

# WELDING ENGINEERING TECHNOLOGY, ASSOCIATE IN APPLIED SCIENCE



College(s): DA

Program Code: 0451

This program is for students looking to work within the exciting field of Welding Engineering Technology. Students will learn welding skills including MIG, TIG, Cutting and small machine operation related welding in addition to weld inspection techniques and processes. CNC fabrication equipment commonly associated with welding fabrication will also be introduced and utilized in projects. Students will learn about materials and their selection and processing applications. Students will be performing hands on welding and fabrication projects throughout this program to develop skills that employers are looking for and will allow students to succeed in careers in Welding Engineering Technology or if they choose to pursue further studies such as Bachelor's Degree programs in related fields.

## Program Requirements

Code	Title	Hours
<b>General Education Coursework</b>		
ENGLISH 101	Composition	3
MATH 140	College Algebra	4
Select three additional general education courses from any of the following categories: <sup>1</sup>		
Fine Arts & Humanities		
Physical Sciences or Life Sciences		
Social and Behavioral Sciences		
<b>Required Program Core</b>		
340MFGT 105	Introduction to Advanced Manufacturing I	3
340MFGT 106	Introduction to Advanced Manufacturing II	3
340MFGT 107	Introduction to Advanced Manufacturing III	3

340MFGT 108	Robotics I	3
340MFGT 109	Introduction to Manual Machining	3
340MFGT 110	CNC I Operations	3
340MFGT 153	Welding I GMAW	3
340MFGT 154	Welding II GTAW	3
340MFGT 171	Automated Metrology-Quality Assurance	3
340MFGT 188	Industrial Electricity I	3
340MFGT 210	Automated Fabrication I	3
340MFGT 211	AUTOMATED FABRICATION II	3
340MFGT 251	Welding III-Advanced Welding	3
340MFGT 252	Welding IV - Inspection	3
340MFGT 274	Materials II - Testing and Analysis	3
<b>Total Hours</b>		<b>61</b>

<sup>1</sup> At least one course must meet the Human Diversity (HD) requirement

## Pathway

This is an **example course sequence** for students interested in pursuing Welding Engineering Technology. This does not represent a contract, nor does it guarantee course availability. If this pathway is followed as outlined, you will earn Basic Certificates (BC) in Manufacturing Technology and CNC Technology, and an Advanced Certificate (AC) and Associate in Applied Science (AAS) in Welding Engineering Technology.

## Semester-by-Semester Program Plan for Full-Time Students

All plans can be modified to fit the needs of part-time students by adding more semesters.

Semester 1	Hours
340MFGT 105 Introduction to Advanced Manufacturing I	3
340MFGT 106 Introduction to Advanced Manufacturing II	3

340MFGT 107	Introduction to Advanced Manufacturing III	3
340MFGT 108	Robotics I	3
340MFGT 153	Welding I GMAW	3
<b>Hours</b>		<b>15</b>
<b>Semester 2</b>		
340MFGT 109	Introduction to Manual Machining	3
340MFGT 110	CNC I Operations	3
340MFGT 154	Welding II GTAW	3
340MFGT 188	Industrial Electricity I	3
ENGLISH 101	Composition	3
<b>Hours</b>		<b>15</b>
<b>Semester 3</b>		
340MFGT 171	Automated Metrology-Quality Assurance	3
340MFGT 210	Automated Fabrication I	3
340MFGT 251	Welding III-Advanced Welding	3
MATH 140	College Algebra	4
Social and Behavioral Sciences course (HD)		3
<b>Hours</b>		<b>16</b>
<b>Semester 4</b>		
340MFGT 211	AUTOMATED FABRICATION II	3
340MFGT 252	Welding IV - Inspection	3
340MFGT 274	Materials II - Testing and Analysis	3
Fine Arts & Humanities course (HD)		3
Physical Sciences or Life Sciences course		3
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>61</b>

## Careers

This program can prepare students for the jobs listed below. Click on each one to learn more, including average earnings, annual job openings, and how much education people in that field have. For additional guidance and resources on career options, current City Colleges students and alumni can contact the Career Services Office (<https://www.ccc.edu/departments/Pages/Career-Services.aspx>).

## Welders, Cutters, Solderers, and Brazers

### Job Description

Use hand-welding, flame-cutting, hand-soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.

### Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County

Lightcast earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

#### Annual Wages

Entry-Level 10 <sup>th</sup> Percentile	\$34,923
Median 50 <sup>th</sup> Percentile	\$48,427
Senior-Level 90 <sup>th</sup> Percentile	\$71,171

### Hourly Wages

Entry-Level 10 <sup>th</sup> Percentile	\$17
Median 50 <sup>th</sup> Percentile	\$23
Senior-Level 90 <sup>th</sup> Percentile	\$34

### Annual Job Openings

458 annual openings in Cook County

### National Education Attainment

Here, you can see the level of education that people in this career complete.

Degree Program	% of Jobs
A high school diploma or less	74.38%
A certificate	11.64%
Some college	11.28%
An Associate degree	1.75%
A Bachelor's degree	0.94%
A Master's or Professional degree	0.00%
A Doctoral degree or more	0.00%

0.94% continue their education beyond an associate degree

## Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

### Job Description

Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies. Includes workers who operate laser cutters or laser-beam machines.

### Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County

Lightcast earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

#### Annual Wages

Entry-Level 10 <sup>th</sup> Percentile	\$40,095
Median 50 <sup>th</sup> Percentile	\$44,697
Senior-Level 90 <sup>th</sup> Percentile	\$82,385

#### Hourly Wages

Entry-Level 10 <sup>th</sup> Percentile	\$19
Median 50 <sup>th</sup> Percentile	\$21
Senior-Level 90 <sup>th</sup> Percentile	\$40

### Annual Job Openings

24 annual openings in Cook County

## National Education Attainment

0.00% continue their education beyond an associate degree

Here, you can see the level of education that people in this career complete.

Degree Program	% of Jobs
A high school diploma or less	53.79%
A certificate	35.82%
Some college	10.39%
An Associate degree	0.00%
A Bachelor's degree	0.00%
A Master's or Professional degree	0.00%
A Doctoral degree or more	0.00%

0.00% continue their education beyond an associate degree

## Millwrights

### Job Description

Install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings.

### Salary Based on Experience Level

Take a look at the average hourly/annual earnings for this career in Cook County

Lightcast earnings figures are based on OES data from the BLS and include base rate, cost of living allowances, guaranteed pay, hazardous-duty pay, incentive pay (including commissions and bonuses), on-call pay, and tips.

#### Annual Wages

Entry-Level 10 <sup>th</sup> Percentile	\$42,201
Median 50 <sup>th</sup> Percentile	\$82,135
Senior-Level 90 <sup>th</sup> Percentile	\$115,064

#### Hourly Wages

Entry-Level 10 <sup>th</sup> Percentile	\$20
Median 50 <sup>th</sup> Percentile	\$39
Senior-Level 90 <sup>th</sup> Percentile	\$55

### Annual Job Openings

52 annual openings in Cook County

## National Education Attainment

Here, you can see the level of education that people in this career complete.

Degree Program	% of Jobs
A high school diploma or less	50.00%
A certificate	36.36%
Some college	9.09%
An Associate degree	4.55%
A Bachelor's degree	0.00%
A Master's or Professional degree	0.00%
A Doctoral degree or more	0.00%