

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 or 340MFGT 19 Manual Machining II | 3 |
| 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