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What happens when a community college and local industry team up to strengthen regional economy?

## DESIGNING A MECHATRONICS PROGRAM THAT FITS INDUSTRY NEEDS

### SPOTLIGHT ON...



- Coeducational, public, comprehensive community college
- Website: [www.wvncc.edu](http://www.wvncc.edu)
- Three campuses: Weirton, Wheeling, and New Martinsville
- Established July 1, 1972
- Total enrollment: 2,500
- Mechatronics program: two-year course, started in 2011, one full- and six part-time teachers with a cumulative 150+ years of industrial experience
- Project: \$2.78 million invested in building and training equipment, with more than \$700K earmarked for the Mechatronics program
- Main mechatronics supplier: Lab-Volt

Back in 2007, **manufacturers in the Northern Panhandle of West Virginia were facing an aging workforce with no pipeline of qualified individuals to rely on.** At the same time, increasing **economic pressures on the industry** stressed the need to hire trained, skilled workers. The skill set most needed related to mechatronics.

West Virginia Northern Community College (**WVNCC**) **heard the voice of employers and began discussing a new mechatronics program.** Discussions intensified when representatives of ArcelorMittal Steel Corporation met with the College to discuss their “Steel Worker for the Future” program and their needs at the Weirton plant.

At the time, however, **WVNCC had no facilities to offer such technical programs.** WVNCC administration decided to take advantage of the momentum to invest and collaborate with the industry to expand the College’s mission and become more comprehensive. WVNCC was also able to secure funds from State-issued bonds to help them formalize the expansion project, which included other programs.

## REQUIREMENTS FOR BUILDING FLEXIBLE MECHATRONICS LABS

The project broke ground in May 2011. WVNCC wanted to **create state-of-the-art mechatronics labs** that incorporated electrical and mechanical maintenance, instrumentation, and computer control.

The College began looking at equipment early in the design stage of the project. Amtek, an authorized dealer of Lab-Volt’s network, helped college representatives visualize the labs and select the right equipment to make the most out of the available budget.

The **brand-new labs were designed to be flexible** so that they could be arranged in any configuration. This way WVNCC could best serve the needs of credit courses, as well as training for employers and businesses. All trainers are on wheels and can be easily moved. Electrical connections are through an overhead bus so that there are few restrictions on how the equipment is positioned. This allows for an **optimal learning environment.**





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## HIGH-QUALITY, VERSATILE TRAINING EQUIPMENT FOR HANDS-ON TRAINING

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**High-quality, hands-on equipment** was selected in view of fulfilling not only current, but also future training needs.



The ability to **use real-life components to simulate systems students will experience in industrial settings** is invaluable. The flexibility afforded by the wide variety of components for each trainer allows the instructors to **use the equipment in creative ways**. It is also possible to quickly interchange components. **Equipment is easy to secure** and safety features allow it to be de-energized – “safe-out”, as one instructor described it. Systems can easily be faulted to enhance students’ **troubleshooting skills**.

### What’s in WVNCC mechatronics labs?

- [Mechanical Systems](#)
- [Hydraulics](#) and [Pneumatics](#) Trainers
- [Motors](#) and [Motor Controls](#)
- [Pumps Trainers](#)
- [Instrumentation and Process Control Systems](#)
- [Industrial Electricity Systems](#)
- [Rigging Systems](#)
- [Flexible Manufacturing Systems](#)
- And a lot more!



The curriculum that accompanies the equipment fits program objectives. Faculty reports that its biggest advantage is that it **helps them bridge the gap between theory and practical applications**. The material has been very useful and enhances the experiences for students.



WVNCC’s **mechatronics labs are now filled with engaged students and satisfied instructors**. Thus far, the equipment has required only routine maintenance. The instructors know they can rely on efficient and effective customer service in case of problems. Some of the equipment will also be used in the petroleum technology program and in the HVAC program.

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## REAPING THE FRUITS OF THE COLLABORATION

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Three years later, the Mechatronics program is now offered on two campuses, and 74 students are listed as mechatronics majors. Local businesses assert that **the program is ideal for creating the types of technicians needed in modern manufacturing**.

Thus far, four of the five students who graduated in 2013 were employed within two weeks of graduation. In 2014, more than 10 graduates are expected. **Employers have indicated that they would hire more of the graduates**.

WVNCC is **now viewed as the college of choice for providing industrial and craft training, and partnerships are being established with a number of employers**. Its leadership and adaptability to the needs of employers and businesses definitively **contribute to a bright economic future** for the Northern Panhandle of West Virginia.

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[Watch an introduction to the Mechatronics program on YouTube.](#)