UC Brings College into Area High Schools

By: Desiré Bennett

A new dual-enrollment program at UC brings online college engineering courses to enhance high school STEM programs.

The University of Cincinnati is offering a new dual enrollment program to promote STEM education in area high schools. The dual enrollment program was created to generate interest in engineering courses from high school students including women and minorities. Dual enrollment provides high school graduates with UC college credit for courses taken during their high school experience.

STEM disciplines, which include science, technology, engineering and math, are traditionally dominated by men. “Women are underrepresented in colleges of engineering, making up only about 15 – 20 percent of the student body, so we needed to do this,” said Eugene Rutz, College of Engineering and Applied Sciences academic director.

In the program students complete their first level of college engineering courses before ever stepping foot on UC’s campus. More than 520 students from 12 area schools, including four all-girls schools, are participating in this innovative program which offers first level college courses in high school. Ten schools are offering the program’s courses as dual enrollment, meaning students receive both high school and college credit.

“We saw an opportunity to provide content in a way that was engaging and accessible,” said Rutz. “By using video to record small lectures of our faculty and staff on engineering topics such as ‘What is engineering?’ ‘What is the engineering design process?’ We can make these available to the students and schools at their convenience, as often as they want.”

Using a flipped classroom model, UC delivers online lectures to the high school students who view lectures by CEAS faculty via webcasts at their convenience. Classroom time is led by high school teachers who lead engineering-based project activities and discussions on how the lessons will apply to their lives and careers.
Offering the program via webcasts allows for a range of options for content delivery. “I have a variety of faculty who are doing the traditional lecture capture in the classroom, but others say they just want to do it from their offices or homes,” Rutz said. “We use commercial software, My Mediasite* and the Mediasite Recorders*, to enable faculty to add content whether it’s in their office or classroom so the students can have a fuller experience.”

Gretchen Kellerstrass, 18, took two college-level engineering courses through UC during her time at Kings High School in Kings Mills, Ohio. She’s now enrolled in UC’s mechanical engineering technology program and is considering electrical engineering and computer programming. “This was my first experience doing an online course, and I really enjoyed it,” said Kellerstrass. “I learn better from viewing something and doing things hands-on. So I watched the lecture first, and I could observe it and understand it. Then I could go into the classroom and do the projects.”

Kellerstrass believes that participating in the dual enrollment program was life-changing. “I thought everything in our engineering class was so intriguing, I wanted to learn more and solve problems,” said Kellerstrass. “Taking these classes in high school let me test the waters. I never really thought engineering was a route for me, and now it’s going to be my life.”

“The University of Cincinnati, recognizing that’s it’s more important than ever to introduce students to careers in STEM, has created a model for preparing them for success in college and their careers ahead,” said Gary Weis, chief executive officer of Sonic Foundry. “It’s rewarding to support the university and the high schools involved in this program to advance educational opportunities and inspire a love for engineering.”

How many more women like Kellerstrass just need to “test the waters” of engineering to become comfortable with a career based on technology? STEM offers career opportunities for a broad spectrum of students. Rest assured that the University of Cincinnati continues to innovate, broaden its reach and delivery of quality courses at every level until everyone has a solid knowledge base of engineering and technology.
*Products of Sonic Foundry, Inc.*

View video of program description by E. Rutz, UC-CEAS academic director

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