BC3 expands hands-on learning opportunities

Butler County Community College's popular guitar making class has been blending fun and education for nearly four years, providing students insight into manufacturing career opportunities.

As a result of its success, the class and other science and technology programs are expanding, giving students more chances for hands-on learning.

Mike Aikens, who teaches drafting and engineering, has been the driving force behind the guitar making course. He said he has found teaching STEM (science, technology, engineering and mathematics) principles to be much more effective when he can connect with the culture of his students.

As a result, the course engages students with engineering tools and skills such as three-dimensional modeling, rapid prototyping, drafting and reverse engineering.

And now, the students are designing and building more than just guitars. One project challenges engineering students to design and build their own small guitar amplifiers. Students in the electronics department chip in with circuit board design and wiring.

Another project that spun out of the guitar making class was repurposing scrap wood from guitar bodies into furniture such as end tables.

"It's science, it's math, and it puts a fun spin on it for them," Aikens said.

One recent project even found students using their modeling and rapid prototyping skills to design molds to produce an exact scale chocolate replica of the Science and Technology Building, which they presented to President Nick Neupauer and the college's board of directors before Christmas.

Aikens said the origi-
time is split between learning theory and hands-on learning.
He said BC3's program also exposes students to all of metrology’s applications — dimensions, electronics, chemistry, pressure and vacuum, optics, fluids and heat transfer — so they can decide what they want to pursue, whether that might be using their associate degree for a career in calibration or quality control or pursuing further education and a career in any engineering field.

Ruediger emphasizes to his students the vast amount of career options available, and he uses himself as an example.

He has taught metrology for more than seven years, but he started his career with a metrology degree and worked as a tool and die maker, quality control specialist and engineering technician.

He went on to study mechanical engineering, but after he graduated with his bachelor's, he said what set him apart from other job candidates was his metrology background. The first topic his interviewers wanted to discuss was metrology, he said.

Ruediger said few people know about the metrology program, joking many think they are meteorologists studying the weather.

However, he gave the administration a lot of credit for understanding the importance of the program, even though fewer than 10 students are usually in it.

Ruediger said he regularly receives calls from companies in need of people with metrology experience, and he boasted nearly 100 percent job placement for graduates.

"I do a lot of recruiting to get students, and I do no recruiting to get job opportunities," he said.