

2016 – 2017 Career Technical Programs

Advanced Technology Division 541.463.5380

lanecc.edu

# Fabrication/Welding Technology

Associate of Applied Science Degree One-Year Certificate of Completion, Fabrication/Welding Technology One-Year Certificate of Completion, Welding Processes Career Pathway Certificate, Shielded Metal Arc Welder Career Pathway Certificate, Wire Drive Welder

Program Coordinator Tracy Rea, Bldg. 15, Rm. 201, 541.463.5151, reat@lanecc.edu

**Purpose** To prepare the graduate for employment in entry-level and higher positions in metal fabrication industries. Graduates will begin work in light or heavy metal fabrication as welders and/or fabricators. Training and experience can lead to careers in technical sales, supervision, estimating, quality control, inspection, specialty welding, and teaching, as well as self-employment. The Fabrication/ Welding Certificate Program (the first year of the two-year degree) prepares graduates for employment as Welders/Fabricators. The Welding Processes Certificate Program prepares graduates for employment as Welder-Trainees or Welders.

Learning Outcomes The graduate of the AAS degree will:

- apply knowledge of forming, fitting, and welding processes.
- demonstrate entry-level fabrication techniques and welding processes and application including GTAW, structural and pipefitting, metallurgy, and quality control procedures.
- use appropriate library and information resources to research professional issues and support lifelong learning.
- use blueprint-reading skills, cost estimating, applied science of materials, and mathematics necessary to the profession.
- · demonstrate and use industry safety standards.
- use mathematical formulas to calculate area, volume, and weight of metal objects.

Admission Information Normal program entry is fall term. A mandatory program orientation is held for new students for fall term (dates available from Advance Technology Counselor/Advisor). Contact Advisor/Counselor for assistance for winter and spring term entry, email AdvTechPrograms@lanecc.edu

#### Advising & Counseling classes.lanecc.edu/course/view.php?id= 31255

**Cooperative Education (Co-op)** Co-op offers students college credit and a grade for on-the-job work experience related to their educational and career goals. Through Co-op students connect theory and practice, develop skills, expand career knowledge, and make contacts for the future. Work schedules and work sites vary. In certain circumstances, Co-op experience may be substituted for major course work. Contact Marv Clemons, Fabrication/Welding Co-op Coordinator, Bldg. 12, Rm. 120A, 541.463.3158, *clemonsm@lanecc. edu* 

#### Job Openings Projected through 2020

Lane County openings 39 annually Statewide openings 442 annually

#### Wages

Lane County average hourly \$18.26 to \$25.25; average annual \$39,393 to \$52,530

Oregon average hourly \$18.51 to \$26.43; average annual \$38,510 to \$54,967

**Costs** (Estimate based on 2015-16 tuition and fees. Consult Lane's website for updated tuition.)

Books	\$1,434
Instruments/Tools	\$765
Program Specific Fees	\$2,872
Resident Tuition and General Student Fees	\$10,888

#### Total Estimated Cost \$15,959

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

#### **Course Requirements**

- 1. Prerequisites are required for some courses. See course descriptions.
- 2. All WLD and MTH courses must be completed with a letter grade of "C-" or better. MFG course must be completed for a letter grade.
- 3. WR 115W and PE/Health requirement must be completed with a "C-" or better or Pass grade.
- 4. Choices for requirements in Arts and Letters, Social Science, and Science are listed on the Associate of Applied Science degree page.
- Minimum placement score of 68 in Reading, OR completion of RD080, OR RD087 AND EL115, OR prior college. A high school diploma or equivalent is recommended for all applicants to this program.

First Year	Fall
MTH 085 Applied Geometry for Technicians	4
WLD 112 Fabrication/Welding 1	12
	Winter
CG 203 Human Relations at Work	3
WLD 113 Fabrication/Welding 2	12
-	Spring
WLD 114 Fabrication/Welding 3	12
WR 115W Introduction to College Writing:	
Workplace Emphasis	3
Second Year	Fall
Choice of:	3
Arts/Letters Requirement	
Social Science Requirement	3
MFG 197 Manufacturing Technology	3
WLD 215 Fabrication/Welding 4	12
	Winter
PE/Health Requirement	3
Science of Computer Science Course	3
WLD 216 Fabrication/Welding 5	12
	Spring
WLD 217 Fabrication/Welding 6	12
Welding Elective	3
Arts and Letters Requirement	3

## **Fabrication/Welding Technology**

### **Fabrication Welding**

#### Offered by the Advanced Technology Division, 541.463.5380

#### **One-Year Certificate of Completion**

Program Coordinator Tracy Rea, Bldg. 15, Rm. 201, 541.463.5151, reat@lanecc.edu

**Purpose** The Fabrication/Welding Certificate Program prepares graduates for employment as Welders/Fabricators.

Learning Outcomes The graduate of the Fabrication/Welding Technology One-Year Certificate of Completion will:

- · read and build metal products from simple blueprints.
- use blueprints and other reference materials to calculate cost of materials necessary to the building of metal products.
- apply mathematics necessary to fabricate metal products.
- perform at entry-level typical industrial welding processes.
- demonstrate at entry-level use of certain machine tools commonly found in industry.
- demonstrate and use industry safety standards.
- use appropriate library and information resources to research professional issues and support lifelong learning.

Admission Information See Ianecc.edu/advtech/wld or contact the Advanced Technology Division, AdvTechPrograms@Ianecc.edu

Advising & Counseling classes.lanecc.edu/course/view.php?id= 31255

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#### Job Openings Projected through 2020

Lane County: 10 positions

#### Statewide: 115 positions

#### Wages

Lane County average hourly \$18.94; average annual \$39,393 Oregon average hourly \$18.51; average annual \$38,510

**Costs** (Estimates based on 2015-16 data for full-time students. Students attending part-time will incur additional term fees. Consult Lane's website for updated tuition and fees.)

Books	\$671
Instruments/Tools	\$300
Program Specific Fees	\$1,030
Resident Tuition and General Student Fees	\$5,047

#### Total Estimated Cost \$7,048

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

#### **Gainful Employment Disclosure**

Standard Occupational Classification: 51-4121.06

Go to the Department of Labor's O\*Net website for a profile of this occupation:

Structural Metal Fabricators and Fitters *onetonline.org/link/ summary/51-4121.06* 

Or check on these O\*Net Related Occupations:

Welders, Cutters, and Welder Fitters *onetonline.org.link/ summary/51-2041.00* 

In academic year 2014-15, 6 students completed this certificate.

The program is designed to take 4 terms, or about 15 months of study to complete.

Lane Community College is committed to protecting student privacy and does not publish this rate for fewer than 10 graduates.

For privacy reasons under FERPA, loan information is not disclosed for programs with fewer than 10 graduates in the reported year.

Explanation of costs: *lanecc.edu/esfs/credit-fees-and-expenses* 

#### **Course Requirements**

- 1. Prerequisites are required for some courses. See course descriptions.
- 2. All WLD and MTH courses must be completed with a letter grade of "C-" or better. WR 115W must be completed with a "C-" or better or Pass grade.
- 3. Minimum placement score of 68 in Reading, OR completion of RD080, OR RD087 AND EL115, OR prior college. A high school diploma or equivalent is recommended for all applicants to this program.

MTH 085 Applied Geometry for Technicians WLD 112 Fabrication/Welding 1	<b>Fall</b> 4 12
	Winter
WLD 113 Fabrication/Welding 2 WR 115W Introduction to College Writing:	12
Workplace Emphasis	3
	Spring
CG 203 Human Relations at Work	3
WLD 114 Fabrication/Welding 3	12

## **Shielded Metal Arc Welder**

#### Offered by the Advanced Technology Division, 541.463.5380

#### **Career Pathway Certificate**

Program Coordinator Tracy Rea, Bldg. 15, Rm. 201, 541.463.5151, reat@lanecc.edu

**Purpose** To prepare the graduate for employment for entry-level positions in the metal fabrication industry.

Learning Outcomes The graduate will:

- read simple introductory blueprints, interpret and apply industrial welding symbols.
- demonstrate proficiency at a industry entry-level with Shielded Metal Arc Welding.
- weld and cut metal as is typical of circumstances found in industrial environments.
- demonstrate and use industry safety standards.

Admission Information See *lanecc.edu/advtech/wld* or contact the Advanced Technology Division, *AdvTechPrograms@lanecc.edu* 

Advising & Counseling classes.lanecc.edu/course/view.php?id= 31255

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#### Job Openings Projected through 2020

Lane County: 17 positions Statewide: 171 positions

#### Wages

Lane County average hourly \$18.26; average annual \$37,972 Oregon average hourly \$19.41; average annual \$40,368

## **Fabrication/Welding Technology**

**Costs** (Estimate based on 2015-16 data for full-time students. Consult Lane's website for updated tuition and fees.

Books	\$175
Program Specific Fees	\$710
Resident Tuition and General Student Fees	\$1,670

Total Estimated Cost \$2,555

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

#### **Course Requirements**

- 1. Prerequisites are required for some courses. See course descriptions.
- Minimum placement score of 68 in Reading, OR completion of RD080, OR RD087 AND EL115, OR prior college. A high school diploma or equivalent is recommended for all applicants to this program.
- Students may be able to substitute an alternative welding course. Please see an academic advisor to arrange pre-approved substitutions.

Fall	
4	TH 085 Applied Geometry for Technicians
4	/LD 121 Shielded Metal Arc Welding 1
Winter	
4	/LD 122 Shielded Metal Arc Welding 2
Spring	
3	LD 141 Welder Qualification (Certification): SMAW

### **Welding Processes**

#### Offered by the Advanced Technology Division, 541.463.5380

#### **One-Year Certificate of Completion**

Program Coordinator Tracy Rea, Bldg. 15, Rm. 201, 541.463.5151, reat@lanecc.edu

**Purpose** To prepare the graduate for employment for entry-level and higher positions in metal fabrication industries. The graduate begins work in light or heavy metal fabrication as welders. Training and experience can lead to careers in technical sales, supervision, estimating, quality control, inspection, specialty welding, and teaching. The welding processes certificate program prepares graduates for employment as welder-trainees or welders.

**Learning Outcomes** The graduate of the Welding Processes One-Year Certificate of Completion will:

- read simple blueprints, interpret and apply industrial welding symbols.
- demonstrate proficiency at an industry entry-level with Shielded Metal Arc Welding, various wire drive processes and Gas Tungsten Arc Welding.
- weld and cut metal as is typical of circumstances found in industrial environments.
- · demonstrate and use industry safety standards.

Admission Information See *lanecc.edu/advtech/wld* or contact the Advanced Technology Division, *AdvTechPrograms@lanecc.edu* 

Advising & Counseling *classes.lanecc.edu/course/view.php?id=* 31255

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#### Job Openings Projected through 2020

Lane County: 17 positions

Statewide: 171 positions

#### Wages

Lane County average hourly \$18.26; average annual \$37,972 Oregon average hourly \$19.41; average annual \$40,368

**Costs** (Estimates based on 2015-16 data for full-time students. Students attending part-time will incur additional term fees. Consult Lane's website for updated tuition and fees.)

Books	\$570
Instruments/Tools	\$385
Program Specific Fees	\$1,710
Resident Tuition and General Student Fees	\$5,645

Total Estimated Cost \$8,310

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

#### **Gainful Employment Disclosure**

Standard Occupational Classification: 51-4121.06

Go to the Department of Labor's O\*Net website for a profile of this occupation:

Structural Metal Fabricators and Fitters Onetonline.org/link/summary/51-2041.00 Or check on these O\*Net Related Occupations: Welders, Cutters, and Welder Fitters onetonline.org.link/ summary/51-4121.06

In academic year 2014-15, 0 students completed this certificate.

The program is designed to take 4 terms, or about 15 months of study to complete. (For privacy reasons under FERPA, loan information is not disclosed for programs with fewer than 10 graduates in the reported year.)

Explanation of costs: lanecc.edu/esfs/credit-fees-and-expenses

#### **Course Requirements**

- 1. Prerequisites are required for some courses. See course descriptions.
- 2. All WLD and MTH courses must be completed with a letter grade of "C-" or better. WR 115W must be completed with a "C-" or better or Pass grade.
- 3. Minimum placement score of 68 in Reading, OR completion of RD080, OR RD087 AND EL115, OR prior college. A high school diploma or equivalent is recommended for all applicants to this program.

First Year	Fall
MTH 085 Applied Geometry for Technicians	4
WLD 121 Shielded Metal Arc Welding 1	4
WLD 143 Wire Drive Welding 1	4
	Winter
CG 203 Human Relations at Work	3
WLD 122 Shielded Metal Arc Welding 2	4
WLD154 Wire Drive Welding 2	4
	Spring
WLD 159 Wire Drive Welding 3	4
WLD 242 Gas Tungsten Arc Welding 1	3
WR 115W Introduction to College Writing:	
Workplace Emphasis	3
Second Year	Fall
WLD 111 Blueprint Reading for Welders	3
WLD 160 Wire Drive Welding 4	4
WLD 256 Gas Tungsten Arc Welding 2	3

## **Fabrication/Welding Technology**

	winter
WLD 257 Gas Tungsten Arc Welding 3	3
Directed Electives	1-4
Directed Electives	
DRF 167 CAD 1	4
ENGR 280W Co-op Ed: Welding	3
WLD 139 Welding Lab	1-3
WLD 141 Welder Qualification (Cert): SMAW	3
WLD 140 Welder Qualification (Cert): Wire	
Drive Processes	3
WLD 142 Pipe Welding Lab: Carbon Steel	3

## Wire Drive Welder

#### Offered by the Advanced Technology Division, 541.463.5380

#### **Career Pathway Certificate**

Program Coordinator Tracy Rea, Bldg. 15, Rm. 201, 541.463.5151, reat@lanecc.edu

**Purpose** To prepare the graduate for employment for entry-level positions in the metal fabrication industry.

Learning Outcomes The graduate will:

- read simple introductory blueprints, interpret and apply industrial welding symbols.
- demonstrate proficiency at a industry entry-level with various wire drive processes.
- weld and cut metal as is typical of circumstances found in industrial environments.
- demonstrate and use industry safety standards.

Admission Information See *lanecc.edu/advtech/wld* or contact the Advanced Technology Division, *AdvTechPrograms@lanecc.edu* 

Advising & Counseling Consult classes.lanecc.edu/course/view. php?id=31269&section=1

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#### Job Openings Projected through 2020

Lane County: 17 positions Statewide: 171 positions

#### Wages

Lane County average hourly \$18.26; average annual \$37,972 Oregon average hourly \$19.41; average annual \$40,368 **Costs** (Estimate based on 2015-16 tuition and fees. Consult Lane's website for updated tuition.)

Books	\$200
Program Specific Fees	\$335
Resident Tuition and General Student Fees	\$1,670

Total Estimated Cost \$2,205

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

#### **Course Requirements**

- 1. Prerequisites are required for some courses. See course descriptions.
- 2. Minimum placement score of 68 in Reading, OR completion of RD080, OR RD087 AND EL115, OR prior college. A high school diploma or equivalent is recommended for all applicants to this program. Students may be able to substitute an alternative welding course. Please see an academic advisor to arrange pre-approved substitutions.Students may be able to substitute an alternative welding course. Please see an academic advisor to arrange preapproved substitutions.Students may be able to substitute an alternative welding course. Please see an academic advisor to arrange pre-approved substitutions.
- 3. Students may be able to substitute an alternative welding course. Please see an academic advisor to arrange pre-approved substitutions.

Fa	
	MTH 085 Applied Geometry for Technicians
Spring	
	WLD 140 Welder Qualification (Certification):
:	Wire Drive
Fa	
	WLD 143 Wire Drive Welding 1
Winte	
,	WLD 154 Wire Drive Welding 2