

– H04U1C –
Optimization of Mechatronic Systems
Guidelines for the assignments

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Recap – evaluation of the course

- Written exam
 - 2/3 of the total score
 - guidelines will be communicated during the lectures of P. Patrinos
- Assignments
 - 1/3 of the total score
 - one general optimization assignment and one optimal control assignment
 - guidelines in this presentation
 - W. Decré, supported by B. Vandewal, L. Vanroye, R. Abbasi, L. Callens, D. Kießling, E. Sandra

Assignments

- In teams of two students, you complete two assignments
- Each team registers on Toledo to receive their (individual) assignments
- Assignment 1
 - design, analysis or identification of a mechatronic system or other optimization problem
 - tutorial session on Friday, November 29
- Assignment 2
 - optimal control of a mechatronic system
 - tutorial session on Thursday, December 5
- Typical parts of the assignments
 - build a mathematical model
 - define an optimization problem and a solution strategy
 - solve the problem and critically analyze the results

Assignments

- You must submit the source code + a written report (pdf-file) for each assignment
 - due date: Friday, January 3, submission via Toledo
 - reports: ≤ 8 pages per assignment
- Oral defense during the examination period
 - approximately 20 minutes per team
 - no slides/presentation, we will discuss your work using your reports and source code
- Evaluation criteria
 - quality of the results obtained
 - insight and critical evaluation of the results obtained, both from the numerical optimization perspective and from the engineering application perspective
 - quality of the report and code
- Grading: each assignment counts for 50%

Assignments

- Hints and points of attention
 - all results (including graphs) in your report should be reproducible by the TAs using your source code
 - choose logical variable names in your code
 - add labels and legends to your plots
 - you can use code snippets in your report to avoid time-consuming formatting
 - add the appropriate units to the results in your report

