

Math 530: Modeling case studies Spring 2011

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Weir 223

Office Hours:

MW 10 - 11 F 2-3
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Catalog description:

"Open-ended modeling projects from actual applications."

Textbook: *A Survey of Industrial Mathematics* by C. R. MacCluer, Dover

COURSE POLICY

Your course grade will be determined on the basis of combined scores from Homework and 3-4 group Projects. Group projects will typically involve a class presentation and a written summary of the project. In order to make up any assignment, a valid excuse should be documented. The instructor decides if an excuse is a valid one.

Attendance is expected. You are encouraged to seek help from the instructor.

Homework: All homework is due by 5pm of the target date, unless otherwise specified.

Grading is based on the percentage of total points earned (the individual homework and projects are not assigned a letter grade). Point distribution: Homework 33% Projects 67%.

Course outline (tentative):

- Fourier analysis and Principal Components analysis (signal processing and other applications)
- agent-based modeling
- stochastic models (state-space models, stochastic DEs etc.)
- heat equation and other PDEs
- topics as suggested by students