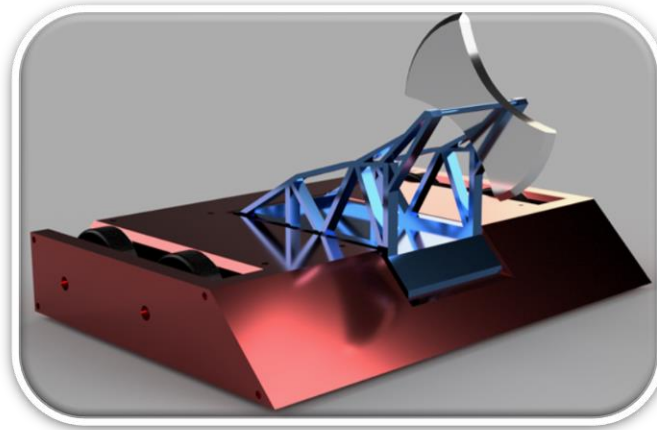


University of Warwick Fighting Robots Team

## Robot Weapon Challenge

The aim of our competition is to design a weapon system for our modular, sustainable fighting robots.



Example robot design made by one of our team!

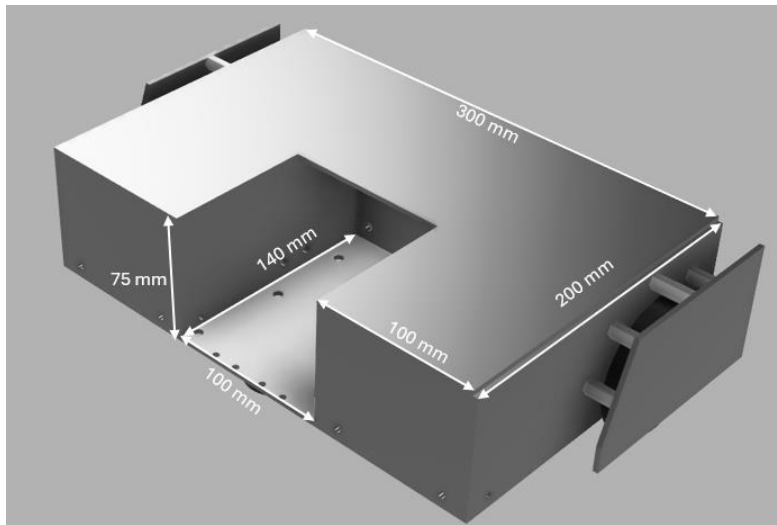
We are looking for interesting weapon ideas that can be applied to our fighting robots. Our specifications for you are as follows:

- Make contact with, and deliver damage, to an opponent robot located directly in front of it.
- Have an activation and deactivation method (user via remote control, automatic via sensors, etc.)
- Have all non-moving parts (motors, gears, axles etc.) secured to the robot body.
- Have a physical locking mechanism for any moving parts, and a safety cover for any sharp parts for when the robot is not in battle.
- Basic restrictions for how you can cause damage include: Fire, Loose Projectiles, Electricity and Liquids.
- You may ignore the specifics of batteries, wiring and electronics.

Some things to consider:

- What materials could you use? Are they durable enough, cost efficient, environmentally friendly, etc?
- Could you design it so that individual parts are easily replaceable/repairable if they get damaged?
- Typical combat robot weapon types include spinners, flippers, hammers, wedge bots, and more that can all be found online. However, we encourage you to think outside the box and come up with something new!

## Basic Robot Design:



This is the basic robot design template; you can change it to fit your design as long as the main dimensions remain the same. We recommend keeping the majority of the weapon parts within the cut-out area in the middle where they will be protected by a weapon box (not shown). You are allowed to make use of all the space on top but remember that anything on the top is more likely to get damaged when fighting!

## Secondary Level Competition, ages 13-16:

- Students should do some research, and then design weapon ideas that would fit the template.
- They are encouraged to draw, and annotate, their ideas by hand on paper, with sketches of the overall design and close-ups on individual parts.
- At this level, we are most excited by the creativity of your ideas!

## Sixth-Form / College Level Competition, ages 16-19:

- Students at this level should still research and design ideas as above but can also begin to consider the specifics of how they plan for their weapon mechanics to work.
- They are also encouraged to utilise 3D Computer Aided Design (CAD) if they would like to.
- Be sure to include what decisions you made and why along the way!

If you have any questions about the technical details of the competition, please contact us through WMG.