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TCD launches precision engineering program



Jim Vassar, president of Fidelity Tool in Batavia, is one of TCD's first manufacturing alums, who often returns to talk to students and parents about the opportunities in precision manufacturing.

By Mike Zimmerman, Inside TCD

The "skills gap" in precision manufacturing is a reality in the United States, as well as in DuPage County, with local employers who would like to expand their business struggling to find qualified, skilled technicians.

To assist in filling this gap, Technology Center of DuPage is offering Precision Engineering and Design Technology to high school juniors and seniors beginning with the 2017-18 school year. While many might think this is "old school," the reality is this is 21st century manufacturing that is alive and well in DuPage County.

It may be news to some that manufacturing relies heavily on STEM competencies (science, technology, engineering and math) in every aspect of the industry. The growing return of operations to the U.S. and retiring Baby Boomers mean growth in current and future job projections for a career field that comes with a high wage.

Nick Bratta, vice president at Avanti Engineering in Glendale Heights, began his education in precision ma-



TCD alumnus Nick Bratta of Avanti Engineering uses high velocity, 21st Century CNC technology in production.

chining at Technology Center of DuPage back in 1984 when he was a student at Lake Park High School. Today, his company manufactures products for use in a variety of industries, from automotive to hydraulics to musical instruments.

I caught up with Bratta at the recent Manufacturing and Engineering Technology Expo at College of DuPage, a field trip experience for high school students to learn about the opportunities and benefits of working in this industry. It is sponsored annually by COD, Choose DuPage, DuPage Workforce Board, workNet DuPage, Glenbard High School District 87 and Technology Center of DuPage.

"Our experienced workforce is getting older," Bratta acknowledged, noting that the younger generation and their parents shy away because they have no idea how the industry has changed.

"Manufacturing has become high-tech, using sophisticated equipment and the latest computer-aided design and manufacturing software."

Jim Vassar, president and owner of Fidelity Tool and Mold in Batavia and a 1975 TCD alum, agrees that precision manufacturing is one the most overlooked career



Nick Bratta of Avanti Engineering in Glendale Heights talked to high school students about opportunities in the precision manufacturing industry at the recent Manufacturing and Engineering Technology Expo at College of DuPage.

paths by area students and parents. He, Bratta and other local manufacturers encourage people to visit their facilities to learn more about it.

"I've had people visit that had no idea what a manufacturing facility was," Vassar said. "When they left they were amazed at the type of salary range available and the benefit packages."

The average salary at Fidelity is more than \$50,000, with journeymen well above that and experienced engineers into the six figures. Like most mid-sized manufacturing companies, Fidelity Tool offers full services in engineering, design, programming and production. Vassar is in the market for an additional designer right now.

Both Vassar and Bratta believe programs like TCD's Precision Engineering and Design Technology are valuable for giving students insight into the role of manufacturing in every facet of the U.S. economy. More important, these programs foster professionalism, critical thinking skills and workplace skills that are too often lacking in today's employee candidates.

For entry level technicians, these two employers look for candidates who have a high school diploma or some college, critical thinking skills, a motivation to learn, dependability, and some technical ability/interest. In a proactive effort to grow their workforce, both companies offer apprenticeship opportunities to new hires.

In TCD's new program, students will put STEM competencies in math, physics and technology to work as they learn how to design, engineer and manufacture products and parts. They will use the latest advanced software (Revit, AutoCAD, and AutoCAM) and TCD's 3-D printers for prototype development.

Programming high velocity, computer numerically controlled turning and machining centers is also part of

the curriculum, where math skills include geometry and the ability to calculate equations for tight tolerances to the nearest one-thousandth.

The TCD program will be aligned to the National Institute of Metalworking Standards, affording students the opportunity to earn NIMS certification. Students also will earn dual college credit with the College of DuPage. Having the opportunity to be both college and career ready will equip students with marketable skills that employers like Vassar and Bratta are seeking.

Vassar points out that while U.S. manufacturing's new highly automated production processes may have eliminated many old "assembly line" jobs, they have created tremendous new opportunities in 21st century fields such as engineering design, computer science and robotics. "And don't forget," he added, "this not only means opportunities for technicians and engineers, but for people who can build, repair and program these new systems." For information about Precision Engineering and Design Technology at Technology Center of DuPage, visit TCD's program pages at tcdupage.org.



Mike Zimmerman is director of the DuPage Area Occupational Education System, the governing body for Technology Center of DuPage and other career and technical education delivery sites in the region.

TCD is the advanced CTE elective campus serving 14 high school districts in DuPage County and Lyons Township. Community members may schedule a personal visit or group tour by calling Kathy Rosenwinkel at (630) 691-7572.