

## **Abstract**

The main purpose of this final paper is to measure the hull resistance of different kind of hulls for the solar boat. This way we can choose a hull for the solar boat with the least hull resistance.

The measuring set-up consists of a sling on which a winch was mounted. This winch will pull the hull over the water. The sling on which the winch is mounted would want to move forward at that point because the hull undergoes resistance. The force with which the sling is pulled forward represents the hull resistance. For this, a force meter is used on which the magnitude of this force or hull resistance can be read.

The speed at which the winch runs is displayed and controlled by Arduino. The cord that is rolled up by the winch must also be nicely distributed over the drum. This is achieved through the use of a linear stepper motor which is also controlled by Arduino.