

# Programs By Career Cluster:

## Manufacturing, Information Technology, Communications

### Engineering and Metal Fabrication: Machining **D** **C**

Students gain a global understanding of precision machining, the process of removing metal to create extremely accurate parts. They learn all aspects of the advanced manufacturing industry, including how to operate CNC (Computer Numerical Controlled) lathes, mills and power saws. The creation of blueprints and designs using industry-driven software and technology is covered, as is performing quality control and inspections. Students will also be exposed to basic welding.



#### Possible Career Paths:

- *With a 2-year CTE program:* Computer Controlled Machine Tool Operator, increased demand 4.5%\*
- *An associate's degree or postsecondary:* Industrial Machinery Mechanic, increased demand 9.7%\*
- *A bachelor's degree:* Industrial Engineer, increased demand 12.8%\*

### Engineering and Metal Fabrication: Welding **D** **C**

Students attain comprehensive knowledge of welding, the art and science of joining metal together. Students experience the fabrication of industry-specific products. Common industry standard processes of Shielded Metal Arc Welding (SMAW-Stick), Gas Tungsten Arc Welding (GTAW-TIG), and Gas Metal Arc Welding (GMAW-MIG), as well as plasma arc and oxy-acetylene cutting are covered. Students will be exposed to the programming (CNC) aspect of machining.



#### Possible Career Paths:

- *With a 2-year CTE program:* Production Worker increased demand 14.3%\*
- *An associate's degree or postsecondary:* Welder Inspector, increased demand 5.8%\*
- *A bachelor's degree:* Materials Engineer, increased demand 12.5%\*

### Computer Technology **D** **C**

Students gain knowledge of both hardware and software relevant to the information technology (IT) field. Through the Cisco Networking Academy, students learn the curriculum of the CompTIA A+, a preferred certification for technical support and IT operational roles. Students are introduced to video game design. Hardware studies include computer assembly, preventive maintenance and troubleshooting. Due to the widespread use of mobile devices, these platforms and their operating systems are also a focus.



#### Possible Career Paths:

- *With a 2-year CTE program:* Computer User Support Specialist, increased demand 13.1%\*
- *An associate's degree or postsecondary:* Web Developer, increased demand 13.2%\*
- *A bachelor's degree:* Software Developer, increased demand 26.1%\*

### Digital and Visual Communication **C**

Students learn how individual creativity integrates with graphic/ multimedia technical skills and how to communicate using purposeful and powerful visual and audio messages. By utilizing industry-standard software, students create, design, edit and produce graphic images for print projects, online platforms and video.



#### Possible Career Paths:

- *With a 2-year CTE program:* Merchandise Display Designer, increased demand 4.5%\*
- *An associate's degree or postsecondary:* Audio Visual Technician, increased demand 16.7%\*
- *A bachelor's degree:* Multimedia Artist, increased demand 5.6%\*

#### KEY

**D** Dual Enrollment

**C** Industry Credentials (or credentialing/ licensing preparation)

\*Projected New York State Finger Lakes Region growth for 2016-2026, New York State Department of Labor

# Programs & Career Cluster Alignment

Our programs correlate to one or more US Dept. of Education Career Clusters

<u>Program</u>	<u>Correlated Career Clusters</u>	<u>Program</u>	<u>Correlated Career Clusters</u>
Auto Body and Collision Repair Technology	Transportation, Distribution & Logistics Science, Technology, Engineering & Mathematics	Dental Assisting	Health Science
Automotive Technology	Transportation, Distribution & Logistics Agriculture, Food & Natural Resources	Digital and Visual Communication	Arts, A/V Technology & Communications
Baking	Hospitality & Tourism Human Services	Engineering and Metal Fabrication - Machining	Manufacturing Transportation, Distribution & Logistics
Carpentry	Architecture & Construction Science, Technology, Engineering & Mathematics	Engineering and Metal Fabrication - Welding	Manufacturing Transportation, Distribution & Logistics
Child and Family Development	Education & Training Human Services	Exercise Science	Health Science
Computer Technology	Information Technology Science, Technology, Engineering & Mathematics	HVAC/Plumbing	Architecture & Construction
Introduction to Construction Trades	Architecture & Construction Science, Technology, Engineering & Mathematics	Heavy Equipment Operation and Maintenance	Transportation, Distribution & Logistics Agriculture, Food & Natural Resources
Cosmetology	Human Services Marketing	Nurse Assisting and Associated Health Careers	Health Science
Criminal Justice	Law, Public Safety, Corrections & Security Government & Public Administration	Outdoor Powersports Technology	Transportation, Distribution & Logistics
Culinary Arts	Hospitality & Tourism Human Services	Phlebotomy and Laboratory Science	Health Science Agriculture, Food & Natural Resources
		Residential and Commercial Electrical	Architecture & Construction Science, Technology, Engineering & Mathematics
		New Visions Health Professions	Health Science

For details on Career Clusters, visit the U. S. Department of Education website or Advance CTE ([careertech.org](http://careertech.org))