



Advanced Engineering & Manufacturing Technology

Background

Career and College Academy is a unique option for students to explore or begin a career path during high school, graduate with industry-recognized certifications and begin earning post-secondary credits and job training.

- Free college courses.
- Free transportation from high schools.
- In-demand skills.
- Enter a career or go to college.
- All classes at BCCA Hub at HTC Eden Prairie Campus

Advanced Engineering & Manufacturing Technology

Grades: 11 & 12.

Dual Enrollment/Concurrent Hennepin Technical College credits

Partner: Hennepin Technical College.

Value of 1 HTC credit = \$157

Trimester 1

CT3020A Manufacturing Technology I

Earn 2 HS STEM/elective credits, 1 Physics Credit and 7 HTC credits.

Prerequisite: At least 1 Technology Education or Engineering course

This bundle covers HTC courses Industrial Electricity I and Solidworks. Students will be introduced to electrical devices and how they work, including hands-on experience wiring circuits and reading diagrams. Students will also experience using SolidWorks three-dimensional parametric CAD software to create 3D solid parts and assemblies.

Trimester 2

CT3020B Manufacturing Technology II

Earn 2 HS STEM/elective credits. 1 Physics Credit and 7 HTC credits.

Prerequisite: Manufacturing Technology I

This bundle covers HTC courses Fluid Power Technology and Additive Manufacturing. This course gives an introduction into how hydraulic and pneumatic systems work, focusing on the systems used in industry today. In the second section students will gain experience with 3D printing technologies, explore additive manufacturing processes, and create models.

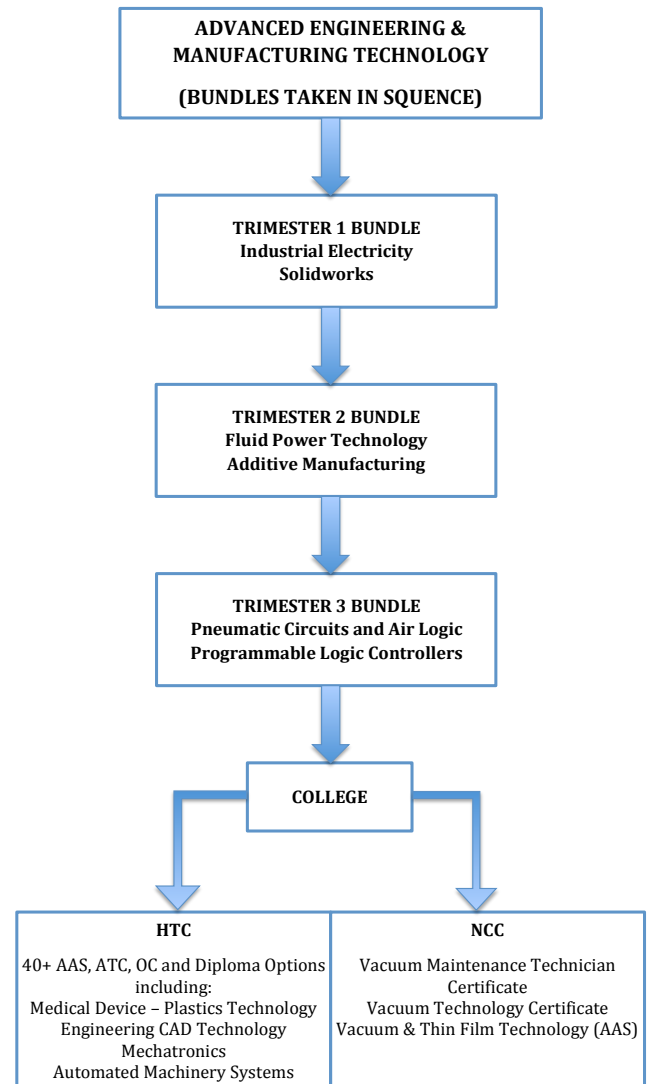
Trimester 3

CT3020C Manufacturing Technology III

Earn 4 HS STEM/elective credits. 1 Physics Credit and 6 HTC credits.

Prerequisite: Manufacturing Technology II

This bundle covers HTC courses Pneumatic Circuits and Air Logic and Programmable Logic Controllers. Students will be introduced to pneumatics and will connect, troubleshoot, and maintain the types of pneumatic components and circuits used in items such as robots, air brakes, or jackhammers. Programmable Logic Controllers (PLCs) are central components that control robots. Students will learn how to program and set up a PLC and will be challenged to write a program for a simple machine.



Degree Options

Normandale Community College

Vacuum Maintenance Technician Certificate
Vacuum and Thin Film Technology (AAS)

Vacuum Technology Certificate

Hennepin Technical College

Automated Machinery Systems (Diploma)
Automation Robotics Engineering Technology (AAS)
Automated Machinery Adjuster (Diploma)
Automation Technologies (OC)
Controls Engineering Technician
Mechatronics (ATC)
Mechatronics (Diploma)
Production Technologies (OC)
Electronics Technology (AAS/Diploma)
AutoCAD Operator (ATC)
Engineering CAD Technology (AAS/Diploma)
Pro/ENGINEER Operator (ATC)
SolidWorks Operator (ATC)
Fluid Power Engineering Technician (AAS/Diploma)
Fluid Power Mechanic (Diploma)
Pneumatic Engineering Technician (AAS/Diploma)
Manufacturing Engineering Technology (AAS)
Manufacturing Fundamentals (M-Powered) (OC)
Industrial Building Engineering and Maintenance (Diploma)

Hydraulic Engineering Technician (AAS/Diploma)
Industrial Maintenance Mechanic (OC)
National Certified Fluid Power Specialist (ATC)
Manufacturing Technician (OC)
CNC Operator (OC)
CNC Swiss Turning Center Technician (ATC)
CNC Setup Technician (ATC)
CNC Technician (AAS/Diploma)
Quality Assurance (OC)
Tool and Die Moldmaking (AAS)
GMAW Production Welder (MIG) (OC)
Structural Iron Fabrication and Repair (OC)
Welding (Diploma)
Extrusion Molding (OC)
Injection Molding (OC)
Medical Device – Plastics Technology (OC)
Plastics Engineering Technology (Diploma)
Scientific Injection Molding Specialist (ATC)

Career Options and Average Salaries

Machinists: \$51,540
Maintenance & Repair Workers: \$38,390
Welders, Cutters, Solderers, Brazers: \$40,040
Inspectors, Sorters, Testers, Samplers, Weighers: \$38,400
Packaging and Filling Machine Operators: \$28,940
Supervisors of Production & Operating Workers: \$59,060
Electricians: \$54,520
Industrial Machinery Mechanics: \$50,440
Electrical & Electronic Equipment Assemblers: \$32,070
Industrial Engineering Technicians: \$55,660
Mechanical Engineering Technicians: \$55,470
Mining & Geological Engineers: \$100,970
Mechanical Engineers: \$87,140
Materials Engineers: \$91,150
Industrial Engineers: \$85,110

To Learn More:

Visit:

www.bloomingtonschools.info/bcca

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