Innovative Engineering Curriculum

In her first semester, Courtney Brown ’15, of Chicago, and several classmates in her introductory engineering course undertook a project on biofuel production. The experience gave her technical knowledge, developed her teamwork skills—and confirmed that she didn’t want to be a chemical engineer.

Such outcomes delight the College of Engineering. They indicate that the Freshman Program, which emphasizes active learning, is doing its job—giving students hands-on, multidisciplinary experience in engineering analysis, design and research.

“We worked from our strengths, learned from mistakes and discovered which disciplines we liked,” says Courtney, who found her passion for structural engineering doing a steel-beam project.

The Freshman Program has been in the national spotlight and exemplifies how the quest to develop an outstanding innovative curriculum ignites the imaginations of faculty and administrators, who are committed to piloting pedagogical models and spurring creative thinking.

In the Multidisciplinary Design Lab, student teams use state-of-the-art workstations to tackle real-world, industry-sponsored projects. “The collaborative space helped us to develop design thoughts and get feedback from sponsor visitors,” says Zheng Rong ’12, an international student from China who worked on an Exelon project this past year.

The Engineering Entrepreneurship minor program challenges students to develop and launch new products and services. “I’m learning to think in a different way and to come up with innovative solutions,” says Andrew Walters ’15, of Burlington, Ky. The College belongs to the Kern Entrepreneurship Education Network (KEEN), which won a Gold Award at the 2012 Edison Awards Gala.

Through these and other initiatives, the College fosters the culture of innovation that helps to make its undergraduate curriculum one of the country’s top-ranked programs.

Villanova’s nationally recognized, innovative undergraduate engineering curriculum attracts top students from across the country and around the world, including Courtney Brown ’15, Andrew Walters ’15 and Zheng Rong ’12.