

Engineered for Success



AGRICULTURAL ENGINEERING STUDENTS PARTICIPATING IN FARM SHOP CLASS IN 1938.
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Walking into the registrar's office of Howard County Junior College, a conversation that would shape Daniel Cave's future began. As Cave sat down, a single question from the registrar broke the silence.

What are you going to major in?

The 18-year-old said he was interested in engineering. The registrar answered with an off-handed remark, questioning his ability to complete a difficult degree such as agricultural engineering. The comment bothered Cave.

"Basically it was a challenge," Cave said. "I thought, 'You know, I don't like what he said, and I am just going to show him.'"

Cave took on the challenge of obtaining a degree in agricultural engineering from Texas Tech University in the fall of 1958. He chuckled to himself realizing that after he left the junior college, the registrar never knew he graduated two years later.

Almost 60 years after Cave walked the halls of Texas Tech, today's students are still being engineered for success through the contributions of the outstanding staff, academic and technological innovations, and opportunities for research and public service. But getting to this point was a challenge in itself.

According to archived correspondence from the office of the provost, the Department of Agricultural Engineering found it difficult to keep up with the fast-paced technological advances of the time given the financial resources available. It was at that time Texas Tech had to make the unpopular decision to retire the agricultural engineering degree.

In March of 1982, the department discovered it was falling short of the requirements set by the Accreditation Board for Engineering and Technology (ABET). The accreditation board determined computer utilization was inadequate and because of the excessive teaching load for the small staff, there was little opportunity for research within the department.

To meet these shortcomings, the Department

faced a new challenge: how to modify the program to gain both accreditation and support from Texas Tech.

The dean of the College of Agricultural Sciences, Sam Curl, and dean of the College of Engineering, Jimmy Smith, were given the challenge to draft academic recommendations to the Board of Regents that would maintain the Department of Agricultural Engineering's accreditation within the ABET and status within Texas Tech. Their solution was to transfer the degree to the College of Engineering, which had a greater bank of resources and faculty.

After reviewing the demand for agricultural engineers, student enrollment, curriculum, and graduate studies and research, the Board of Regents approved the transfer of the agricultural program to the College of Engineering in 1983.

However, agricultural engineering was short lived in the College of Engineering. In an effort to generate higher enrollment, the Board of Regents wanted to create a degree with a larger focus on environmental issues.

In July 1991, Donald R. Haragan, the executive vice president and provost, recommended that the Department of Agricultural Engineering be eliminated, and the degree programs phased out over the next two years.

Arrangements were made for a new graduate program in environmental engineering and environmental technology and management to fill the gap left by the removal of agricultural engineering. This program offered opportunities for research on environmental problems, including those related to agriculture and natural resources.

Mukaddes Darwish, Ph.D., associate professor of engineering at Texas Tech, was pursuing an agricultural engineering master's degree in the midst of these changes. She said she believes agricultural engineering would have thrived as a degree program had it not been phased out. The Turkey native has seen the demand for agricultural engineers globally.

"We need water, food, and air to live," Darwish said. "Agricultural engineers are trained to work with these basic necessities."

Darwish said she believes agricultural engineering approaches curriculum in unique ways that environmental engineering cannot.

"You take all the same core classes, but when you are specializing in an area like agriculture, you become more valuable," Darwish said.

Michael Galyean is the current dean of the College of Agricultural Sciences and Natural Resources and said he understands the reasoning behind the removal of agricultural engineering.


"Sometimes you have to make business decisions for a university, even if they are not popular," Galyean said.

Regardless of the current status of the degree, the department's coursework did not fall short in preparing graduates for challenges up to 50 years in the future.


"Engineered-based programs tend to prepare you in fundamental ways that allow you to change with the times," Galyean said.

Galyean said he feels agricultural engineering would still serve as a valuable degree and wishes it were still available for students today.

"There is a demand for those kind of kids," Galyean said, "but the cost of starting up an engineering program again would be really difficult."

A degree in agricultural engineering gave Cave and many other Texas Tech graduates a foundation for success. They can be found drawing constructional plans for new a cotton gin, researching safer pesticides, constructing the latest agricultural machinery, or farming a large plot of land in West Texas. With an abundance of opportunity and a global demand for agricultural engineers, it seems only fitting the degree make its way back into the curriculum at Texas Tech. 

Jaelyn Roberts

Brownfield, Texas 



DANIEL CAVE, 1963 GRADUATE OF TEXAS TECH UNIVERSITY, PROUDLY EXHIBITING HIS DIPLOMA FOR A BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING.