wb1310
Multibody Dynamics A

Fall Term 2014, Mon 13:45-15:30, Mechanical Engineering, room IO-PC hall 3 (SHIFT), 3 ECTS

Instructor:
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Teaching Assistant:
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room IO-PC hall 3 (SHIFT), Office hours: Mon 13–17 h. (in the comp lab)

Computer Lab:
IO-PC hall 3 (SHIFT), Lab hours: Mon 13–17.

Introduction

Multibody Dynamics A is an introductory course in applied dynamics of mechanical systems. The emphasis is on the usage of multibody dynamics software. We want you to learn enough about dynamics in 3D that you will be able to use a standard multibody dynamics software package correctly, appreciate the limitations, and say some sensible things about the model at hand.

By the end of the course you be able to make a complex model of realistic 3D mechanical system and draw some conclusions from the dynamical analysis.

Computer Laboratory

There is a computer laboratory associated with this course where you will use the multibody dynamics software package ADAMS to complete a number of assignments. Doing the assignments is about 80% of the course work. In doing the assignments I expect you to work in pairs. This speedup the work and solves most of the little problems.

The computer lab will take place weekly in a PC-room. During the Lab hours a Teaching Assistant will be present who can assist you in doing your work. You are free to finish your work outside these hours.

Before starting with the assignments you first read "Introduction to ADAMS" by Martijn Wisse, available at the web. Next, you do the example exercise of the manual. After successfully completing the exercise you can start with the lab assignments. Always make a sketch of your model. *All* sketches must be included in your lab report. Please do not spend any extra time on making a beautiful report. Make your lab report as you go along during the assignments, like a sort of workbook. Hand-written is ok by me, as long as your hand is legible. Make sure to put *both* your names and student numbers, course name and code, and current date on the title page.

In doing the assignments I strongly encourage you to work together. In the mean time don't violate academic integrity rules: be clear about which parts of your work you did not do on your own. Please read the section below on Academic Integrity carefully. When in doubt, ask!

Course material

Hand-outs and lecture notes can be found at my website: `http://bicycle.tudelft.nl/schwab/`, look for the course wb1310. A short manual on the usage of ADAMS entitled "Introduction to ADAMS" by Martijn Wisse is also available at the web.

Exam

The written exam is individual, open–book, and will be mainly on the lab assignments. During the exam your lab report and course notes will serve as reference. After the exam you are to hand in the written exam together with your lab report (one for every student!). The course grade is 50% on the lab report and 50% on the written exam.

Academic Integrity

For a university community of scholars, academic integrity is the heart of intellectual life - both in learning and in research. Students should read carefully the Code of Academic Integrity and not assume they understand what integrity and cheating are and are not. Academic integrity most certainly implies more at the university than it did in high school. The standards of integrity are those that prevail in professional life. Students must acknowledge and cite ideas they adopt from others (not just direct quotations), and understand the general standards and policies of academic integrity, as well as specific expectations in individual courses.

More on academic integrity see: `http://cuinfo.cornell.edu/Academic/AIC.html`. When in doubt, ask!

Web Site

Visit my website `http://bicycle.tudelft.nl/schwab/` and look for the wb1310 course for up-to-date info, lab assignments and handouts.

Literature

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