Stats 620 (Winter 2017)

Applied Probability and Stochastic Modeling

Tue/Thu 11:30–1:00; 1512 CCL

Instructor: Edward Ionides
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Office hours: Mon 3:00–4:00; Thu 3:00–4:00.

Textbook: S. Ross "Stochastic Processes" (2nd edition, or International edition)

Supplementary texts (not required): "Introduction to Probability Models" (S. Ross, 9th edition); "Essentials of Stochastic Processes" (R. Durrett); "An Introduction to Stochastic Modeling" (M. Pinsky).

Homework assignments: (25%) posted each week on the web site. Discussion of homework problems is encouraged, but solutions must be written up individually. Direct copying from other students or from solutions (e.g. online resources) is not acceptable.

Tests: (closed book, a single sided page of notes is allowed)
Midterm (in class): (25%) Tuesday, March 7.
Final (1512 CCL): (50%) Monday, April 24, 1:30–3:30

GSI: Hossein Keshavarz
Office hours: to be arranged
Email: hksh@umich.edu

Topics:

1. Probability reviewed
2. Poisson processes
3. Renewal processes
4. Markov chains in discrete time
5. Markov chains in continuous time
6. Martingales
7. Random walks
8. Brownian motion
9. Diffusion processes