

CORNELL BAJA RACING TEAM

By ANSYS Advantage Staff



Cornell's Baja Racing team is an undergraduate engineering project focused on designing and building an off-road race car for the SAE Collegiate Design Series Competition. Each contest is a three-day event that tests every aspect of the car. On the first day, the team presents the vehicle design to judges who score the design and cost. The second day includes short dynamic events, such as racing the clock over a short course in which the car must pass over 2-foot diameter trees and 6-foot drops. The final day is a four-hour endurance race.

"The Cornell Baja Racing team uses ANSYS software to provide early design intuition for structural components, optimize components for mass and strength, verify and validate selected designs, and

benchmark existing components," says Alexander Masetti, undergraduate student at Cornell. For example, students used ANSYS Mechanical to investigate ways to improve current A-arm design by modifying the tube cross section and placement. They used ANSYS Mechanical to choose proper bracing within the trailing link

The Cornell Baja Racing SAE team uses ANSYS software to provide early design intuition.

structure as well as nominal tube sizes and wall thicknesses. The team modeled ball joints and tie rod ends with remote displacements; they modeled compression in the hub bearings and its effect on upright loads. ▲

Learning Experience

ANSYS and Cornell University have developed a unique collaboration that has flourished for well over a decade, helping to extend Cornell's reputation as one of the world's leading research institutions. ANSYS software is used by students and teachers in the classroom as well as by project teams and researchers to solve challenging mechanical and fluid-flow problems.

References

Cornell University Baja Racing SAE
baja.mae.cornell.edu