CNC ENGINEERING TECHNOLOGY, ASSOCIATE IN APPLIED SCIENCE

College(s): DA
Program Code: 0449

The Associate in Applied Science (AAS) in CNC Engineering Technology builds on the AC in CNC Engineering Technology adding in the additional materials, Computer Aided Manufacturing and Advanced Metrology skills students need when pursuing careers in advanced manufacturing. Students in this program are looking to pursue careers leading teams and solving problems for manufacturing employers in the metal working industries that are increasingly becoming more automated and integrated with advanced technologies.

Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 140</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>ENGLISH 101</td>
<td>Composition</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fine Arts/Humanities</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physical Sciences/Life Sciences</td>
<td>3</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>340MFGT 105</td>
<td>Introduction to Advanced Manufacturing I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 106</td>
<td>Introduction to Advanced Manufacturing II</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 107</td>
<td>Introduction to Advanced Manufacturing III</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 108</td>
<td>Robotics I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 109</td>
<td>Introduction to Manual Machining</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 110</td>
<td>CNC I Operations</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 153</td>
<td>Welding I GMAW</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 160</td>
<td>CNC II Operations and Programming</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 170</td>
<td>CAD I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 171</td>
<td>Automated Metrology-Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 172</td>
<td>Quality Systems I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 209</td>
<td>Computer Aided Manufacturing (CAM) I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 210</td>
<td>Automated Fabrication I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 260</td>
<td>CNC III - Advanced Operations</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 274</td>
<td>Materials II - Testing and Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours: 61

At least one course must meet the Human Diversity (HD) requirement.

Pathway

This is an example course sequence for students interested in pursuing CNC 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 Associate Certificate (AC) and Associate in Applied Science (AAS) Degree in CNC 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>340MFGT 105</td>
<td>Introduction to Advanced Manufacturing I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 106</td>
<td>Introduction to Advanced Manufacturing II</td>
<td>3</td>
</tr>
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<td>340MFGT 107</td>
<td>Introduction to Advanced Manufacturing III</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 108</td>
<td>Robotics I</td>
<td>3</td>
</tr>
<tr>
<td>340MFGT 110</td>
<td>CNC I Operations</td>
<td>3</td>
</tr>
</tbody>
</table>
Semester 2
340MFGT 109 Introduction to Manual Machining 3
340MFGT 153 Welding I GMAW 3
340MFGT 160 CNC II Operations and Programming 3
340MFGT 170 CAD I 3
ENGLISH 101 Composition 1 3

Hours 15

Semester 3
340MFGT 171 Automated Metrology-Quality Assurance 3
340MFGT 209 Computer Aided Manufacturing (CAM) I 3
340MFGT 260 CNC III - Advanced Operations 3
Social and Behavioral Sciences course (HD) 1 3
MATH 140 College Algebra 1 4

Hours 16

Semester 4
340MFGT 172 Quality Systems I 3
340MFGT 210 Automated Fabrication I 3
340MFGT 274 Materials II - Testing and Analysis 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).

Machinists
Job Description
Set up and operate a variety of machine tools to produce precision parts and instruments out of metal. Includes precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, mathematics, metal properties, layout, and machining procedures.

Salary Based on Experience Level
Take a look at the average hourly/annual earnings for this career in Cook County

Machinists

Hourly Wages
Entry-Level 10th Percentile $13
Median 50th Percentile $21
Senior-Level 90th Percentile $33

Annual Job Openings
913 annual openings in Cook County

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

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>% of Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high school diploma or less</td>
<td>49.54%</td>
</tr>
<tr>
<td>A certificate</td>
<td>33.12%</td>
</tr>
<tr>
<td>Some college</td>
<td>17.34%</td>
</tr>
<tr>
<td>An Associate degree</td>
<td>0.00%</td>
</tr>
<tr>
<td>A Bachelor's degree</td>
<td>0.00%</td>
</tr>
<tr>
<td>A Master's or Professional degree</td>
<td>0.00%</td>
</tr>
<tr>
<td>A Doctoral degree or more</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

0.00% continue their education beyond an associate degree

Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic

Job Description
Set up, operate, or tend more than one type of cutting or forming machine tool or robot.

Salary Based on Experience Level
Take a look at the average hourly/annual earnings for this career in Cook County

Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic

Hourly Wages
Entry-Level 10th Percentile $11
Median 50th Percentile $18
Senior-Level 90th Percentile $27

Annual Job Openings
440 annual openings in Cook County

National Education Attainment
Here, you can see the level of education that people in this career complete.
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic

Job Description
Set up, operate, or tend machines to saw, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.

Salary Based on Experience Level
Take a look at the average hourly/annual earnings for this career in Cook County.

Emsi 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 10th Percentile: $24,273
- Median 50th Percentile: $36,046
- Senior-Level 90th Percentile: $53,692

Hourly Wages
- Entry-Level 10th Percentile: $12
- Median 50th Percentile: $17
- Senior-Level 90th Percentile: $26

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 | 76.09%
A certificate | 0.00%
Some college | 0.00%
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.

Inspectors, Testers, Sorters, Samplers, and Weighers

Job Description
Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications. May use precision measuring instruments and complex test equipment.

Salary Based on Experience Level
Take a look at the average hourly/annual earnings for this career in Cook County.

Emsi 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 10th Percentile: $26,014
- Median 50th Percentile: $39,705
- Senior-Level 90th Percentile: $70,051

Hourly Wages
- Entry-Level 10th Percentile: $13
- Median 50th Percentile: $19
- Senior-Level 90th Percentile: $34

Annual Job Openings
1158 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 | 82.78%
A certificate | 7.64%
Some college | 5.64%
An Associate degree | 3.94%
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.