

Project Title: **Bodywork**

Supervisor: **TBC**

Project details:

The unique and futuristic shape of CUER's race vehicles leads to a very challenging bodywork design. Transitioning from the Challenger Class to the Cruiser Class also means that a fundamental change in the body design is required. The vehicle's body is not only an aerodynamic device but must also be stiff and strong enough to withstand structural safety requirements. While the aerodynamic design determines the shape of the vehicle, it is important for the bodywork engineer to ensure that the shapes of the panels are manufacturable, all components are road legal, and panel gaps and seam lines are of good quality.

The project also involves designing connections between bodywork panels and structural parts of the chassis such that they interface properly. The project encompasses all external parts of the vehicle including wing-mirrors, doors, handles, and windscreens. The design of the body will largely be constrained by road regulations and the regulations for the 2019 World Solar Challenge, which will be released in June. These include restrictions on the maximum dimensions of the car and the location and geometry of external lights. Other requirements, such as wheel covers that give easy access to the wheels, will be vital for good race performance. Your design will need to meet these regulations and as well as strict safety standards. CUER seeks a vehicle design with modularity in mind. Consideration for convenient packing and shipping must also be taken.

A successful body design will not only lead to a winning vehicle in this race cycle but also provide an important design reference for the team in the years to come!

Closely linked projects: "Aerodynamics", "Chassis Structure" and "Suspension"

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 with emphasis on surface modelling, particularly in Solidworks**
- Experience in designing with composites
- Proficiency (or willingness to learn) FEA, particularly ABAQUS
- Good communicator of ideas
- Willing team player
- Prior interest/experience with solar cars/CUER
- Flexible and able to work to tight deadlines