



2009-2010
Career and Technical
Programs

Apprenticeship
Program
(541) 463-5843

Associate of
Applied Science
Degree, Electrician
Apprenticeship
Technologies

Certificate of
Completion,
Limited Electrician
Apprenticeship
Technologies

Certificate of
Completion,
Electrician
Apprenticeship
Technologies

Electrician Apprenticeship Technologies

Purpose To provide a structured system of training leading to certification in the electrician trade or occupation. Only apprentices registered with Bureau of Labor and Industries may enroll in Electrician Apprenticeship Technologies courses. Individual employers sponsor students while they learn technical and theoretical aspects of the electrician trade. By working cooperatively with the employer to complete all related training classes and following the joint apprenticeship and training committee rules and policies, a student may achieve journey-level status. The Oregon community college Electrician Apprenticeship Technologies Pathway provides statewide transfer opportunities, ladder certificates of completion, and an optional transfer path into Oregon Institute of Technology Bachelor of Science in Operations Management degree. The Electrician Apprenticeship Technologies pathway includes an advising guide with a set of recommended courses that satisfy both the AAS and the Oregon Transfer Module (OTM). Students who complete the recommended set of OTM courses may apply for 45 credits of guaranteed block transfer to any other community college or Oregon University System institution.

Learning Outcomes The graduate will:

- perform the duties and responsibilities of the electrician trade/occupation
- apply theory to electrical wiring
- demonstrate and use industry safety standards
- develop attitudes conducive to improve customer relations skills in the electrician trade
- develop communication and critical thinking skills necessary for job advancement
- use appropriate library and information resources to research professional issues and support lifelong learning
- access library, computing, and communications services, and appropriately select information and data from regional, national, and international networks

- represent, analyze and determine rules for finding patterns relating to linear functions, non-linear functions and arithmetic sequences with tables, graphs, and symbolic rules
- adapt to new job requirements to qualify for advancement in becoming lead supervisors.
- repair and install electrical wire devices according to licensure regulations to meet NEC and OSC for Inside Electrician, Limited Energy Technician-License A and License B, Limited Maintenance Electrician, and Manufacturing Plant Electrician.
- complete 4000-8000 hours State of Oregon-approved on-the-job-training.

Employment Trends Demand for licensed electricians continues to be strong and steady. The Oregon Employment Department predicts that the statewide demand for electricians will grow by 12% and Oregon employers will need to fill 2,320 electrician positions between 2006 and 2016.

Wages Journey-level electrician wages range regionally from \$18.00/hr for Limited Energy Technicians License B to \$28.39/hr for Inside Electricians. Although wages vary, the average starting wage of an apprentice is about 50 percent of a journey worker's rate of pay. Apprentices usually earn a five-percent raise every six months if training and school performance is satisfactory. Check the Bureau of Labor and Industries website: www.boli.state.or.us

Costs in Addition to Tuition (estimate) Estimated costs of books and tools for the required general education courses total approximately \$850-1,000 over a four-year period. Costs of books and tools for the related training classes in the electrician programs vary with each individual trade/occupation.

Program Certification An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has

Electrician Apprenticeship Technologies

met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit.

Licensing or Other Certification Exams Electrician trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Admission Deadline Varies; some joint apprenticeship and training committees only accept applications once a year.

Pre-requisites Minimum placement scores – Reading 68, Writing 64, and Math parts A, B, C with 7/10 score. Note: See the counselor or advisor to obtain the suggested entry-level skills for successful completion of these programs.

Criteria Used for Admission Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. Selection to the program is by a point system from a pool of qualified applicants. Information on the point system is available at the Oregon Bureau of Labor and Industries website: www.boli.state.or.us. In most cases minimum qualifications to begin an apprenticeship include a minimum age of 18 years, a high school diploma with a GPA of 2.0 or higher or GED, and a minimum of a ‘C’ grade for one year of high school algebra (or equivalent).

Program Advisor Colleen Cairney, Bldg. 15, Rm. 201
(541) 463-5843, cairneyc@lanecc.edu

Program Counselor Carolyn Litty, Bldg. 12, Rm. 202
(541) 463-5236, littyc@lanecc.edu

Electrician Apprenticeship Technologies

Associate of Applied Science

To earn the degree, a student must:

- complete 4000-8000 hours State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion
- demonstrate an equivalency of 90 credit hours, with a minimum of 24 credits at Lane, including the last term at Lane
- complete all requirements for an AAS degree as listed below
- earn a cumulative grade point average above 2.0 at Lane or transfer credits earned at other regionally accredited colleges or universities

AAS requirements	Credits
General Education	21
WR 115W Intro to College Writing:	
Workplace Emphasis ^D or higher-level writing	3
MTH 025 Basic Mathematics Applications ^D	
or higher-level math	3
PE/Health Requirement ^R	3
Arts and Letters requirement ^R	3
Human Relations requirement ^R	3
Science/Math/Computer Science requirement ^R	3
Choice of:	3
Arts and Letters requirement ^R	
Human Relations/Social Science requirement ^R	
Science/Math/Computer Science requirement ^R	
Journey-level card from Oregon Bureau of Labor and Industries Apprenticeship and Training Division, prior certification credits	22
Electrician Core-Related Training ^D	
(Choice of one of the following trades)	22-45
Limited Maintenance Electrician	22
Limited Energy Technician License B	27
Limited Energy Technician License A	36
Manufacturing Plant Electrician	39
Inside Wire Electrician	45
Program Electives to complete 90 credits for degree:	2-25
APR 101 Trade Skills Fundamentals	
APR 105 Residential Wiring	
ET 129 Electrical Theory 1	
CS 120 Concepts of Computing	
CST 110 Blueprint Reading	
CST 111 Construction Orientation and Environment	
CST 118 Building Construction	
DRF 167 CAD 1	
HE 252 First Aid	
MTH 076 Applied Geometry for Technicians	
MTH111 College Algebra	
MTH 112 Trigonometry	
WLD 121 Shielded Metal Arc Welding	

Limited Electrician Apprenticeship Technologies

Certificate of Completion

Learning Outcomes Graduates will be able to:

- Repair or install electrical wire devices according to limited licensure regulations to meet NEC and OSC code for Limited Energy Technician—License B, and/or Limited Maintenance Electrician

To earn the certificate, students must:

- complete 4000 hours State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion
- complete core related training—22-24 cr

Electrician Apprenticeship Technologies

Core Related Training requirements (Choice of one of the following trades)

Complete with a 'C' or better in all courses

Limited Maintenance Electrician (22 credits)

- ET 129 Electrical Theory 1
- ET 130 Electrical Theory 2
- ET 229 Motors
- ET 241 Electro-Mechanical Troubleshooting
- APR 220 Electrical Code and Exam Prep or
- APR 228 Apprenticeship Blueprint Reading

Limited Energy Technician License B (27 credits)

- APR 101 Trade Skills Fundamentals
- APR 140 Electrical System Installation Methods
- APR 141 Limited Voltage Electrical Circuits
- APR 142 Testing Equipment and Specialized Applications
- APR 143 Limited Voltage Cabling
- APR 144 System Planning and Maintenance
- APR 220 Electrical Code and Exam Prep

Electrician Apprenticeship Technologies

Certificate of Completion

Students may earn a Certificate of Completion in Electrician Apprenticeship Technologies by successfully completing 45-54 core related training credits with a 'C' or better in all courses, and completing related instruction in communications, computation, and human relations.

Learning outcomes Graduates will:

- apply theory to electrical wiring
- repair and install electrical wire devices according to licensure regulations to meet NEC and OSC for Inside Electrician, Limited Energy Technician-License A, and/or Manufacturing Plant Electrician

To earn the certificate, student must:

- complete State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion
- 6000-Hour BOLI-ATD Trade: Limited Energy Technician—

License A

- 8000-Hour BOLI-ATD Trade: Inside Wire Electrician
- 8000-Hour BOLI-ATD Trade: Manufacturing Plant Electrician
- complete related instruction (communication, computation, human relations) 9 credits
- complete core-related training 36-45 credits

Total Credits 45-54 credits

Core Related Training requirements (Choice of one of the following trades)

Limited Energy Technician License A (36 credits)

- APR 101 Trade Skills Fundamentals
- APR 140 Electrical System Installation Methods
- APR 141 Limited Voltage Electrical Circuits
- APR 142 Testing Equipment and Specialized Applications
- APR 143 Limited Voltage Cabling
- APR 144 System Planning and Maintenance
- APR 220 Electrical Code and Exam Prep
- APR 240 Alarm Systems
- APR 241 Audio and Signaling Systems
- APR 242 Limited Voltage System Integration

Manufacturing Plant Electrician Related Training requirements (39 credits)

- APR 220 Electrical Code and Exam Prep
- APR 228 Apprenticeship Blueprint Reading
- ET 129 Electrical Theory 1
- ET 130 Electrical Theory 2
- ET 229 Motors
- ET 232 Process Control Systems
- ET 234 Programmable Logic Controller
- ET 241 Electro-Mechanical Troubleshooting
- WLD 121 Shielded Metal Arc Welding

Inside Wire Electrician (45 credits)

- APR 130 Electrical Principles
- APR 131 Electrical Principles/Residential Wiring
- APR 132 Electrical Residential Wiring Lab
- APR 133 Electrical Generators, Transformers, and Motors I
- APR 134 Electrical Generators, Transformers, and Motors II
- APR 135 Electrical Generators, Transformers, and Motors Lab
- APR 220 Electrical Code and Exam Prep
- APR 225 Electrical Motor Controls
- APR 226 Electrical Grounding/Bonding and Blueprint Reading
- APR 227 Electrical System Troubleshooting

Standard footnotes:

- * Prerequisite required
- A Meets Arts/Letters requirement
- B Must be passed with grade of "B-" or better to use as a prerequisite
- D Degree or certificate requirement; must be passed with grade of "C-" or better
- G Must be taken for a grade, not P/NP; major requirement

- H Meets Human Relations/Social Science requirement
- M Meets Mathematics requirement
- P Meets PE/Health requirement
- R Required for AAS degree
- S Meets Science/Math/Computer Science requirement
- W Meets Written Communications or English Composition requirement

an equal opportunity/affirmative action institution committed to cultural diversity
and compliance with the *Americans with Disabilities Act* 6/09