELECTRICAL CONSTRUCTION AND MAINTENANCE: ELECTRICIAN

Certificate of Achievement

Major Units: 48

A Certificate of Achievement in Electrical Construction and Maintenance: Electrician may be earned by completing 42 units of Required Courses and 6 units of Major Electives listed under the Associates degree in Electrical Construction and Maintenance: Electrician with a "C" or better in each course.

ELECTRICAL CONSTRUCTION & MAINTENANCE: CONSTRUCTION TECHNICIAN

Associate in Arts Degree

Major Units: 48

Requirements for the Associate in Arts degree in Electrical Construction and Maintenance: Construction Technician may be met by completing 40 units of Required Courses and 8 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
ECONMT 119	Applied Calculations and Measurements	3
	<i>or - ECONMT 173 Electrical Mathematics I (3)</i>	
ECONMT 100	(O.S.H.A.) Safety Standards: Construction and Industry	2
	<i>or - BLDGCTQ 102 OSHA Based Safety Standards: Construction & Industry (2)</i>	

SEMESTER II		UNITS
ECONMT 177	Electric Motor Control I	3
ECONMT 181	Basic Wiring Practices	3
ECONMT 182	Basic Diagrams and Circuit Practices	1
ECONMT 129	Fundamentals of Alternating Current	3

SEMESTER III		UNITS
ECONMT 120	Industrial Control Systems	3
ECONMT 178	Electric Motor Control II	3
ECONMT 128A	Industrial Control Systems Practices	1
ECONMT 128B	Industrial Control Systems Practices	1
ELECTIVE		2

SEMESTER IV		UNITS
ECONMT 171	Electrical Codes and Ordinances I	3
ECONMT 184	Motor Control Principles and Practices	3
ELECTIVE		3

SEMESTER V		UNITS
ECONMT 172	Electrical Code and Ordinances II	3
ECONMT 186	Industrial Electrical Principles & Practices	3
ELECTIVE		3

MAJOR ELECTIVES

Select at least 8 units from the courses below		UNITS
ECONMT 1	Resistive Circuit Electrical Fundamentals	3
ECONMT 6	Security And Fire Alarm Technician Certification	3
ECONMT 7	Home Theater & Commercial Audio, Video Installation Theory and Practices	3
ECONMT 101	Electrical Craft Helper	4
ECONMT 105	Fundamentals of Solar Electricity	3
ECONMT 110	Renewable Energy Systems	3

ECONMT 117	Elementary Circuit Practices	4
ECONMT 128	Industrial Control Systems Practices	3
ECONMT 128C	Industrial Control Systems Practices C	1
ECONMT 129	Fundamentals of Alternating Current	3
ECONMT 130	Principles of Industrial Electric Power	3
ECONMT 136	Industrial Power Applications	3
ECONMT 137	Industrial Electronic Control Systems	3
ECONMT 138	Applications of Electrical and Electronics Devices	2
ECONMT 140	Construction Wiring Principles and Practices	3
ECONMT 142	Basic Programmable Logic Controls (PLC)	1
ECONMT 150	Introduction to the Electrical Codes	3
ECONMT 159	Programmable Logic Controls (PLC)	4
ECONMT 164	Sustainable Lighting Principles & Practices	3
ECONMT 167	Electrical Construction Wiring Techniques	3
ECONMT 168	Installation of Electrical Wiring	2
ECONMT 169	Alternating Current Practices	2
ECONMT 174	Electrical Mathematics II	3
ECONMT 183	Residential Electric Wiring	3
ECONMT 185	Directed Study - Electrical Construction and Maintenance	1
ECONMT 185L	Directed Study, Electrical Construction and Maintenance (Lab)	1
ECONMT 187	Advanced Programmable Controllers	4
ECONMT 190	Electrical Code Calculations	3
ECONMT 191	Commercial Wiring and Practices	2
ECONMT 192	Residential Wiring and Practices	2
ECONMT 193	Conduit Bending and Calculations	3
ECONMT 193A	Conduit Bending Laboratory	1
ECONMT 195	Grounding: Fundamentals, Applications and Practices	3
ECONMT 196	Infrastructure Wiring Practices	4
ECONMT 197	Low Voltage Electrical Practices	3
ECONMT 199	Journeyman Electrician Exam Preparation	3
ECONMT 205	Solar Energy Installation & Maintenance Principles and Practices	2
ECONMT 212	Significant Changes NEC - National Electrical Code	3
ECONMT 215	Small Wind Energy Systems Principles and Practices	3
ECONMT 285	Directed Study - Electrical Construction and Maintenance	2
ECONMT 285L	Directed Study, Electrical Construction and Maintenance (Lab)	2
ECONMT 385	Directed Study - Electrical Construction and Maintenance	3
ECONMT 385L	Directed Study, Electrical Construction and Maintenance (Lab)	3
ECONMT 941	Cooperative Education -Electrical Construction & Maintenance	4

ELECTRICAL CONSTRUCTION & MAINTENANCE: CONSTRUCTION TECHNICIAN

Certificate of Achievement Major Units: 48

A Certificate of Achievement in Electrical Construction and Maintenance: Construction Technician may be earned by completing 40 units of Required Courses and 8 units of Electives listed under the Associates degree in Electrical Construction and Maintenance: Construction Technician with a "C" or better in each course.

USEFUL LATTTC 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 LATTTC college counselor.