

Project Title: **Suspension**

Supervisor: **TBC**

Project details:

While vehicle stability may be less of a problem this cycle compared with previous designs due to the vehicle being wider to accommodate extra passengers, the transition from Challenger Class to Cruiser Class will provide its own challenges with the increased vehicle size. Ensuring that the suspension has sufficient performance and suitable stiffness and strength will be an integral part of this.

The design of the 2019 race vehicle's suspension will be constrained to a large extent by the choice of concept and key layout decisions made in light of the release of the regulations for the 2019 World Solar Challenge in June 2018. These include restrictions on turning circle, steering, the maximum dimensions of the car and the internal space for the driver and passengers.

You will need to develop a full understanding of the construction, mechanism and expected performance of the resulting system. It will involve understanding the kinematics of the suspension geometry to ensure the car will be stable, particularly in high speed or high load situations. We seek a setup with flexibility, and hence expect you to incorporate the ability to adjust key parameters such as toe and camber angle, and produce suitable documentation on how these adjustments can be made.

Finally, the car must have a level of practicality, and hence features such as jack-points must be worked upon in collaboration with others on the team.

Closely linked projects: "Chassis Structure", "Bodywork" and "Steering, Brakes, Wheels & Tyres".

Desired Skills and Experience:

*Note: These are not essential (unless listed in **bold**) and those who receive roles will be offered training to compensate for any gaps.*

- **Proficiency in CAD, particularly Solidworks**
- **Good understanding of the fundamentals of vehicle dynamics, e.g. suspension kinematics, tyre dynamics**
- Proficiency (or willingness to learn) FEA, particularly Abaqus
- Ideally done the Part IIA Automotive Suspension Project
- Some experience in designing with composites
- Good communicator of ideas
- Willing team player
- Prior interest/experience with solar cars/CUER
- Flexible and able to work to tight deadlines