Computer-Aided Design (CAD) AND Engineering Technologies

Career-Technical Education Program News from the Six District Educational Compact

Students gain advanced manufacturing skills

Computer-Aided Design (CAD) and Engineering Technologies students gain advanced manufacturing skills through a variety of classroom and lab activities as well as through career exploration activities during field trips and guest speaker presentations. Students are then able to apply these skills in the lab as they complete projects, as shown below.

Ryan Thompson (Hudson), programs the CNC lathe, using the Intuitive Programming System (IPS). He writes the CNC program at the machine, using the supplied drawing.

Mohammed Dahmanni (Kent) indicates the vise on the manual mill.

Kallie Skubic (Tallmadge) uses the manual lathe to turn a part to meet drawing specifications.

All CAD and Engineering Technologies students have the opportunity to apply the fundamental machining and programming skills that they learn in class through hands-on projects in the lab. These skills will prepare them to find success in an internship during their second year of the program.

Kent City Schools Superintendent Tom Larkin (center), alongside Governor Mike DeWine (left) and Lieutenant Governor Jon Husted (right), at the November press conference in Dayton.

Construction grant will expand lab to provide an optimal learning environment

The Computer-Aided Design & Engineering Technologies program is excited to announce that Kent City Schools has been awarded an over $2.3 million grant from the State of Ohio's Career Technical Construction Program, a priority earmark in the new state budget for expansion of career-technical facilities in Ohio's public schools. The funding will allow for the construction of the Advanced Manufacturing and Innovation Center at Theodore Roosevelt High School, a 3,500 square foot state-of-the-art addition to the existing lab space. Kent City Schools Director of Career-Technical Education **Brian Bachtel** shares, "This project has extensive support from business and industry, as well as local and regional public officials. We have worked collaboratively to design this project to create an optimal environment for students to be prepared for entry-level manufacturing and engineering employment or post-secondary studies."

Program completers give back

Completers of the CAD & Engineering Technologies program stay connected by serving as guest speakers, members of the advisory board and as mentors. Recently, 2019 Stow-Munroe Falls graduate and CAD & Engineering Technologies completer **Marielle Muncy**, spoke to students about her current post-secondary and internship ventures. Marielle is currently a senior at Youngstown State University, where she is majoring in Mechanical Engineering Technology. Marielle shares that she loved to see her ideas come to life while in the program. She feels that she entered college with a high level of confidence due to the exposure and skills that she gained while in the CAD & Engineering Technologies program and is finding great success as a result of this head start.

Kameron Hazelton (Kent Roosevelt) and Grant Dodds (Tallmadge) work together to layout and make their dice pieces.

CAD & Engineering Technologies students are dreamers and designers

The mantra of CAD & Engineering Technologies is "If you can dream it; you will be shown how to draw and design it; machine it; put it together and make it work!" One example of this slogan is the custom dice project. Student pairs are tasked with completing the multi-step process from start to finish. These steps include:

1. Measuring the material needed to determine size constraints;
2. Designing the six-sided die in two dimensions in AutoCAD;
3. Turning the design into a working drawing;
4. Nesting both students' designs together in Mastercam;
5. Creating the G-code for their file;
6. Operating the waterjet to cut the 10-gauge steel with water;
7. Grinding and preparing the material for the press brake;
8. Assembling the faces through welding; and
9. Applying paint or clear-coat to highlight the shine of polished steel.

The concept of Dream, Design and Make allows for students to find great satisfaction as they learn all of the necessary steps and skills to bring their deams to a reality.


Kameron Hazleton (Kent Roosevelt) displays his work in progress.

Chris Rydzewski (right), alongside his Swagelok supervisor Nathan Painter (left)

Chris Rydzewski, 2023 Kent-Roosevelt graduate and Computer-Aided Design (CAD) and Engineering Technologies completer was hired as a full-time Level 2 Operator at Swagelok in Solon after graduation. Chris was placed at Swagelok during his senior year after being introduced to the company's talent and recruitment staff through the Computer Aided Design & Engineering Technologies program. Chris's supervisor **Nathan Painter**, shared that Chris is excelling in his work and has perfected a machine process in under 8 months that typically takes two years. Chris is excited about working for a company that since its inception, has never laid off an employee! He plans to take advantage of Swagelok's tuition reimbursement program and work toward a degree in engineering. Congratulations Chris!

Ky Becca, Kennametal plant manager, Ryan Thompson (Hudson), Mausam Budathoki (Stow-Munroe Falls), Jeff Bee, instructor, and Terry Colescott, Kennametal Education Coordinator, alongside that tools that were donated to the program, valued at over $2,000.
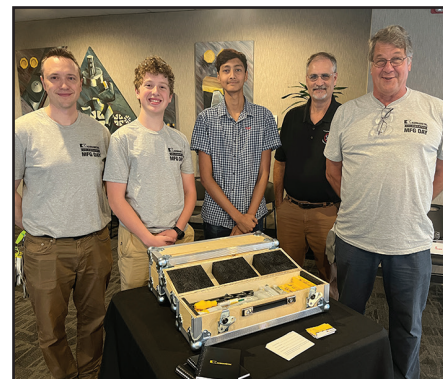
Students celebrate Manufacturing Month with area business partners

October is recognized nationally as "Manufacturing Month" and Computer Aided Design & Engineering Technologies students celebrated with several area industry partners. Students visited *Kennametal* in Solon where they got to check out their multi-million dollar robotic tending system as well as hear about their internship and apprenticeship opportunities. A field trip to *NMG Aerospace* in Stow allowed for students to gain a greater understanding of the diversity the maching industry as they were shown a variety of machining and programming parts and departments.

Check us out on ✕ 📷 **@ rhscadet.**