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## Computer Based Learning in Aircraft Design - A Case Study with HTML and JavaScript

*Diplomarbeit* in compliance with § 21 of "Ordnung der staatlichen Zwischen- und Diplomprüfung in den Studiengängen Fahrzeugbau und Flugzeugbau an der Fachhochschule Hamburg"

### Background

Computer Based Learning (CBL) Modules can be offered on the Internet, local networks or CD-ROM. The advantage: students can learn in a multimedia environment, independently of university resources. Various approaches and programming techniques exist for the module design. One possibility is to apply HTML and JavaScript programming.

### Task

The thesis will research the possibilities of programming a CBL module with HTML and JavaScript. The work is based on a module featuring the first steps in preliminary sizing in aircraft design based on an approach presented by LOFTIN in NASA Reference Publication 1060. The module includes the calculation of aircraft design parameters from landing, take-off, second segment climb and missed approach climb requirements. Subtasks are:

- Discussion of possibilities in multimedia course design with HTML / JavaScript
- Summary of key JavaScript features useful in aircraft design education based on available literature
- CBL module programming (results to be added to the report on CD-ROM)
- Presentation of selected features of the module on preliminary sizing in aircraft design
- Discussion of pros and cons of multimedia course design with HTML / JavaScript.

The results have to be documented in a report. The report has to be written in a form up to internationally excepted scientific standards. The application of the German DIN standards is one excepted method to achieve the required scientific format.