



Vehicle dynamics

Design of a suspension testing-rig

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

The cornering performance of a racing car is largely dependent on its **suspension**. A conventional passive suspension uses springs and dampers with fixed characteristics that have been selected based on the **best compromise** of various factors. A semi-active suspension however has the possibility to alter the damping characteristics so there is no need for compromises.

A semi-active suspension should therefore improve the handling and performance of the car, given that it functions properly. This case is about designing a modular **testing-rig** to determine the operational bounds of the semi-active suspension. This testing-rig will be equipped with the semi-active system for it to be characterized on a **4-poster**. During this case, the testing-rig will be designed and analyzed in NX.

Profile

- Basic knowledge about vehicle dynamics
- Basic knowledge about suspension geometries (double wishbones, push-rod with rockers, etc.)
- 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 race car design

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