

## **Engineering Tripos Part IIA Project, GC2: Light Aircraft Design, 2024-25**

### **Leader**

[Dr J P Jarrett](#) [1]

### **Timing and Structure**

Fridays 11-1pm and Tuesdays 9-11 plus afternoons

### **Prerequisites**

3A1 essential

### **Aims**

The aims of the course are to:

- To explore the conflicting demands placed on the design by different engineering specialisms,
- To develop and use methods of visualising and thus effectively handling the inherent multidisciplinary design trade-offs,
- To demonstrate a viable and safe design concept for the aircraft,
- To maximise the key performance metrics of the final design.

### **Content**

The project involves the aerodynamic, mechanical and structural design of a light aircraft.

Students will work in groups of 3, but will each write individual reports. One member of each group will concentrate respectively on the aerodynamic, mechanical and structural design.

#### **Week 1**

Operational requirements and flight safety.

#### **Week 2**

Conceptual design including the handling of competing aerodynamic, mechanical and structural requirements.

#### **Week 3**

Preliminary design refinement and validation of the concept to determine reasonable performance estimates.

#### **Week 4**

Maximisation of the key performance metrics.

## Coursework

Coursework	Due date	Marks
Interim report 1	Friday 26 May 2023 at 11 am	40 (weighted 60/40 in favour of group work, the remainder for individual work)
Final report	Friday 9 June 2023 at 4 pm	40 (weighted 60/40 in favour of individual work, the remainder for group work)

## Examination Guidelines

Please refer to [Form & conduct of the examinations](#) [2].

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### Links

[1] <mailto:jjp1001@cam.ac.uk>

[2] <https://teaching.eng.cam.ac.uk/content/form-conduct-examinations>