

Ethan Warner of Brookings competed in the Baja Society of Automotive Engineers California

May 26, 2024



Twenty-six students from Oregon Tech's Baja Racing team traveled to Lebec, Cali., April 25-28 to compete in Baja Society of Automotive Engineers (SAE) California, where students test their self-built off-road vehicle for performance and endurance.

Ethan Warner of Brookings attended the event as part of Oregon Tech's Baja Racing team. Warner is pursuing a Bachelor of Science in Manufacturing Engineering Tech at Oregon Tech.

Baja SAE is a Collegiate Design Series competition run by SAE International. Oregon Tech finished No. 17 out of 61 teams from Canada, Mexico, India, and the United States in the three-day competition, which included static and dynamic events. The static events consisted of engineering design, safety, and cost presentations. The dynamic events included an acceleration braking event, a maneuverability event, a hill climb, and a four-hour endurance race that pitted all the vehicles against each other on an extreme rough off-road course.

Oregon Tech Racing advisor Cliff Stover is also a Professor of Mechanical and Manufacturing Engineering and Technology and believes that combining an engineering education with the hands-on aspect of building and testing a racing vehicle from the ground up enhances student education.

"These projects not only strengthen the students' engineering design and analysis skills, but they are also a great way to work in a real-world team environment and to satisfy their senior design requirements," Stover said. "Each team is competing to have its design accepted for manufacture by a fictitious company. The students function as a team to promote, design, build, test, and race these vehicles within the scope of the rules provided by SAE. The goal is to design and build a prototype four-wheel drive single-seat off-road vehicle intended for sale to the public."

Each year, Oregon Tech Baja students build a new off-road vehicle from scratch, sometimes using the knowledge gained from students in the previous year but many times experimenting with their own mechanical engineering skills and fabrication techniques.

Oregon Tech Baja co-captain Owen Haugh said that the Baja team is one of the main reasons he chose to attend Oregon Tech.

"Baja SAE is an excellent way to enhance your engineering knowledge, offering real-world experience and problem-solving opportunities not found elsewhere at school," Haugh said. "Through participating in and leading it over the past three years, I have acquired many skills I might never have encountered in a traditional classroom setting."

The Kohler corporation donates a 10 horsepower off-highway vehicle engine to participating schools for the competition, and Stover says the engine cannot be modified. Students must focus their design skills on the chassis, suspension, and all other aspects of vehicle design.

"These events challenge the textbook knowledge of engineering, along with engineering students' imagination, teamwork, and creativity," Stover said.

The Oregon Tech Baja team began building its car in the fall, and it was ready for off-road testing in March. During this testing, they experienced parts breaking and practiced troubleshooting repairs, each time learning why pieces failed and how to avoid them in the real competition.

"Programs like Baja SAE are vital for providing the environment a university needs to produce well-rounded, effective engineers," Haugh said.

About Oregon Institute of Technology

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