



2018 – 2019
Career Technical Programs

Advanced Technology Division
541.463.5380

lanecc.edu

Electrician Apprenticeship Technologies

Associate of Applied Science Degree
One-Year Certificate of Completion

Less than One-Year Certificate of Completion,
Limited Electrician Apprenticeship Technologies
Career Pathway Certificate, Trade Worker Apprenticeship Technologies

Program Coordinator Joy Crump, Bldg. 15 Rm. 201, 541.463.5496,
crumpj@lanecc.edu

Purpose To provide a structured system of training in the electrician trade or occupation leading to certification and journey-level status, only for apprentices who are sponsored by individual employers, accepted by a Joint Apprenticeship Training Committee, and registered with the State of Oregon Bureau of Labor and Industries.

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 National Electrical Code and Oregon Building Codes Division for Inside Wire 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.

Licensing & 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 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. In addition, 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 degree in Operations Management or Bachelor of Applied Science degree in Technology and Management. The Electrician Apprenticeship Technologies pathway includes an advising guide with a set of recommended courses that satisfy both the AAS degree 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. Electrician trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Admission Information Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. In most cases, minimum qualifications to begin an apprenticeship include a minimum age of 18 years, a high school diploma or GED, and high school or college level Algebra with a C or C+ grade or higher (or equivalent).

Advising and Counseling lanecc.edu/advising/advisors

Job Openings Projected through 2020

Lane County openings - 20 annually

Statewide openings - 273 annually

Lane County average hourly - \$30.24; average annual - \$62,902

Oregon average hourly - \$32.88; average annual - \$68,388

Apprentice Wages - 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: boli.state.or.us

Costs Estimate based on 2017-18 tuition and fees. Consult Lane's website for updated tuition. Electrician Apprenticeship Technologies course fees and other course fees may change during the year - see the online credit class schedule for fees assigned to courses. Costs of books and tools for the related training classes in the electrician programs vary with each individual trade/occupation.

Books	\$1,500
Resident Tuition and General Student Fees.....	\$10,000

Total Estimated Cost \$11,500

*Course fees may change during the year. See the online credit class schedule for fees assigned to courses.

Course Requirements

- 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.
- Prerequisites are required for some courses. See course descriptions.
- All courses must be completed with a letter grade of 'C' or better.

Electrician Apprenticeship Technologies

General Education

WR 115W Introduction to College Writing: Workplace	
Emphasis or higher	3
PE/Health Requirement	3
Arts and Letters requirement.....	3
Human Relations requirement	3
Science/Math/Computer Science requirement.....	3
Choice of:	
Arts and Letters requirement	
Human Relations/Social Science requirement	
Science/Math/Computer Science requirement.....	3
MTH 060 Beginning Algebra or higher	4

Journeyman card from Oregon Bureau of Labor and Industries Apprenticeship and Training Division (22 credits)

State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion	22
--	----

Limited Maintenance Electrician (20-21 credits)

APR 189 Shop Practices	2
APR 220 Electrical Apprenticeship Code and Exam Preparation	2 - 3
APR 191 Electrical Theory 2	4
APR 285 Motors	4
APR 286 Motors 2	4
APR 190 Electrical Theory 1	1 - 4

Limited Energy Technician License B (26-27 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical Systems Installation Methods.....	4
APR 141 Limited Voltage Electrical Circuits	4
APR 142 Devices, Testing Equipment and Code	4
APR 143 Limited Voltage Cabling	4
APR 144 Communications.....	4
APR 220 Electrical Apprenticeship Code and Exam Preparation	2 - 3

Limited Energy Technician License A (38-39 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical Systems Installation Methods.....	4
APR 141 Limited Voltage Electrical Circuits	4
APR 142 Devices, Testing Equipment and Code	4
APR 143 Limited Voltage Cabling	4
APR 144 Communications.....	4
APR 220 Electrical Apprenticeship Code and Exam Preparation	2 - 3
APR 240 Audio and Intrusion Systems	4
APR 241 Fire Alarm Systems and Nurse Call	4
APR 242 Limited Voltage System Integration	4

Manufacturing Plant Electrician (38-41 credits)

APR 185 Shielded Metal Arc Welding 1.....	2
APR 189 Shop Practices	2
APR 220 Electrical Apprenticeship Code and Exam Preparation	6 - 9
APR 292 Programmable Controllers 3	4
APR 290 Programmable Controllers 1	4
APR 291 Programmable Controllers 2	4
APR 190 Electrical Theory 1	4
APR 191 Electrical Theory 2	1 - 4
APR 285 Motors	1 - 4
APR 286 Motors 2	1 - 4

Inside Wire Electrician (45-48 credits)

APR 130 Electrical Principles	5
APR 131 Electrical Principles/Residential Wiring.....	5
APR 132 Electrical Residential Wiring Lab	3
APR 133 Electrical Generators, Transformers, and Motors 1	5
APR 134 Electrical Generators, Transformers and Motors 2	5
APR 135 Electrical, Generators, Transformers, and Motors Lab	3

APR 220 Electrical Apprenticeship Code and Exam Preparation	6 - 9
APR 225 Electrical Motor Controls	5
APR 226 Electrical Grounding/Bonding and Blueprint Reading.....	5
APR 227 Electrical System Troubleshooting	3

Program Electives to complete 90 credits for degree:

Additional Electives

CST 118 Building Construction	5
DRF 160 Computer-Aided Drafting and Design.....	4
APR 101 Trade Skills Fundamentals.....	4
APR 105 Electrical Wiring for the Trades	4
CS 120 Concepts of Computing: Information Processing	4
CST 110 Blueprint Reading 1.....	3
CST 111 Construction Orientation and Environment	2
HE 152 Drugs, Society and Behavior.....	3
HE 252 First Aid.....	3
MTH 085 Applied Geometry for Technicians.....	4
MTH 111 College Algebra	5
MTH 112 Trigonometry.....	5
WLD 121 Shielded Metal Arc Welding 1.....	1 - 4

Electrician Apprenticeship Technologies

Offered by the Advanced Technology Division, 541.463.5380

One-Year Certificate of Completion

Program Coordinator Joy Crump, Bldg. 15 Rm. 201, 541.463.5496, crumpj@lanecc.edu

Purpose Students may earn a Certificate of Completion in Electrician Apprenticeship Technologies by successfully completing core related training credits, and completing related instruction in communications, computation, and human relations.

Learning Outcomes

- The graduate will:
- apply theory to electrical wiring.
 - repair and install electrical wire devices according to licensure regulations to meet National Electrical Code and Oregon Building Codes Division for Inside Electrician, Limited Energy Technician-License A, and/or Manufacturing Plant Electrician.

Licensing & 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 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: Electrician trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Admission Information 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: 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).

Electrician Apprenticeship Technologies

Advising and Counseling lanecc.edu/advising/advisors

Job Openings Projected through 2020

Lane County openings - 20 annually

Statewide openings - 273 annually

Lane County average hourly - \$30.24; average annual - \$62,902

Oregon average hourly - \$32.88; average annual - \$68,388

Apprentice Wages - 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: boli.state.or.us

Costs Estimate based on 2017-18 tuition and fees. Consult Lane's website for updated tuition. Electrician Apprenticeship Technologies course fees and other course fees may change during the year - see the online credit class schedule for fees assigned to courses. Costs of books and tools for the related training classes in the electrician programs vary with each individual trade/occupation.

Books	\$1,300
Resident Tuition and General Student Fees.....	\$7,200

Total Estimated Cost \$8,500

*Course fees may change during the year. See the online credit class schedule for fees assigned to courses.

Course Requirements

- Prerequisites are required for some courses. See course descriptions.
- All courses must be completed with a letter grade of 'C' or better.
- To earn the certificate, student must:
- complete State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journeyman 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 credits 9 (communication, computation, human relations)
- complete core-related training credits 38-48 Total Credits 47-57

Related Instruction (9 credits)

Communication	3
Computation	3
Human Relations	3

Journeyman card from Oregon Bureau of Labor and Industries Apprenticeship and Training Division

Limited Energy Technician License A (38-39 credits)

APR 101 Trade Skills Fundamentals	4
APR 140 Electrical Systems Installation Methods.....	4
APR 141 Limited Voltage Electrical Circuits.....	4
APR 142 Devices, Testing Equipment and Code.....	4
APR 143 Limited Voltage Cabling	4
APR 144 Communications.....	4
APR 220 Electrical Apprenticeship Code and Exam Preparation	2 - 3
APR 240 Audio and Intrusion Systems	4
APR 241 Fire Alarm Systems and Nurse Call	4
APR 242 Limited Voltage System Integration.....	4

Manufacturing Plant Electrician (38-41 credits)

APR 189 Shop Practices	2
APR 220 Electrical Apprenticeship Code and Exam Preparation	6 - 9
APR 292 Programmable Controllers 3.....	4
APR 190 Electrical Theory 1.....	4
APR 185 Shielded Metal Arc Welding 1.....	2
APR 191 Electrical Theory 2.....	4
APR 285 Motors	4

APR 286 Motors 2	4
APR 290 Programmable Controllers 1	4
APR 291 Programmable Controllers 2	4
Inside Wire Electrician (45-48 credits)	
APR 130 Electrical Principles	5
APR 131 Electrical Principles/Residential Wiring.....	5
APR 132 Electrical Residential Wiring Lab	3
APR 133 Electrical Generators, Transformers, and Motors 1	5
APR 134 Electrical Generators, Transformers and Motors 2	5
APR 135 Electrical, Generators, Transformers, and Motors Lab	3
APR 220 Electrical Apprenticeship Code and Exam Preparation	6 - 9
APR 225 Electrical Motor Controls	5
APR 226 Electrical Grounding/Bonding and Blueprint Reading.....	5
APR 227 Electrical System Troubleshooting	3

Limited Electrician Apprenticeship Technologies

Offered by the Advanced Technology Division, 541.463.5380

Less than One-Year Certificate of Completion

Program Coordinator Joy Crump, Bldg. 15 Rm. 201, 541.463.5496, crumpj@lanecc.edu.

Purpose Students may earn a Certificate of Completion in Limited Electrician Apprenticeship Technologies by successfully completing core related training credits and providing a State of Oregon Apprenticeship Training Journeyman card or BOLI-ATD Certificate of Completion.

Learning Outcomes Graduates will be able to:

- repair or install electrical wire devices according to limited licensure regulations to meet National Electrical Code and Oregon Building Codes Division for Limited Energy Technician-License B, and/or Limited Maintenance Electrician.

Licensing & 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 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: Electrician trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Admission Information 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: 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).

Advising and Counseling lanecc.edu/advising/advisors

Electrician Apprenticeship Technologies

Job Openings Projected through 2020

Lane County openings - 20 annually

Statewide openings - 273 annually

Lane County average hourly - \$30.24; average annual - \$62,902

Oregon average hourly - \$32.88; average annual - \$68,388

Apprentice Wages - 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: boli.state.or.us

Costs Estimate based on 2017-18 tuition and fees. Consult Lane's website for updated tuition. Electrician Apprenticeship Technologies course fees and other course fees may change during the year - see the online credit class schedule for fees assigned to courses. Costs of books and tools for the related training classes in the electrician programs vary with each individual trade/occupation.

Books	\$875
Resident Tuition and General Student Fees	\$6,025
Total Estimated Cost	\$6,900

*Course fees may change during the year. See the online credit class schedule for fees assigned to courses.

Course Requirements

- Prerequisites are required for some courses. See course descriptions.
- All courses must be completed with a letter grade of "C" or better.
- To earn the certificate, student must:
- complete 4000 hours State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journeyman card or BOLI-ATD Certificate of Completion
- complete core related training 20-27 credits

Journeyman card from Oregon Bureau of Labor and Industries Apprenticeship and Training Division (22 credits)

Limited Maintenance Electrician (20-21 credits)

APR 189 Shop Practices	2
APR 220 Electrical Apprenticeship Code and Exam P reparation	2 - 3
APR 190 Electrical Theory 1	4
APR 191 Electrical Theory 2	4
APR 285 Motors	4
APR 286 Motors 2	4

Limited Energy Technician License B (26-27 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical Systems Installation Methods	4
APR 141 Limited Voltage Electrical Circuits	4
APR 142 Devices, Testing Equipment and Code	4
APR 143 Limited Voltage Cabling	4
APR 144 Communications	4
APR 220 Electrical Apprenticeship Code and Exam Preparation	2 - 3

Trade Worker Apprenticeship Technologies

Offered by the Advanced Technology

Career Pathway Certificate

Program Coordinator Joy Crump, Bldg. 15 Rm. 201, 541.463.5496, crumpj@lanecc.edu.

Purpose To provide a structured system of training in electrical fundamentals to prepare students with the foundational skills and knowledge required to enter the electrical trade.

Learning Outcomes The graduate will:

- complete 4000 hours State of Oregon-approved on-the-job training.
- successfully complete all required core related-training courses with a grade of "C" or better.
- apply theory to electrical systems.
- repair and maintain electrical systems according to state and safety regulations for the electrical apprenticeship trades.

Admission Information Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. Information is available at boli.state.or.us.

Advising and Counseling lanecc.edu/advising/advisors

*Course fees may change during the year. See the online credit class schedule for fees assigned to courses.

Limited Energy Technician License A (24 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical Systems Installation Methods	4
APR 141 Limited Voltage Electrical Circuits	4
APR 142 Devices, Testing Equipment and Code	4
APR 143 Limited Voltage Cabling	4
APR 144 Communications	4

Manufacturing Plant Electrician (16 credits)

APR 190 Electrical Theory 1	1 - 4
APR 191 Electrical Theory 2	1 - 4
APR 285 Motors	1 - 4
APR 286 Motors 2	1 - 4

Inside Wire Electrician (26 credits)

APR 130 Electrical Principles	5
APR 131 Electrical Principles/Residential Wiring	5
APR 132 Electrical Residential Wiring Lab	3
APR 133 Electrical Generators, Transformers, and Motors 1	5
APR 134 Electrical Generators, Transformers and Motors 2	5
APR 135 Electrical, Generators, Transformers, and Motors Lab	3