

**Useful information and suggestions for studying for the final exam**

- **Exam date, time and place:** Tuesday, June 12, 1–3 PM at Wellman 107.
- **Pre-final office hours:** Monday, June 11, 12–2 PM at MSB 2218. Please come prepared with questions about issues that bother you.
- **Topics to be covered:** The topics include everything we did in class (and the associated material from the lecture notes and homework), **except** the following topics which will not be covered:
  - The use of Lagrange multipliers in the calculus of variations
  - Analysis of the domino wave problem
  - The discussion of measure preserving transformations in ergodic theory
  - Linear Quadratic Performance control
- **Some tips for studying**
  1. The main two activities you should concentrate your efforts on during your studying are: reading the lecture notes (and your class notes if you took notes), and working on the published homework and quiz problems.
  2. Your ability to solve the homework problems is the best indicator of your ability to do well on the exam. That probably means you should spend most of your time working on these problems. However, you should start out by reading the lecture notes, since you need to understand the general course material well to be able to deal with the homework.
  3. Try to solve homework problems yourself before reading the published solutions. The benefit you will get from this approach is enormously bigger than from just reading the solutions. (Think about it this way: can you learn to play the piano by watching someone else play it?)
  4. **Do not** attempt to memorize any of the material or problem solutions. Instead, focus on understanding. In my courses, any strategy based on memorization is doomed to failure, for several reasons. First of all, the exam will ask questions that will require applying the understanding acquired in solving the homework to new situations. Second, even if the exam contains questions that are literally copied from the homework (and it probably will), nobody's memory is perfect, so anyone relying on memory will probably get their answer slightly wrong in a way that to me signals a lack of understanding. In quantitative terms, if your answer contains 90% of the words of a correct answer in roughly the correct order, but indicates only a 10% level of understanding, the points you will get will be much closer to 10% than to 90%.
- See you next Tuesday. Good luck, and have a successful exam period and a great summer!

—Prof. Romik