

Light Aircraft - Wind Tunnel Aerodynamics



- Design a wind tunnel test setup to measure aerofoil performance.
- Calculate appropriate testing scaling factors.
- Interpret wind tunnel test results to evaluate coefficients.
- Compare measured and theoretical aerodynamic aerofoil performance.
- Assess the effect of control surfaces and surface gaps on aerodynamic performance.
- Assess and explain the cause and effect of wing-tip vortices, boundary layer flow, flow detachment (stall), and interference effects.

This one day course has been designed in partnership with the LAA and Coventry University. The aim of this course is to give an introduction to the theory and practice of scale model testing and an appreciation of aerodynamics effects. In particular, the course aims to provide a practical insight into the changes in aerodynamic behaviour as the angle of attack is varied.

Who should attend?

Anyone with an interest in light aircraft design, build and flight. This course does not require previous qualifications, although prior knowledge of light aircraft is recommended.

Course content

This course will include:

- An introduction to lift generation (and loss), drag generation, pressure gradient & boundary layer.
- Demonstration of stall effects, wing-tip vortices, interference effects. hinged & slotted flaps.



- An exploration of aerodynamic forces, including aerofoil geometry, coefficients, the centre of pressure & aerodynamic centre, lift curves, the decomposition of forces. and how to measure velocity.
- Measurement of forces on standard aerofoil section.
- Demonstration of results using the measured results to calculate lift coefficients and a comparison with theoretical values.

Location

This course will be held in Coventry University's new £55m Engineering & Computing building. Based in Coventry City Centre, there is ample parking and easy access from the train station.

Delivery

The course will be delivered by academic experts with industry experience from Coventry University.

Please check www.lightaircraftassociation.co.uk to book on the next scheduled course.

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