Transcript: Show 40 July 16, 2012

Advanced technological education programs offered at community colleges across the country can help you get the experience needed for an exciting technical career.

The ATE program is very flexible, very adaptable and has the ability to really figure out where the workforce needs are today and tomorrow and to address those needs very quickly.

Mine has power.

What I'm looking for is students with initiative and ambition and smarts who don't need a lot of direction, can see things and are willing to kind of participate and say hey we could do it better this way. All the colleges that we work with have a very focused approach of aligning educational curriculum with industry needs.

With two numbers that multiply to give me -5 and add to give me -4.

Math is more than just numbers, it's linking abstract ideas, finding patterns. It's logic and geometry and coming up with ways to solve things. So it's a tool to help you describe your world.

That was my weakness in high school, was math.

We do a lot of applied training connected with the academics, so when a student is dealing with math or dealing with science where they may have felt somewhat intimidated by that, we now pull it back together and we show them how we're using math or how we're using physics in the classroom with the hands-on activities.

Now we got the two horizontal motors.

This program here you can design a part and then you can extrude it. You can draw the entire thing in three dimensional form. This is a frame for an ROV, remotely operated vehicle. This is going to be going under water. This frame is actually getting made by another student as we speak.

They realized that the industry was in trouble, that they need good, qualified people and they weren't finding them.

I see where you lined up.

So they really came to us looking for a way to reach more students, get them interested in the industry and help them to develop the skills that the industry needs.

Want to just disconnect that power entirely and--

They're challenged to apply what they're learning in the classroom to the real world to designing and building a vehicle to compete in real world mission tasks.

Welding is virtually in every industry imaginable. 92% of the manufactured goods have a welded component to them. A technician in the welding industry today has to have a lot of math and a lot of science background. It is not something that we can outsource, it's an industry and an occupation that's going to be here for the long term.

Sometimes I call the program industrial maintenance on steroids. We try to put all the different aspects of industrial maintenance, hydraulics, pneumatics, electrical, controls, computer, mechanical; we try to put them all together. The requirements for the program are basic algebra, English, and self discipline to be able to work independently, but mostly to want to work with your hands. We want them with their hands on the equipment.

We wire in the...

As to on here we're doing it on the computer.

All the courses intertwine together 'cause you can't have one without the other. They make sure that you understand what you're doing, you know what you're doing before they send you on.

Security covers every aspect of computing--databases, programs running the websites, programs distributing data, everything needs security.

I want to look specifically for SQL vulnerabilities. We'll have hacking competitions where we'll have to bring up a network that would represent a typical business and then we have a team that tries to hack our networks and bring down our business services.

We have to keep one step above the criminals, and the only way we can do that is if we have students that are going to have a knowledge level and a curiosity and ability to experiment with things so that they can recognize something that's unusual and be able to take the steps to stop something like that.

For more information on anything you've seen today, explore our website at atetv.org.

Thanks for watching.