

K&C testing of a Formula Student Racecar



OUR PROJECT

Formula Electric Belgium is a student-run electric race team which competes in Formula Student, the world's largest competition for engineering students. We aim to push the limits of performance, innovation and sustainability within electric racing every year, which is only possible with the help of our Thesis students. These pioneers are responsible for performance-defining innovations within the team, and we would love for you to join our team of highly ambitious and motivated engineers. As a Thesis student, you will research, design, prototype and test your innovations alongside the full-time members which make sure the team pushes itself and the car to new heights.

AIM AND OBJECTIVE

The aim of this master's thesis is to develop and evaluate a Kinematics & Compliance (K&C) testing methodology for a Formula Student race car to quantify key suspension characteristics and support data-driven suspension development. The project seeks to provide the team with a repeatable, accurate, and cost-effective testing framework that reduces dependence on assumptions or external services while improving understanding of suspension behaviour under representative loads.

The core objective is to experimentally determine geometric suspension parameters—including camber gain, toe and caster variation, and roll-center migration—as well as compliance effects arising from structural elasticity and joint flexibility. Additional emphasis is placed on assessing how wheel loads influence steering behaviour and compliance steer, both of which affect vehicle predictability and driver confidence.

To achieve these objectives, a bespoke K&C test rig will be designed and constructed to induce controlled wheel displacements and load cases such as heave, roll, steer, and lateral input, with results compared to simulations and existing K&C methods.

PROFILE

- Strong interest in vehicle dynamics.
- Analytical and problem-solving mindset
- Motivated team player with strong communication skills
- Basic knowledge of CAD and FEM
- Data Management skills

RETURNS

- Unique experience within a racing team
- Genuine work experience to carry with you into your career
- Exposure to cutting edge technology and software

INTERESTED?



Send us your contact details and field of interest to

recruitment@formulaelectric.be