

CALIFORNIA INSTITUTE OF TECHNOLOGY
Control and Dynamical Systems

CDS 270-2 - Networked Control Systems
Spring 2006

Instructor

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Office hours: Fri, 4-5p

Co-Instructors

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Grading

The course grade will be based on an individual or team-based course project. Project proposals will be due by 5 pm on the end of the midterm examination period (2 May) and final project reports will be due by 5 pm on the last day of the final examination period (2 June). The final report will be graded based on the following criteria:

- Technical correctness (modeling, analysis, synthesis)
- Quality of presentation (clarity, organization, motivation, conclusions, references)
- Completeness (simulation, experiment, data analysis)
- Level of contribution (for team based projects)

Each project will also make a short (15-20 minute) presentation on their results to the class.

Collaboration policy

Collaboration on the course project is encouraged. For team-based projects, each student should turn in an addendum to the project report indicating what role they played in the project, including modeling, analysis, implementation and writing.

Class homepage

Information on the class is available on the CDS 270-2 homepage

<http://www.cds.caltech.edu/~murray/wiki/index.php/cds270-2>

Course handouts and reading will be available via the class homepage.

Course outline

Week	Topic
1	Course overview + Introduction to Networked Control Systems
2	Networked embedded systems programming
3	Real-time trajectory generation and receding horizon control
4	State estimation
5	Packet-based estimation and control
6	Packet-based estimation and control
7	Distributed estimation and control
8	Cooperative control of multi-agent systems
9	Project presentations

A more detailed course outline is available on the course web page.