Vehicle dynamics

Design of an anti-roll bar

Green innovation meets performance

Our Project

Formula Electric Belgium is a team of engineering students who build a **Formula-Student racecar** to compete in international competitions. We design and build a brand-new car every year and compete with other teams in multiple worldwide competitions during the summer months. Formula Student is by far the biggest **engineering competition** in the world and continues to grow. From next year on, we will be competing in both the **electrical** and **driverless** competition. You can join the project as a volunteer. This allows you to contribute to the next race car whilst keeping a flexible schedule**.**

Tasks

During **cornering**, the car transfer its weight to the outside wheels. This phenomenon, called **roll**, is detrimental the car's **handling**. To counter this, an anti-roll bar can be used. This allows the front and left suspension of an axle to compress or extend together, but not in anti-phase of each other.

The design of the **anti-roll bar** will consist of three phases. First the part needs to be **drawn** and dimensioned in NX. Next, dynamic **FEM simulations** need to be performed to check if the component is strong enough to withstand the forces from the suspension. Finally, the anti-roll bar will be **produced** and **tested** in the real world to validate the findings of the simulations.

Profile

- Basic knowledge about vehicle dynamics
- Experience with NX
- Experience with FEM simulations

Returns

- A unique engineering experience
- Applying your engineering skills on a real case
- Work in a team of young and motivated engineering students
- Learn about vehicle dynamics and current CAD software

Up for the challenge?

Want to perform a similar case-study within our team? Submit your **resume** and **motivation letter** (one page) to volunteers@formulaelectric.be