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Rock Star

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Rock Star: University of Dayton, Ohio

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Thursday March 14, 2024

Rock Star

By Eric F. Spina

When Dr. Sidaard (Sid) Gunasekaran '12 '16 won the prestigious KEEN Rising Star Award, the organization awarded him a sleek electric guitar, worthy of a rock star.

He *is* a rock star among University of Dayton students and faculty in the School of Engineering and in the aerospace engineering world.

His students affectionately call him Sid. He's an engaging, innovative teacher, an ingenious researcher, and a caring mentor. He caught the attention of the Kern Entrepreneurial Engineering Network (KEEN) for the way he's <u>cultivating an entrepreneurial mindset in UD engineering students</u> that sets them apart from their peers.

When I studied mechanical and aerospace engineering in college, I learned by "plug and chug" — plugging a value into an equation and chugging out the answer. That's not a recipe for success, and I had to change my mindset when I started graduate school. That's also not the approach Sid takes. He wants his students to be more than just "equation users." He encourages them to look at problems from different perspectives, follow their curiosity, and ask the question, "How does this solution add value?" It's a mindset.

On the first day of every course he teaches, whether it's "Intro to Flight" or "Aircraft Design," he asks students one question: "Imagine you own a Boeing 707 airplane, and you have all the money in the world to spend on that airplane. What would you do?"

Most students talk about updating the engine or making the wings more efficient. Only two students in the last six years have answered, "I am going to fill the airplane with food, fly to Africa to feed the needy."

That's the kind of big-picture mindset he's instilling in his students, partly through his teaching and partly through the use of portfolios. Although some of his students groan, they write, in their own words, in their journals how they arrived at solutions. In the process, they're making connections between concepts. They're looking at value creation. They're taking the long view.

"Engineering is more than formulas. Through writing in their portfolios, students are able to articulate a complex topic in a way that makes sense to them and others," Sid explains. "They complain while they're doing it, but after they look at their body of work, they're profoundly surprised. They learn the subject — and they also learn how to learn."

Take Sam Gepperth, a senior from Bay Village, Ohio, who says he has "gotten more out of (Sid's) flight design course" than any course he has taken. "Not only did I learn more about aircraft performance, flight design, and flight simulation, but I also learned how to be a better student and how to reflect and learn from my mistakes."

Sid says he adapted his teaching style after attending workshops at KEEN and incorporating the three C's — curiosity, connections, and value creation — into his courses.

Teaching, he believes, is an art. "If an actor plays only one role, there's no range," he says. "Teaching is an art form that requires preparation, strategy, techniques and goals — and passion is at the forefront. The field of aerospace is built on passion."

Sid never imagined living and working in the same town the Wright brothers called home.

"There is a rich legacy to this field," he says. "Students are learning not just a subject, but a legacy. And by learning the subject, they're becoming part of the legacy."