



2017 – 2018  
Career Technical Programs

Advanced Technology Division  
541.463.5380

lanecc.edu

# Construction Trades, General Apprenticeship

Associate of Applied Science Degree  
One-Year Certificate of Completion

**Program Coordinator** Joy Crump, Bldg. 15 Rm. 201, 541.463.5496, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu).

**Purpose** To provide a structured system of training in construction trades or occupations, 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 individual construction trade/occupation.
- apply theory as it relates to trade competencies.
- demonstrate and use industry safety standards.
- utilize recognized standard building codes guidelines as applicable.
- prepare and utilize isometric sketching and detailed drawings per individual trade.
- develop attitudes conducive to improved customer relations skills in the construction trades.
- demonstrate 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.
- complete 8000 hours State of Oregon-approved on-the-job training.

**Licensing and Certification** 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 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 Construction Trades, General Apprenticeship pathway provides statewide transfer opportunities, laddered certificates of completion, and an optional transfer path into Oregon Institute of Technology Bachelor of Science degree in Operations Management. The Construction Trades, General Apprenticeship 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: HVAC technician/installer and plumber 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. Information is available at [boli.state.or.us](http://boli.state.or.us).

**Advising and Counseling** [lanecc.edu/advtech/counselor-and-advisor-drop-hours](http://lanecc.edu/advtech/counselor-and-advisor-drop-hours)

**Job Openings Projected through 2020**

### Carpenter

Lane County openings - 34 annually  
Statewide openings - 590 annually

### HVAC

Lane County openings - 6 annually  
Statewide openings - 95 annually

### Plumber

Lane County openings - 9 annually  
Statewide openings - 143 annually

### Sheet Metal

Lane County openings - 6 annually  
Statewide openings - 97 annually

### Wages

#### Carpenter

Lane County average hourly - \$23.39; average annual - \$48,645  
Oregon average hourly - \$22.48; average annual - \$46,754

#### HVAC

Lane County average hourly - \$26.13; average annual - \$54,350  
Oregon average hourly - \$24.45; average annual - \$50,873

#### Plumber

Lane County average hourly - \$29.76; average annual - \$61,894  
Oregon average hourly - \$35.53; average annual - \$73,917

#### Sheet Metal

Lane County average hourly - \$24.35; average annual - \$50,644  
Oregon average hourly - \$24.94; average annual - \$51,875

**Costs** Estimate based on 2016-17 tuition and fees. Consult Lane's website for updated tuition.

Books .....	\$1,500
Resident Tuition and General Student Fees .....	\$11,225

Total Estimated Cost \$12,725

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

### Course Requirements

- complete 8000 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
- 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

# Construction Trades, General Apprenticeship

- WR 115W and MTH 060 must be completed with a grade of "Pass" or "C-" or better.
- See AAS degree page for choices in Arts and Letters, Human Relations, and Science/Math/Computer Science.
- Minimum placement score of 68 in Reading, OR completion of RD 080, OR RD 087 AND EL 115, OR prior college. A high school diploma or equivalent is recommended for all applicants to this program.

## General Education

WR 115W Introduction to College Writing: Workplace Emphasis or higher.....	3
MTH 060 Beginning Algebra or higher.....	4
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

## Carpenter (36 credits)

APR 115 Carpentry Skill Fundamentals.....	3
APR 116 Carpentry Framing Fundamentals.....	3
APR 117 Carpentry Framing and Introduction to Concrete.....	3
APR 118 Carpentry Framing and Finishing.....	3
APR 119 Carpentry Commercial Plans and Exterior Finish.....	3
APR 120 Carpentry Interior Finish.....	3
APR 201 Carpentry Basic Rigging and Practices.....	3
APR 202 Carpentry Concrete Practices.....	3
APR 203 Carpentry Forms and Tilt-up Panels.....	3
APR 204 Carpentry Advanced Layout and Building Systems.....	3
APR 205 Carpentry Advanced Planning and Management.....	3
APR 206 Carpentry Equipment and Site Layout.....	3

## HVAC Technician/Installer (41-44 credits)

APR 101A Trade Skills Fundamentals.....	4
APR 172 Sheet Metal/HVAC/R Blueprint Reading.....	3
APR 210 HVAC Systems 1.....	4
APR 211 HVAC Systems 2.....	4
APR 212 HVAC Systems 3.....	4
APR 220 Electrical Apprenticeship Code and Exam Preparation.....	6-9
APR 190 Electrical Theory 1.....	4
APR 191 Electrical Theory 2.....	4
APR 285 Motors.....	4
APR 286 Motors 2.....	4

## Plumber (40 credits)

APR 160 Plumbing Skill Fundamentals.....	4
APR 161 Plumbing Materials and Fixtures.....	4
APR 162 Plumbing Basic Waste Water Systems.....	2
APR 163 Plumbing Calculations and Print Reading.....	4
APR 164 Plumbing Basic Installation 1.....	4
APR 165 Plumbing Basic Installation 2.....	2
APR 260 Plumbing Water Supply Systems.....	4
APR 261 Plumbing Piping Sizing and Systems.....	4
APR 262 Plumbing Advanced Waste Systems.....	2
APR 263 Plumbing Code and Test Preparation.....	10

## Sheet Metal Worker (46 credits)

APR 101A Trade Skills Fundamentals.....	4
APR 170 Introduction to Sheet Metal Apprenticeship.....	4
APR 171 Sheet Metal Basic Layout.....	4
APR 172 Sheet Metal/HVAC/R Blueprint Reading.....	3
APR 270 Architectural Sheet Metal.....	4
APR 271 Sheet Metal Building Codes and Installation.....	4
APR 272 Sheet Metal Duct Design.....	4
APR 273 General Sheet Metal Fabrication.....	4

APR 274 Sheet Metal Shop Fabrication.....	4
APR 275 Sheet Metal Project Supervision.....	4
MTH 085 Applied Geometry for Technicians.....	4
APR 185 Shielded Metal Arc Welding 1.....	1
APR 186 Wire Drive Welding 1.....	2

## Program Electives to complete 90 credits for degree:

APR 106 Plumbing Trade Introduction.....	2
BA 101 Introduction to Business.....	4
CS 120 Concepts of Computing: Information Processing.....	4
APR 101 Trade Skills Fundamentals.....	4
CST 110 Blueprint Reading 1.....	3
CST 111 Construction Orientation and Environment.....	2
CST 116 Construction Estimating.....	4
CST 118 Building Construction.....	1-5
CST 119 Building Construction Surveying.....	3
HE 152 Drugs, Society and Behavior.....	3
HE 252 First Aid.....	3
MTH 085 Applied Geometry for Technicians.....	4
MTH 095 Intermediate Algebra.....	5
NRG 103 Sustainability in The Built Environment.....	3
NRG 121 Air Conditioning System Analysis.....	3
NRG 124 Energy Efficiency Methods.....	4
NRG 158 Thermal Design and Installation 1.....	4
NRG 159 Thermal Design and Installation 2.....	4
RTEC 105 Introduction to Advanced Technology.....	3
WATR 101 Introduction to Water Resources.....	3
WLD 121 Shielded Metal Arc Welding 1.....	1-4
WLD 122 Shielded Metal Arc Welding 2.....	1-4
WLD 139 Welding Lab.....	1-6
WLD 142 Pipe Welding Lab: Carbon Steel.....	3
WLD 143 Wire Drive Welding 1.....	1-4

## Journeyman card from Oregon Bureau of Labor and Industries Apprenticeship and Training Division, prior certification credits

State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion.....	22
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## Construction Trades, General Apprenticeship

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](mailto:crumpj@lanec.edu).

**Purpose** Students may earn a Certificate of Completion in Construction Trades, General Apprenticeship by successfully completing 36-46 core related training credits with a grade of "C" or better in all courses, and completing related instruction in communications, computation, and human relations.

### Learning Outcomes

The graduate will:

- apply theory as it relates to trade competencies.
- perform the duties and responsibilities of the individual construction trade/occupation.

**Licensing and Certification** 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 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 Construction Trades, General Apprenticeship 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 Construction Trades, General Apprenticeship pathway includes an advising guide with a set of recommended

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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. Licensing or Other Certification Exams: HVAC technician/installer and plumber trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

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Resident Tuition and General Student Fees..... \$11,225

Total Estimated Cost \$12,725

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

### Course Requirements

- complete 8000 hours of State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journeyman card or BOLI-ATD Certificate of Completion in BOLI-ATD Trade: Carpenter, HVAC Technician, Plumber, or Sheet Metal Worker.
- complete related instruction (communication, computation, human relations) 9 credits
- complete core-related training 36-46 credits

- Minimum placement scores Reading 68, Writing 64, and readiness for MTH 060, or prior college. Note: See the counselor or advisor to obtain the suggested entry-level skills for successful completion of these programs.

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APR 203 Carpentry Forms and Tilt-up Panels.....	3
APR 204 Carpentry Advanced Layout and Building	
Systems .....	3
APR 205 Carpentry Advanced Planning and	
Management.....	3
APR 206 Carpentry Equipment and Site Layout .....	3

### Related Instruction (9 credits)

Communication (min. 3 credits).....	3
Computation (min. 3 credits).....	3
Human Relations (3 credits).....	3

### HVAC Technician/Installer (41-44 credits)

APR 101A Trade Skills Fundamentals .....	4
APR 172 Sheet Metal/HVAC/R Blueprint Reading .....	3
APR 210 HVAC Systems 1 .....	4
APR 211 HVAC Systems 2.....	4
APR 212 HVAC Systems 3 .....	4
APR 220 Electrical Apprenticeship Code and Exam	
Preparation.....	6-9
APR 190 Electrical Theory 1 .....	4
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MTH 085 Applied Geometry for Technicians.....	4
APR 185 Shielded Metal Arc Welding 1.....	1
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### Journeyman card from Oregon Bureau of Labor and Industries Apprenticeship and Training Division, prior certification credits (22 credits)

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