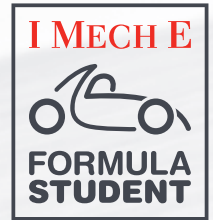


## FORMULA STUDENT

Institution of Mechanical Engineers



# Congratulations to Instituto Superior de Engenharia de Coimbra

FOR PARTICIPATING IN FORMULA STUDENT 2008

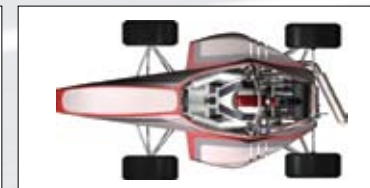
We are a Portuguese team from Coimbra Engineering Institute and this is our first participation in class 1. In FS2007 we participated in class 3 acquiring great experience and knowledge.

The phisec racing team is made up of nineteen elements including the following: suspension and steering, chassis, engine, drive train and body, electronics and brakes. The Phi1 was built to satisfy these main goals: low weight, high performance, low cost production, facility to build, marketability and maintenance ability.

The propulsion of phi1 is from a Honda CBR600 RR. The intake geometry of this engine was changed so as to offer the best performance possible within competition rules. We focused on the exhaust geometry, as well as a solution to locate the exhaust manifold. We were therefore able to find a good balance with the centre of gravity.

The overall measurements of the car were achieved to offer good dynamic behaviour and with this, reduce unwanted weight transfer.

The braking system should be reliable and provide adequate stopping distance to give the driver confidence and take the car to the limits by braking harder and later.



**Length/width/height/wheelbase**  
2706mm/1479mm/1087mm/1510mm

**Track (front/rear)**  
1250mm/1200mm

**Weight including 68kg driver (front/rear)**  
135kg/165kg

**Suspension (front/rear)**  
Unequal length A-Arms. Push rod actuated Fox Vanilla R spring/damper units

**Tyres (front/rear)**  
7.2/20.0-13 Crossply AVON

**Wheels (front/rear)**  
BBS 13" x152,4mm +10,8mm offset, 4mm thick Aluminium

**Brakes (front/rear)**  
Steel 220 mm ext diameter; 89mm int diameter; 5mm thickness

**Frame type**  
Steel tube space frame with welded aluminium floor panels, AISI 4130 - Normalized, as drawn and stress relieved

**Engine**  
Honda CBR600RR 2007

**Bore/stroke/cylinders/cc**  
67.0 x 42.5 mm/4 cylinder/599 cc

**Fuel**  
100 octane gasoline

**Fuel system**  
Honda CBR600RR fuel injection system (modified)

**Max power/max torque**  
71 kW/11,200rpm/62.95 N.m/8,800rpm

**Transmission/differential/final drive**  
Chain #530/Quaife ATB chain drive (Honda civic)/4 (52/13)