



2016 – 2017

Career Technical Programs

Advanced Technology Division
541.463.5380

lanecc.edu

Electrician Apprenticeship Technologies

Associate of Applied Science Degree

Certificate of Completion

Less than One Year Certificate of Completion,
Limited Electrician 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. 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 or Oregon University System institution.

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 & Counseling lanecc.edu/advtech/counselor-and-advisor-drop-hours

Job Openings Projected through 2020

Lane County openings 19 annually

Statewide openings 266 annually

Wages

Lane County average hourly \$29.10; average annual \$60,519

Oregon average hourly \$33.02; average annual \$68,687

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 2015-16 tuition and fees. Consult Lane's website for updated tuition.

Books	\$1,750
Resident Tuition and General Student Fees.....	\$8,400

Total Estimated Cost \$10,150

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.

Course Requirements

1. 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.
2. Demonstrate an equivalency of 90 credit hours, with a minimum of 24 credits at Lane, including the last term at Lane.
3. Complete all requirements for an AAS degree as listed below.
4. Earn a cumulative grade point average above 2.0 at Lane or transfer credits earned at other regionally accredited colleges or universities.
5. Prerequisites are required for some courses. See course descriptions.
6. All courses must be completed with a letter grade of 'C' or better.

Prerequisites Minimum placement scores Reading 68, Writing 64 readiness for MTH 60/75. Note: See the counselor or advisor to obtain the suggested entry-level skills for successful completion of these programs.

Electrician Apprenticeship Technologies

General Education

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

Journeyman card from Oregon Bureau of Labor and Industries Apprenticeship and Training Division..... 22

Electrician Core-Related Training

(Choice of one of the following trades) 21-48

Limited Maintenance Electrician (20-21 credits)

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

Limited Energy Technician License B (26-27 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical System 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 Code and Exam Prep	2-3

Limited Energy Technician License A (38-39 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical System 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 Code and Exam Prep	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.....	2
APR 189 Shop Practices	2
APR 190 Electrical Theory 1	4
APR 191 Electrical Theory 2	4
APR 220 Electrical Code and Exam Prep	6-9
APR 285 Motors 1	4
APR 286 Motors 2	4
APR 290 Programmable Controllers 1	4
APR 291 Programmable Controllers 2	4
APR 292 Programmable Controllers 3	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 Code and Exam Prep	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:	0-26
APR 101 Trade Skills Fundamentals	4
APR 105 Residential Wiring	4
CS 120 Concepts of Computing	4
CST 110 Blueprint Reading	3
CST 111 Construction Orientation and Environment.....	2
CST 118 Building Construction.....	1-5
DRF 167 CAD 1	4
ET 129 Electrical Theory 1	4
ET 130 Electrical Theory 2	4
ET 234 Programmable Controllers 1	4
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	4
RTEC 105 Introduction to Advanced Technology	3
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@lanec.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.

Course Requirements

1. Prerequisites are required for some courses. See course descriptions.
2. All courses must be completed with a letter grade of 'C' or better.
3. 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

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

Limited Energy Technician License A (38-39 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical System 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 Code and Exam Prep	2-3

Electrician Apprenticeship Technologies

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.....	2
APR 189 Shop Practices	2
APR 190 Electrical Theory 1	4
APR 191 Electrical Theory 2	4
APR 220 Electrical Code and Exam Prep	6-9
APR 285 Motors 1	4
APR 286 Motors 2	4
APR 290 Programmable Controllers 1	4
APR 291 Programmable Controllers 2	4
APR 292 Programmable Controllers 3	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 Code and Exam Prep	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

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Less than One-Year Certificate of Completion

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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 license regulations to meet National Electrical Code and Oregon Building Codes Division for Limited Energy Technician License B, and/or Limited Maintenance Electrician.

Course Requirements

1. Prerequisites are required for some courses. See course descriptions.
2. All courses must be completed with a letter grade of "C" or better.
3. 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

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

Limited Maintenance Electrician (20-21 credits)

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

Limited Energy Technician License B (26-27 credits)

APR 101A Trade Skills Fundamentals	4
APR 140 Electrical System 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 Code and Exam Prep	2-3