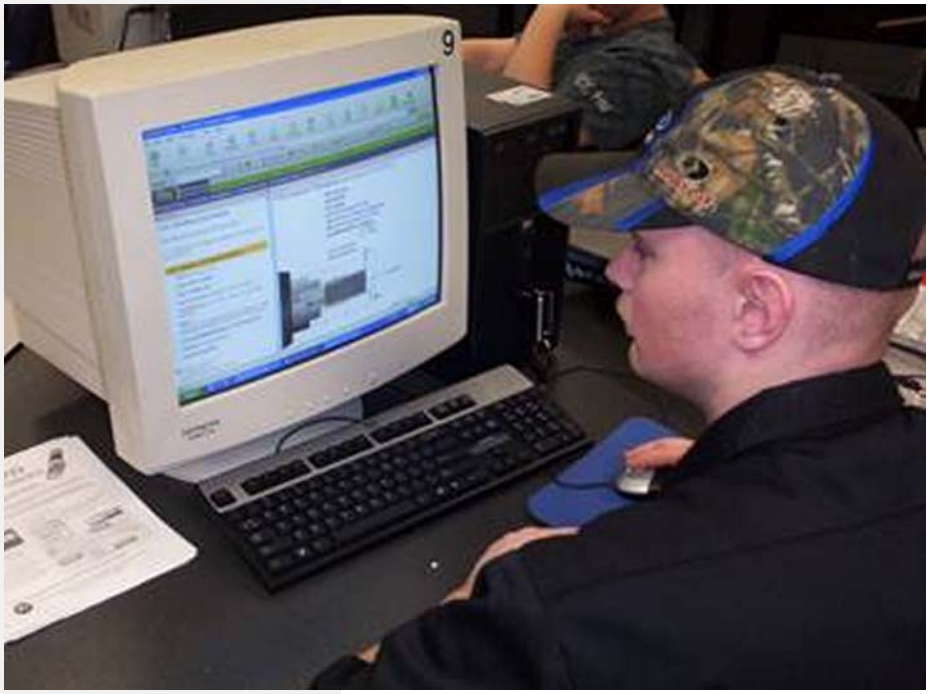
North Iowa Area Community College

What You See Is What You Get!

Virtual Training Environment Used to Teach CNC Programming and Machining Skills Over the World Wide Web



Students are required to prove-out setup and M&G code programming skills with virtual CNC controls and 3D machines, interactive curriculum and assessments before doing the real thing.

"VTE-CNC, training software, cuts costs as it makes education safer, accessible and more efficient."

- Kevin Losee

"With the Virtual Training Environment, we have actual machining center controls sitting right there on the computer. Students see what they're going to get out in the real world. It's not theoretical—it's the real thing."

This is how Kevin Losee describes the turnkey Virtual Training Environment for CNC (VTE-CNC), powered by Immerse2Learn.com. VTE-CNC combines learning content management; virtual CNC panels and 3D mill and lathe machines; and interactive graphical learning content. It's a cost-effective way to teach machining center operation and CNC programming.

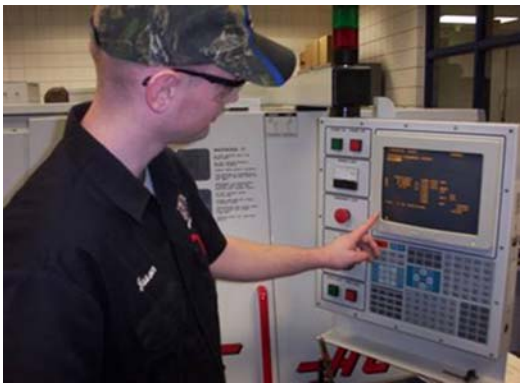
Losee is an Instructor in the Tool & Die and General Machinist program at North Iowa Area Community College in Mason City. He came to North Iowa after several years as a journeyman tool & die maker, and employee trainer. Losee has 13 students this term—nine high school seniors, three of junior college age, and a man with shop experience. Losee is in constant touch with employers and demands teaching materials that meet industry standards.

North Iowa is expanding its machinist program into area high schools. Losee recently showed the VTE-CNC to 20 Industrial Arts teachers. "Few high schools have a CNC machining center, so we're making ours available to them," he explains. "If they e-mail me their programs, I verify them. Then they can come here to run their parts on our machining centers."

There is tremendous interest in machining careers nowadays. Losee credits "American Chopper" and "American Hot Rod", two Discovery Channel programs, where viewers see machinists make parts with the latest technology. Job placement from his program is "just about 100 percent," he adds. His graduates work for 22 area firms. Calls come in from employers in Iowa, Minnesota, Illinois, and even Missouri, looking to hire graduates.

Safer, More Efficient

Before he purchased VTE-CNC, Losee taught with textbooks and DVDs. "We made the change to get a better product and not just to cut costs," he says, " but we're getting more for our money now." VTE-CNC includes interactive content with quizzes and games.



After mastering virtual CNC controls, students advance to operating the actual CNC machines.

All materials are on the Internet, which means that students can access them wherever there is a connection—and whenever they have time. They can work at their own pace, back up to review, and watch demonstrations over and over again. Soon they start working on the virtual CNC panels and 3D machines, develop their CNC skills, and even make virtual parts from M&G code programs.

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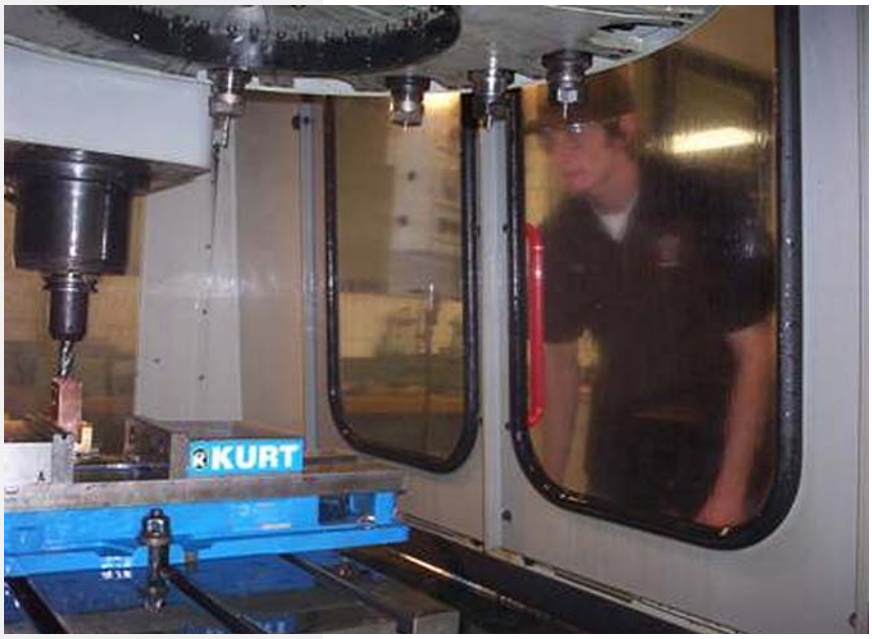
"Today's young people have played video games all their lives, so VTE-CNC's virtual reality and graphical learning content looks normal to them. No harm is done if they make mistakes that would crash a real machine. "Everything is virtual," says Losee. "They're not taking the chance of doing tremendous damage. A chuck can cost $5,000 and people get hurt in shop accidents. Safety- You can't put a price on that."



A student inputs tool offsets, prior to running a part program that was written and visualized with VTE-CNC virtual control panels and simulate 3D machines.

"With VTE-CNC, tracking student performance is a no-brainer"

-Kevin Losee

Students are Better Prepared

Students come to class better prepared because they've practiced with virtual CNC panels and machines that are identical to Haas machining centers, except for two little buttons on the virtual reality side, which set and reset the material size.

North Iowa has one Haas lathe and one Haas mill, which means that two students at a time can work hands-on. But each student also has access to VTE-CNC, so everyone can be practicing and learning at once. Losee calls this situation "controllable," with no crowding around the machines or students getting impatient as they wait their turn. Losee supervises people at the machines, giving them tips from his personal shop experience.

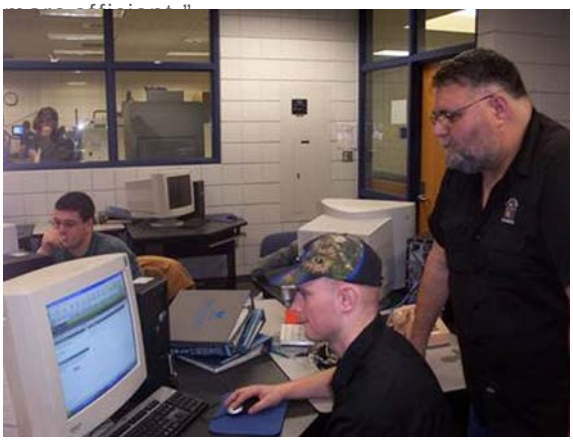
The same principles apply to writing CNC code. Students take their first steps with VTE-CNC virtual CNC panels and machines, which have alarms that tell them if their code would crash a real machine. Once they feel ready, Losee verifies their work, supervises a dry run, and then watches as they make their first real part.

Teacher Gets More Done

Losee likes VTE-CNC's flexibility and user-friendliness. "I can customize the program," he says, "put lesson plans into it, add quiz questions, and insert photographs." Immerse2Learn.com's staff responds fast to his requests and updates the program regularly.

VTE-CNC's automatic grade book and performance tracking helps figure grades, keep records, and gives Losee a comprehensive picture of each student's progress, saving him hours. "The software tells me what students are getting for grades, their pre-tests and post-tests," he states. "Everything is there and once it's there, it does not get lost." Performance tracking is "a no-brainer."

Losee thinks that training software is the wave of the future in advanced manufacturing education. He sees increasing use of virtual reality as the technology advances. Losee adds, "VTE-CNC, training software, cuts costs as it makes education safer, accessible and



Kevin Losee, Tool & Die and General Machinist instructor, watches as his student completes an online assessment.