

## Simulated Workplace Using Online Training Launches West Virginia Students into Manufacturing Careers



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**Kevin “Doug” Sands,**  
Machine Tool Technology  
Instructor, UTC

High school students in West Virginia are heading into manufacturing careers with strong technical skills and real-life work experience thanks to the West Virginia Department of Education Simulated Workplace.

Designed by a committee of experts from business and industry throughout the state, the initiative creates an authentic work environment where students learn accountability and necessary skills to help their careers.

During the pilot phase, more than 500 Career and Technical Education (CTE) classrooms are participating, covering more than 13,000 students. Next year, all CTE programs in West Virginia will participate, and other states are exploring this model.

### UNITED TECHNICAL CENTER PILOTS PROGRAM

One of the schools piloting the program is United Technical Center (UTC) in Clarksburg, West Virginia. The initiative allows UTC students to pursue online training through Tooling U-SME while learning hands-on skills at the school’s Precision Machining Company, which is run like a business.

“To ensure our students are career-ready, we have built a strong partnership between schools, industry partners like Tooling U-SME, and our community,” said Kevin “Doug” Sands, Machine Tool Technology Instructor, UTC.

The two-year CTE program is open to high school juniors and seniors from eight local high schools, covering three counties. Students learn the skills necessary to operate a variety of machining equipment, such as lathe, mill, grinder, drill press, CNC turning center and CNC machining center, as well as softer skills such as punctuality and cooperation.

“The UTC Simulated Workplace, which students named Precision Machining Company, operates like a machine shop and puts the students in charge,” said Sands. “They rotate through job roles such as foreman, project manager, and tool room attendant.”

The program integrates workplace environmental protocols that align with West Virginia workforce requirements, including random drug testing, professionalism, attendance and safety. State grants cover expenses such as time clocks, uniforms and drug testing.

## STUDENT OWNERSHIP

A major part of the initiative is ensuring students take responsibility for their education.

“Every six-week cycle, we provide students with all their requirements for online Tooling U-SME courses and the students schedule their time accordingly,” said Sands, who has worked at UTC for three years.

UTC relies on curriculum that is 100 percent Tooling U-SME, using custom program assignments. These bundles of classes, selected from Tooling U-SME’s more than 500 online courses, are pushed out to students at specific times during the semester. For example, students will work through the course bundle for weeks one through six before moving to the next bundle for weeks seven through 12.

Tooling U-SME online classes contain interactive quizzes, role-playing scenarios, shop “labs,” and CNC simulators designed specifically to reinforce key topics and enhance the learning experience.

“All the lesson plans are already there with Tooling U-SME,” Sands said. “We don’t have to remake the wheel.”

Halfway through, and again at the end of the school year, students take exams through Tooling U-SME’s Knowledge Lab. These are robust mid-terms and finals that test knowledge outside of basic exams for three pre-selected Tooling U-SME courses.

Before introducing Tooling U-SME, Sands took 36 courses himself.

“I didn’t want students to use it, if I hadn’t,” he said. “I fell in love with how the material was presented. It fits right in with our Simulated Workplace philosophy of giving more responsibility to students.”

Sands said that students like how Tooling U-SME adjusts to different learning styles. Some students with learning disabilities, for instance, like the audio feature that reads the text to them.

“Students like having access to Tooling U-SME courses anytime, even on a snow day,” Sands said. “We even had one student working on courses on his iPad up in a tree while bow hunting. The flexibility allows students to manage their own course load based on their schedules.”

Monitoring tools help the process, according to Sands. For instance, instructors can see how much time students have spent and monitor progress. With instant feedback and automated grading and homework assignments, the process saves considerable administrative time for instructors.

“If we see that a concept is trending low, we can reteach and reinforce that lesson,” said Sands. “It’s also simple to export results to a spreadsheet, which makes reporting easier.”

## NIMS ACCREDITATION

UTC’s Machine Tool Technology Program is the first in the state to become nationally accredited by the National Institute for Metalworking Skills (NIMS).

“A NIMS accreditation is the highest benchmark for metalworking training



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programs in the U.S. as based on national, industry-written and industry-driven skills standards, and we are proud to achieve it,” said Sands.

Tooling U-SME’s online content maps to NIMS as well as to American Welding Society (AWS), SME Certified Manufacturing Technologist and Manufacturing Skill Standards Council (MSSC) certifications. The curriculum aligns with local, state and national standards.

At the end of the two-year program, students have a portfolio to show to potential employers, documenting learning, credentials earned and projects completed. This includes at least 60 certificates from Tooling U-SME courses.

“This goes a long way with business and industry,” Sands said. “Tooling U-SME has had a huge impact on our program.”

UTC has received other accolades including earning a Schools of Excellence Award (2011-2012). Most importantly, the school’s collaborative approach helps ensure students are employable at the end of the program, meeting industry expectations.

“With Simulated Workplace, we see that students are more accountable and engaged, and manufacturers like the end product,” Sands said.



*UTC students learn hand-on skills at the school's Precision Machining Company, which is run like a business, in combination with pursuing online training through Tooling U-SME.*