

# Comments about the final exam

The final will primarily cover the material in Chapters 5 to 7 of the notes, using the material in Chapters 1 to 4 as relevant to those latter chapters. Coverage will include martingales, but less familiarity and insight will be expected than with the earlier topics.

Topics covered in problem sets 1 to 11 are especially fair game and variations and extensions of those topics are similarly fair game. You are also expected to be familiar with the topics in PS 12, although we will not expect you to have the same insights about martingales as with the other topics.

Particular topics that we do not expect you to have studied (including the earlier chapters) are as follows:

- 4.4 Perron-Frobenius theory
- 4.5 Markov chains with rewards
- 4.5 Markov decision theory and dynamic programming
- 5.6 Round-robin and processor sharing
- 5.7 Semi-Markov processes
- 5.8 Example — The M/G/1 queue
- 6.4 Uniformization
- 6.7 Jackson networks
- 7.6.2 Markov modulated random walks
- 7.6.3 Generating functions for Markov random walks

You may bring three 8 1/2 x 11 sheets of notes, both sides, to the final.

We have enjoyed working with you throughout the semester. We hope the final will be mostly within your abilities, with a few challenging parts added.