



## Mechatronics Re-Envisioned

### CPCC—a National Leader in Workforce Development

Central Piedmont Community College (CPCC) has been a part of the Charlotte landscape for almost 50 years, becoming a national leader in workforce development. Their Mechatronics Engineering Technology program is well regarded across the state and prepares students for jobs with many of the area's leading advanced manufacturing companies. So, when local industry reached out to discuss their mechatronic needs, CPCC listened.

In order to compete more effectively in a global market, local manufacturers needed more candidates, and lots of them, with advanced manufacturing skills to meet their workforce requirements. CPCC realized there was a need to increase the number of area mechatronics technicians and saw an opportunity to address those skills gaps.

### Increase Number of Students With Industry Recognized Credentials

CPCC applied for, and was awarded, a \$2.5m Trade Adjustment Assistance Community College Career Training (TAACCCT) grant funded by the U.S. Department of Labor whose aim was to increase the number of students earning industry recognized mechatronics credentials. CPCC called for a curriculum modernization and a new teaching modality through its Mechatronics Re-Envisioned program.

CPCC worked with an e-learning developer to enhance the classroom experience by digitizing portions of the curriculum from ten classes within the mechatronics program. Their goal—students would engage with interactive content at home and come to class with a greater understanding of the material. The flipped classroom design would allow students to have a greater understanding of topics before entering a classroom. It also enabled them to dive deeper into the content, thus increasing their knowledge and comprehension.

### Central Piedmont Community College

#### Challenge

Under a tight deadline, CPCC needed to ensure a large amount of newly digitized curriculum content undergoes a final quality review before rolling it out to its students and stakeholders

#### IES Solution

NC State Industry Expansion Solutions (IES) extends highly specialized technical assistance and instructional design review to validate new curriculum content, while meeting deadline driven milestones

#### Benefits

CPCC leverages IES expertise for review and guidance, enabling them to meet deadlines and successfully close out a federal grant

Because these assets were developed with TAACCCT grant funds, these resources had to be shared with other NC institutions offering a mechatronics program as well as Skills Commons, an open digital library of Workforce Training Materials available to anyone. CPCC felt good about the updated curriculum and the impact on its students but, it had to be spot on. Therefore, CPCC looked for a third-party evaluator to conduct the final curriculum review—to validate the content as well as examine the instructional design of the online course components. The catch? A deadline of two months.

### **CPCC Turns to IES as Third Party Curriculum Evaluator**

CPCC turned to the Instructional Design team at NC State's Industry Expansion Solutions (IES) to act as a third party curriculum evaluator. CPCC had a previous relationship with the IES Evaluation Solutions Group, so there was an inherent connection. At first, CPCC wanted each of the other institutions offering mechatronics programs to provide review input and IES would coordinate the feedback. Ultimately, CPCC chose IES as a single source evaluator since they had both the manufacturing and in-house instructional design expertise.

The IES Instructional Design team got to work right away. CPCC created scoring rubrics to evaluate the sequencing of each of the learning opportunities. They evaluated the content for technical correctness. And, they evaluated the effectiveness of the flipped classroom for the adult learner.

As a result, CPCC was able to meet their strict deadlines and complete the full curriculum review in two short months. "The IES Instructional Design team was great to work with," said CPCC Program Coordinator, Rebecca Grant. "They were, in effect, a one stop shop to accomplish all that was needed so quickly. IES was able to help reduce downtime and inefficiencies during the review process."

"With help from IES, we have an updated mechatronics program that not only meets the need of the modern student, but can be built upon to address future industry needs," said Grant. "By utilizing IES, an organization known for delivering exceptional educational solutions, we were able to reflect a commitment to anyone who uses this curriculum, providing them with an exceptional learning experience."

**NC STATE**

Industry Expansion Solutions

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