Instructor:
Professor Thomas Juliano
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Office hours by appointment

Time & Location:
MW 0800--1045, Stinson-Remick 212

Teaching Assistants:
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Reference Text:
T. C. Corke, Design of Aircraft

Objective:
Design, build, and fly a radio-controlled airplane to complete a particular mission. The airplane’s performance must be predicted before flight and assessed via analysis of flight test data.

Honor Code:
Notre Dame students are expected to abide by Academic Code of Honor Pledge. “As a member of the Notre Dame community, I will not participate in or tolerate academic dishonesty.”
Assignments:
Every week, each team’s leader must submit via e-mail a brief progress report (i.e., one paragraph or a bulleted list).
There are four major milestones, each with a deliverable assignment:

Preliminary Design Review: Week 4
Each team shall submit a written report describing their proposed aircraft design. State the design drivers, explain the design choices made, describe the aircraft’s vital statistics, predict its performance, etc. Each team shall make a 15-minute oral presentation to the class based on the contents of the written report.

Critical Design Review: Week 8
Each team shall print a full set of drawings for their design. These drawings should reflect all details of the design. Part, assembly, and manufacturing drawings are suggested. Furthermore, provide a full parts list of all the components and supplies that require purchase. These deliverables will be discussed with the professor, TA’s, and RC pilots. A revised parts list (if necessary) is due to the TA’s two days later, the Friday morning before Spring Break.

Preflight Inspection: Week 13
The finished airplane will be given a thorough preflight inspection. The as-built weight and c.g. will be determined. Radio receivers will be installed and bound to their controller. A performance metrics worksheet will be issued; the predicted performance of the airplane will be due at this time. Passing the ground check-out is required before flight test.

Final Report: Week 17 (Finals Week)
The final report is a complete description of the aircraft’s design and performance. The preliminary design should be updated to reflect the as-built design; in particular, explain the motivation for any design changes. Analyze the flight-test data to determine the performance metrics. Compare the predicted to measured performance and explain noteworthy discrepancies.