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# Engineering

A Senior Cycle Option Subject

which follows on from Metalwork in Junior Cycle.

Engineering may be started as a new subject in fifth Year with the right **APTITUDE** and **ATTITUDE**.

# Topics

- Structure of Materials
  - Properties of Materials
  - Iron and Steel
  - Non-Ferrous Metals
  - Alloys
  - Plastics
  - Metrology
  - Testing of Materials
  - Manufacturing
  - Design
- Heat Treatment
  - The Lathe
  - The Milling Machine
  - Precision Grinding
  - Theory of Metal Cutting
  - Welding
  - Adhesive Bonding
  - Electronics
  - Pneumatics
  - CNC
  - Special Topic

# Two Year Programme

## 5<sup>th</sup> Year

- **Sept – Dec:** All practical to acquire necessary skills.
- **Jan – Easter:** Short pieces of work based on course.
- **Easter – June:** Group Project
- **Summer Test:**
  - (i) Group Project - 30%,
  - (ii) Practical test - 30%
  - (iii) Written test - 40%

## 6<sup>th</sup> Year

**Sept – Nov:** All Theory

This is the best time to get a clear run at the course.

**Nov – Mar** - Project work – 25%  
(Different each year)

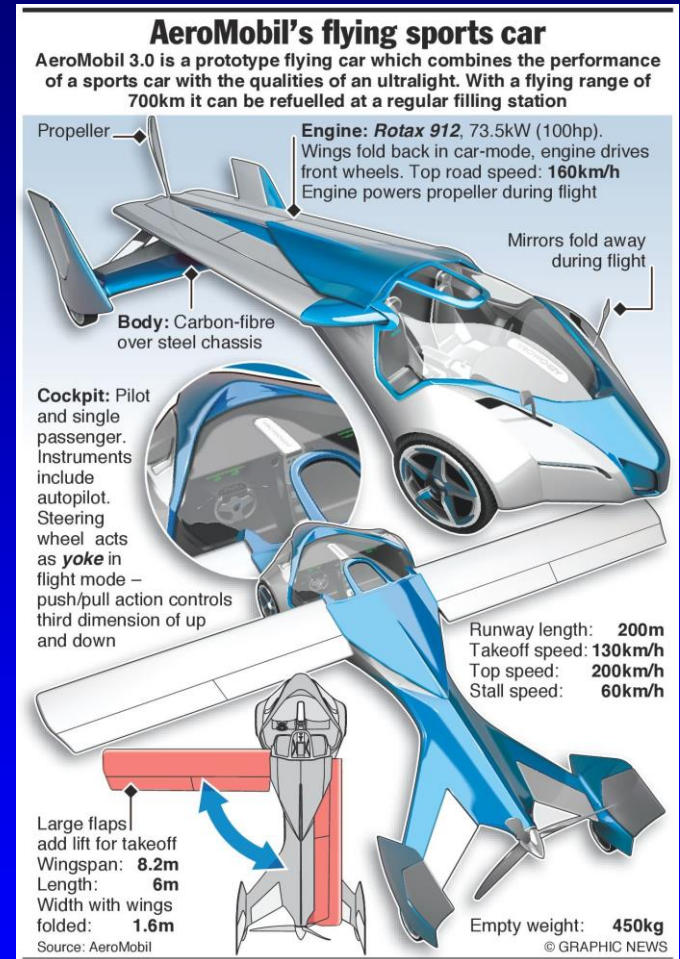
**Feb** – (Mock Exams)

**May** – Practical Test (6hr) – 25%

**June** – Written Test (3hr) – 50%

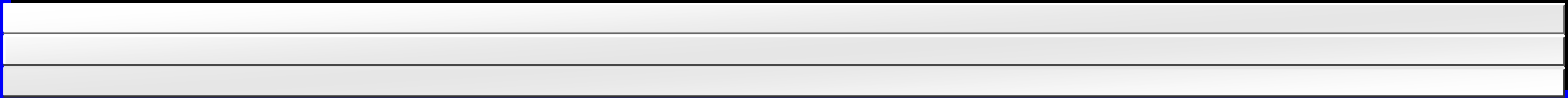
# LCH Project 2019

- Design and make a model of the Aerobobil
- The model must have:
  1. Forward propulsion
  2. Retractable wings
  3. A unique feature



# LCO Project 2014

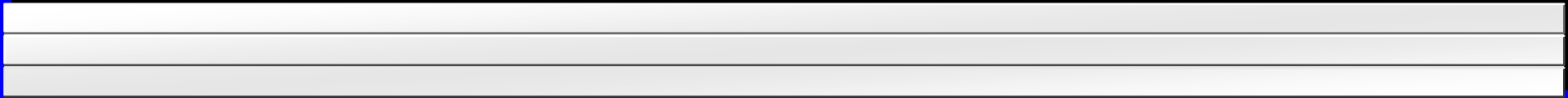
- Make a Model Jeep.
- The model must have:
  1. An electrical drive system
  2. A decorative feature to enhance its appearance



# Assessment

Higher Level		Ordinary Level	
Project	25%	Project	30%
Practical	25%	Practical	30%
Theory	50%	Theory	40%

Note: The Practical Test is common to both levels.



# Textbook

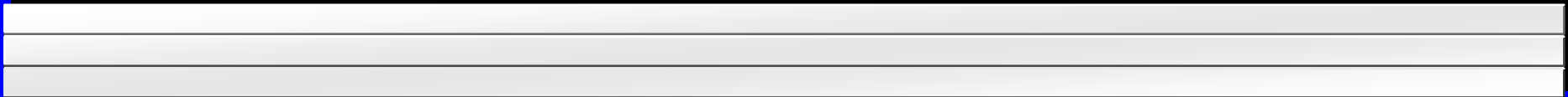
New Engineering Technology

written by

Lawrence Smyth and Liam Hennessy

published by

The Educational Company



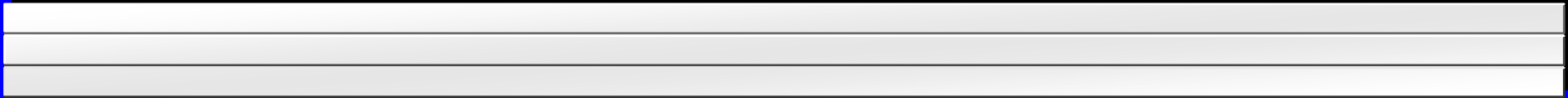
# Reasons to do Engineering

Good reasons:

- ❑ Did Metalwork or MT Wood and liked it.
- ❑ Have good Technological abilities.
- ❑ Like how the assessment is arranged.
- ❑ Would like to study Engineering in College???
- ❑ Fancy a career in some area of Engineering.

Not so good reasons:

- ❑ *Like the sound of the word Engineering.*
- ❑ *It's all about engines, vroom, vroom!*
- ❑ *Friends are doing it and I don't want to be left out.*

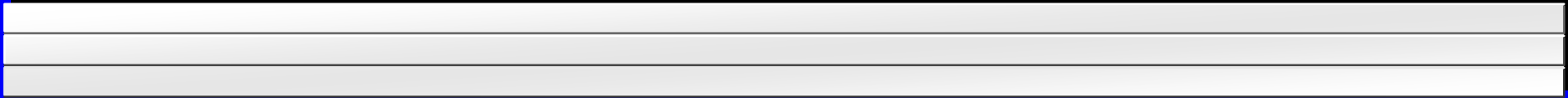




# Need more info?

Come to G14 and have a look around.	Speak to JON or JM
Chat to 5 <sup>th</sup> or 6 <sup>th</sup> yr. Engineering students.	Have a look at the Textbook & Website.

[www.newparkmetalwork.com](http://www.newparkmetalwork.com)



**ANY QUESTIONS?**

Thanks for your attention!

