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:jpj1001@cam.ac.uk
[2] https://teaching24-25.eng.cam.ac.uk/content/form-conduct-examinations