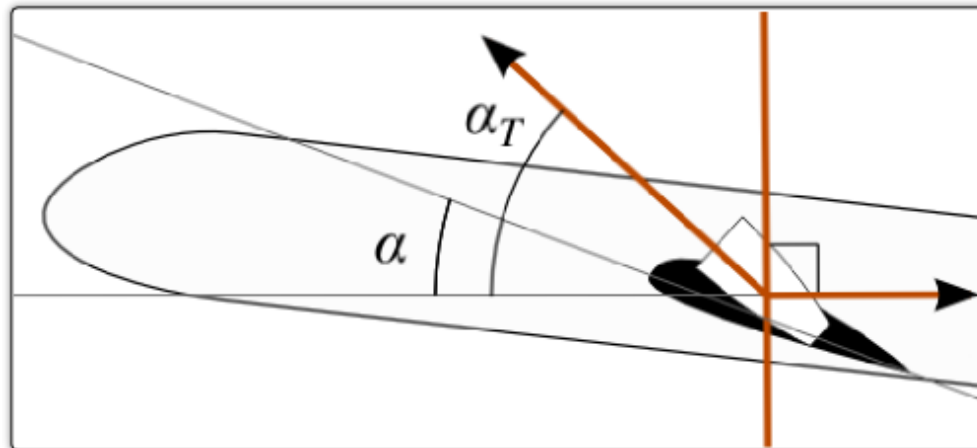


Aspects of Aircraft Design and Control

Olivier Cleynen – February 2014

Aspects of Aircraft Design and Control Introduction



Aspects of Aircraft Design and Control

What is this course about?

- A series of eight projects on aeronautical engineering problems
- Twelve four-hour sessions:
 - ~1-2hrs reviewing important notions
 - ~2-3hrs in-class group work on the project
- Most projects will last one week; some will be spread over two sessions

Content

1. Lift and drag
2. The flight domain
3. Runway performance
4. Wing loads
5. Cruise performance
6. Propulsion
7. Trim
8. Stability



Objectives for the course :

Explore important aspects of aircraft design
through
the analysis and solving
of a few narrow, selected problems

“learn by doing”

“learn by yourself”

Other objectives

- Acquire experience using problem-solving, team-work, navigation-in-the-dark techniques
- Work and communicate in English

Room for participation

- Your continuous feedback and suggestions are most welcome (and sought after!)
- Are there things or ways you wish to study?
 - Specific topics?
 - Specific applications (aircraft, incidents, etc)?
 - Specific ways to study/work?
- Teach the class yourself

Limitations

- The purpose of the course is to work on the projects
→ the lectures help with the projects
... not the opposite
- This is neither a *thorough* nor a *solid* course
 - Do not build an airplane based on this!
 - This course is not a substitute for formal aerodynamics and flight mechanics courses

Work

- Team work: groups of 2 or 3 (or 1)
- One new project every week
- Two groups present orally,
the others hand in a report

Final mark /20

- **18 points**

The average of your 8 reports and presentations
(16 for work, 2 for quality of English)

- **2 points**

Asking questions after oral presentations

(binary – two questions get you two points)

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