

Lecture 14-3

Conclusions

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¹Dependable Control and Decision Group
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Exams and grades

Final grade given by graded group assignments (10%) and a final written exam (90%)

Friday, January 31st, 2025,

CE14

- Written exam 2h - ~~Saturday 01-02-2025~~ from 9h15 to 11h15, room ~~001~~
 - ▶ 5 or 6 sections, **one** made of questions with multiple choice (select all statements that are true)
 - ▶ return only the booklet (space for answers provided)
- Closed book, closed notes, **no computers**. Bring with you a pen, an eraser, an ID and a non-programmable calculator
 - ▶ You are also permitted to bring **one crib sheet**, formatted on A4 paper. The sheet must be **handwritten only** (no tablet-generated content or copies of the slides), and you may use both sides

Exams and grades

- Each problem will give a maximal number of points, clearly indicated. The total is 90 points. Example (NOT the real numbers):

Problem	1	2	3	4	5	Total
Value	20	20	15	15	10	90
Grade						

- Final grade (graded group assignments + final exam):

Points	96-100	91-95	...	56-60	51-55	...	6-10	1-5	0
Grade	6.00	5.75	...	4.00	3.75	...	1.50	1.25	1.00

Covered topics

Part 1: Analysis of multivariable systems

- Introduction to linear discrete-time systems in the state-space
- Stability and modal analysis
- Reachability and observability
- Discretization of continuous-time systems

Part 2: Control of multivariable systems

- Eigenvalue assignment
- Luenberger observers
- Offset-free tracking
- Optimal control: the Linear Quadratic Regulator (LQR)
- Optimal state estimation: the Kalman filter (KF)
- Linear Quadratic Gaussian Control (LQG)
- Distributed LQR

Before ending ...

Course slides

Updated versions of all slides are available on Moodle

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Thanks for the feedback you have already provided!

... and do not hesitate to send an email if you have further comments or ideas about how to improve the course.

Thank you !