Dyson School of Design Engineering
Imperial College London

Visit from 2016 Lycée la Martinière Diderot

::Dyson School of Design Engineering::
DESIGN CHALLENGE

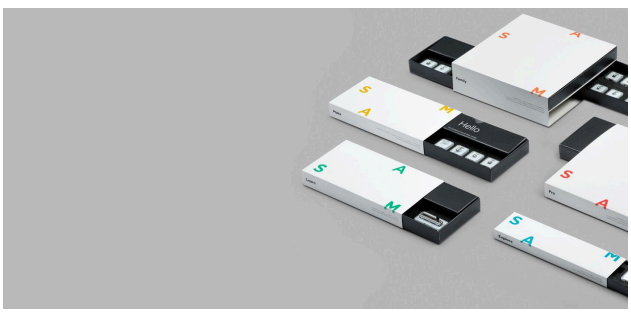
DE-RACER

AGENDA

Location: Dyson School of Design Engineering, Imperial College London
Time: 10:00 –12:00
Duration: 2 hours
Total student group: 30 (16-17yrs) = 6 groups (5 in each)
Keywords: design process, idea generation, fast prototyping, wireless electronics.

Schedule:

Time	Activity
10:00	Arrive
10:00-10:15	Welcome and introduction to Design Engineering
10:15-10:25	Morphological Analysis and SAM Labs introduction
10:25-10:40	Idea generation in groups
10:40-11:10	Build prototype in each group
11:10-11:40	Presentation of design and timed run
11:40-11:50	Close



DE-RACER
Build a car

SUMMARY

Your challenge is to create a remote controlled car to complete a course in the fastest time possible. The aim of this session is to give you experience in designing an original solution to a realistic design-engineering problem through the use of quick prototyping methods.

Each group is required to deliver a design concept to improve on a simple wireless control car and deliver a short pitch detailing the development and final concept before testing.

DELIVERY

You will be provided with the parts to create a remote control car from cardboard discs and a small meccano parts bin. The control system will be provided by SAM Labs wireless electronics. You will not be given any instructions on the construction of the car, but a demonstration will be provided to show the limitations of the current design. It is up to you to build the optimum design using simple prototyping material (cardboard, paper, sticky tape) based on the original design.

MATERIALS

You will have access to the following materials

- Cardboard discs
- Sticky tape and blue tack
- Paper, pens etc.
- A small Meccano parts ‘bin’

SOFTWARE

You will be using SAM Labs. SAM Labs create wireless electronics kits that allow anyone to build their own smart inventions. Whether you’re a beginner programming for the first time, or a pro looking for advanced features, SAM Labs offers the fastest way to create smart systems. By seamlessly integrating hardware, software and apps through the Internet of Things (IoT), SAM gives anyone the powers of engineering. You can find out more information on SAM Labs website: https://www.samlabs.com/.