A flight dynamics course based on MATLAB computer assignments

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Abstract

In this paper the experience of the author in running a flight dynamics course with MATLAB computer assignments as a large part of the course and the sole means of assessment is discussed. © 2000 Elsevier Science Ltd. All rights reserved.

1. Background

Due to the introduction of aeronautical engineering as one of the specializations available for students taking the mechanical engineering programme at Linköping University some years ago, the author was faced with the task of developing and delivering a flight dynamics course to be given in the fourth year of this programme, mandatory for students taking the aeronautical engineering specialization. The course was in due course given for the first time in 1996 and has subsequently been given each year since. The course is also, with minor adaptions, given for technical physics students.

In the first year, the course was given in what the author regards as a very traditional form, both with regard to the form of delivery and the course content. Thus, the material was covered in lectures and lessons totalling 60 h, with one 6 h computer assignment, which was in fact what is described as computer assignment II below. The grade given on the course was based entirely on a 4 h written exam at the end of the course, with the computer assignment only graded pass no pass.

The contents of the course for the first year was heavily dependent on the format of delivery, i.e. adapted to the lecture format, with some time spent on introductory material such as static stability, some time spent on rehearsing and extending rigid body dynamics from earlier courses.

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