Students power Purdue Dining upgrades through academic partnerships

No one likes waiting in line, but the lines are a little shorter at the Lemongrass restaurant in the Purdue Memorial Union thanks to some literal engineering by Purdue students.

The results of an Industrial Engineering 431 senior design capstone project include an average 23 percent reduction in wait time in line at Lemongrass, a Far East eatery in the Union Commons that shares a space with sushi spot Ah-Z. Based on daily traffic, that reduction in time in line adds up to two hours saved for Lemongrass and Ah-Z customers every day, time that could be better spent in a classroom or study lounge. Additionally, the four-student team proposed a new digital self-service ordering system and redesigned seating layout for the restaurants.

IE 431 classes together complete 20-30 projects per semester with organizations within the industrial, governmental, financial, healthcare and pharmaceutical sectors. Most of the organizations are Indiana businesses, but one last semester was as far away as British Columbia, Canada.

Purdue Dining & Catering has been partnering consistently with the class for 7-10 years, and Dave Kotterman, director of industry relations for the School of Industrial Engineering, recalled classmates doing projects on campus dining when he was an industrial engineering student himself in the 1980s.

“Dining & Catering is one of our more substantial and consistent customers. They are so good about giving us projects, and it’s all about increasing student service and satisfaction of the dining experience here at Purdue,” Kotterman said. “They’re always trying to improve, which I think is a great characteristic of a management team that gets it.”

Each senior project lasts the duration of a semester, with up to 100 hours of work per student. Students are mentored by a graduate student and a faculty member and meet weekly with an organizational representative, like manager of student success Mary Jo Zeiser for Dining & Catering. The teams act as consulting groups, tracking costs within a hypothetical $60,000 budget. Nearly half of the projects from the fall semester reported cost savings through their projects, with average annual real-world savings of $73,868 for those sponsoring organizations.
“One thing we do stress is to actually introduce engineering concepts and quantify our outcomes,” Kotterman said. “It’s one thing to be anecdotal in nature, but we really stress working the engineering side and the business side – cost-savings and engineering concepts like minimizing waste and improving efficiency, and relaying that back to the dollar values that we save customers.”

Along with the Lemongrass project, engineering students studied line queueing in the dining courts and the efficiency of the Hillenbrand Dining Court take back program last fall. In the spring semester, IE 431 teams are doing projects on operational efficiency of Harrison Grillé, Pete’s Za and the Daily Bite food truck; Ford Dining Court outside patio layout and design; and efficiency in the Purdue Memorial Union catering kitchen and dish room.

Students have a hand in helping put forth ideas as well. Dining & Catering administrators meet monthly with a student advisory group, which has more than 40 students this semester.

“A couple of the projects we’re working on now were recommended by our student advisory group,” said Greg Minner, director of Dining & Catering. “We talk to them about the projects we’re working on and ask them about ideas for more projects.”

Dining & Catering’s academic partnerships also extend to the Department of Agricultural Economics, which initiated a waste management study in the dining courts that will begin in March, and last year Dining conducted research in partnership with the Department of Food Science on locally-sourced soybean oil’s cooking performance and impact on food quality.

“At the University of Alabama, their engineering students worked with athletics on a medical tent. The university was working closely with their engineering departments to solve problems,” said Tom Coleman, director of retail dining for Dining & Catering. “That’s how we should be themed – taking advantage of our academics and putting them to use.”

Writer: Matt Watson, watso101@purdue.edu

Sources: Greg Minner, director of Purdue Dining & Catering, gminner@purdue.edu

Tom Coleman, director of Retail Dining, coleman@purdue.edu

Dave Kotterman, director of industry relations for the School of Industrial Engineering, dkotter@purdue.edu
Inside the Lemongrass restaurant in the Purdue Memorial Union, the site of an Industrial Engineering 431 senior capstone project. Photo courtesy of Purdue Dining & Catering.