

COMPUTER-AIDED DRAFTING ENGINEERING TECHNOLOGY, ASSOCIATE IN APPLIED SCIENCE



College(s): DA

Program Code: 0457

Students in the Computer-Aided Drafting Engineering Technology Associate in Applied Science (AAS) program are prepared for careers in industrial drafting and design of industrial components. Companies that manufacture physical products and that have production process equipment need their products, facilities and equipment drawn, detailed and designed prior to their manufacture or installation. Students gain an overview of manufacturing processes through hands on lab classes in CNC machining, welding and electrical controls as well as Computer Aided design program training and conversion of 3D designs into CNC programs and rapid prototyping of designs. Students will take classes in materials and maintenance technologies to have a well rounded background to base their drafting designs on utilizing their hands on experience with industrial equipment. Students are able to progress onto Bachelor's programs if they desire to further their education in this specialty.

Program Requirements

Code	Title	Hours
General Education Requirements ¹		
MATH 140	College Algebra	4
ENGLISH 101	Composition	3
Social and Behavioral Sciences		3
Fine Arts/Humanities		3
Physical Sciences/Life Sciences		3
Required Program Core		
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
	or 340MFGT 19 Manual Machining II	
340MFGT 170	CAD I	3
340MFGT 171	Automated Metrology-Quality Assurance	3
340MFGT 188	Industrial Electricity I	3
340MFGT 209	Computer Aided Manufacturing (CAM) I	3
340MFGT 270	CAD II Detailing	3
340MFGT 274	Materials II - Testing and Analysis	3
340MFGT 287	Maintenance Technologies I	3
340MFGT 290	Process Technology I	3
Total Hours		61

¹ At least one course must meet the Human Diversity (HD) (<https://catalog.ccc.edu/hd/>) requirement.

Pathway

This is an **example course sequence** for students interested in pursuing Computer-Aided Drafting 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 Computer-Aided Drafting 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 110	CNC I Operations	3
	Hours	15
Semester 2		
340MFGT 109	Introduction to Manual Machining	3
340MFGT 153 or 340MFGT 195	Welding I GMAW or Manual Machining II	3
340MFGT 170	CAD I	3
340MFGT 188	Industrial Electricity I	3
ENGLISH 101	Composition ¹	3
	Hours	15
Semester 3		
340MFGT 171	Automated Metrology-Quality Assurance	3
340MFGT 270	CAD II Detailing	3
340MFGT 290	Process Technology I	3
Social and Behavioral Sciences course (HD) ¹		3
MATH 140	College Algebra ¹	4
	Hours	16
Semester 4		
340MFGT 209	Computer Aided Manufacturing (CAM) I	3
340MFGT 274	Materials II - Testing and Analysis	3
340MFGT 287	Maintenance Technologies I	3
Fine Arts/Humanities course (HD) ¹		3
Physical Sciences/Life Sciences course ¹		3
	Hours	15
	Total Hours	61

¹ General Education course

Choose your courses with your College Advisor.

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>).

Mechanical Engineering Technologists and Technicians

Job Description

Apply theory and principles of mechanical engineering to modify, develop, test, or adjust machinery and equipment under direction of engineering staff or physical scientists.

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 th Percentile	\$51,397
Median 50 th Percentile	\$67,852
Senior-Level 90 th Percentile	\$103,379

Hourly Wages

Entry-Level 10 th Percentile	\$25
Median 50 th Percentile	\$33
Senior-Level 90 th Percentile	\$50

Annual Job Openings

34 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	7.80%
A certificate	32.84%
Some college	8.76%
An Associate degree	14.09%
A Bachelor's degree	36.52%
A Master's or Professional degree	0.00%
A Doctoral degree or more	0.00%

36.52% continue their education beyond an associate degree

Industrial Engineering Technologists and Technicians

Job Description

Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency.

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 th Percentile	\$45,617
Median 50 th Percentile	\$67,519
Senior-Level 90 th Percentile	\$97,365

Hourly Wages

Entry-Level 10 th Percentile	\$22
Median 50 th Percentile	\$32
Senior-Level 90 th Percentile	\$47

Annual Job Openings

70 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	21.64%
A certificate	1.25%
Some college	36.92%
An Associate degree	25.54%
A Bachelor's degree	14.65%
A Master's or Professional degree	0.00%
A Doctoral degree or more	0.00%

14.65% continue their education beyond an associate degree

Electrical and Electronics Drafters**Job Description**

Prepare wiring diagrams, circuit board assembly diagrams, and layout drawings used for the manufacture, installation, or repair of electrical equipment.

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 th Percentile	\$47,956
Median 50 th Percentile	\$67,364
Senior-Level 90 th Percentile	\$103,386

Hourly Wages

Entry-Level 10 th Percentile	\$23
Median 50 th Percentile	\$32
Senior-Level 90 th Percentile	\$50

Annual Job Openings

12 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	6.10%
A certificate	21.07%
Some college	6.74%
An Associate degree	23.56%
A Bachelor's degree	40.08%
A Master's or Professional degree	2.46%
A Doctoral degree or more	0.00%

42.54% continue their education beyond an associate degree