



COLLEGE TECH PREP

Computer-Aided Design and Engineering Technologies (CADET) ➔ STEM

Redefine what is possible through CAD & Engineering Technologies! Students will use the latest industry standard software and equipment to produce working drawings, 3D solid model designs, parts and assemblies. Additionally, students will have the opportunity to program and operate CNC machines (router, lathe, mill and water jet) to produce manufactured products using wood, metal, and plastic. Students will also operate rapid prototype machines (3D printer) laser engraver in fabricating various engineered and designed products. Manufacturing and welder processes and industries will be explored. This exciting, professional College Tech Prep offering is designed to prepare students for careers in the engineering, advanced

manufacturing and architectural career fields. Students will network with industry experts and partners in high demand career fields. Senior level internships/industry placement opportunities are available to qualified students. Advanced technologies, coupled with the need to update and improve manufacturing facilities and product design, should fuel the demand for professionals in computer-aided manufacturing, architecture, and engineering technologies. According to the latest data 7,400 jobs within a 100 mile radius of Akron, Ohio currently exist. Upon successful completion of the program, students will be eligible to earn up to 3 college credits (CTAG) to any Ohio public university for Computer-Aided Drafting and Design in an Engineering Technology program.

Skills necessary for success

- Detail-oriented problem solver
- Ability to visualize projects
- Affinity for mathematics
- Ability to work independently and as a team member
- Positive attitude, critical thinker
- Interest in designing and building
- Use and implement precise measurements and calculations

Professional pathway

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|-----------------------------------|-----------------------|
| • Engineering technician | • Machine Technician |
| • Manufacturing Engineer | • Architect |
| • CNC programmer/operator | • Landscape architect |
| • CAD Designer | • Interior designer |
| • Furniture Engineering Draftsman | • Machinist |

Recommendations

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| • Excellent attendance record | • Geometry |
| • Minimum 2.5 GPA | • Utilize computer technologies |

Career interests/helpful background

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|----------------------------------|-------------------------|
| • Computer technology | • Manufacturing process |
| • Blueprint design or production | • Keyboarding skills |

Higher education opportunities

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|---|---------------------|
| • College credits available. See page 32. | • Bachelor's degree |
| • Associate's degree | • Internships |

GRADE LEVEL: 10, 11, 12
LENGTH: One or two years
SCHOOL: Roosevelt

CREDIT:
Level I: CP or Comp English 1; CADET IA 1; CADET IB 1.
Level II: CADET IIA 1.5; CADET IIB 1.5.
Capstone* 1. (*Capstone includes project/problem-based learning opportunities that occur both in the building and at an external site. Students may combine classroom teaching with work experience.)

Project Lead the Way ➔ STEM

Project Lead The Way is a four-year sequence of courses, which when combined with traditional mathematics and science courses, introduces students to engineering in high school. Three core courses—Introduction to Engineering Design (freshman year); Principles of Engineering (sophomore year) and Digital Electronics (junior year)—as well as a junior-year elective and a senior-year capstone course make up the pathway.

Higher education opportunities

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|---|---------------------|
| • College credits available. See page 33. | • Bachelor's degree |
| • Associate's degree | |

SCHOOL: Tallmadge students only who are in the College Prep/Honor's Diploma/AP Program pathway.

