

Mines Formula Field Session Request 2

Driving Simulator Car Builder

Company Background:

Mines Formula is a student club at the Colorado School of Mines in Golden, Colorado. We are made up of students from a variety of engineering majors including mechanical, electrical, chemical, petroleum, and environmental. We range from incoming first year students to graduate students. We participate in the annual Formula SAE competition.

The Formula SAE competition entails the design, manufacturing, and racing of an open wheel, internal combustion engine race car. Each year, hundreds of schools from around the world meet to see who created the best vehicle. Teams are judged on their design presentation, cost analysis, business proposal, and vehicle performance. The four day competition tests the students' engineering and teamwork skills.

Project Description:

Students will first modify the driving simulator game assetto corsa to take a complete design data package for the formula sae car to create a formula car model within the driving simulator. Then the team will then create an interface to input other design data packages that will create a car model after all data is input. Some of the design data concepts are as follows.

Aero: Data given in tables also known as aero maps

- Different downforce levels for
 - Ride height
 - Velocities
 - Yaw
 - Pitch

Suspension:

- Tire data
- Suspension pickup points



- Camber and Toe curves
- Heave/Roll Stiffness/Control
- Mechanical data

PowerTrain:

- Engine Curve
- Gearing
- Fuel

Desired Skill Set:

- a. Interest in Mines Formula or simulation or video game modification
- b. General Programming Abilities
- c. Experience with video game modification

Team Size:

The desired team size is four students.

Location for Work:

The working location is extremely flexible and the students will have the opportunity to either work in person on campus or remotely whichever works best for them.

Faculty Advisor - Dr. Gregory Bogan

Mines Formula Lead Engineers - Gavin Graff & Dominic Mobley & Alex Edwards

Contact Information - minesformula@gmail.com

