Graduate probability
MATH 275B, Winter 2018
Instructor: M. Biskup
Time: MWF 10-11
Place: MS 5147

COURSE CONTENT:
This is the 2nd quarter of the Graduate Probability sequence. The 1st quarter dealt with the basic setup of probability, including abstract measure and integration theory, and then proceeded through independence to the basic limit laws (Weak and Strong Law of Large Numbers, Central Limit Theorem). We covered convergence in distribution (a.k.a. weak convergence of measures) and various modes of convergence of random variables.

The 2nd quarter of the sequence will naturally build on this material by proceeding, roughly, through the following subject areas:

(1) Multivariate normal law, Poisson convergence, Poisson processes
(2) Stable laws, infinite divisibility
(3) Conditional expectation and probability
(4) Martingales
(5) Random walks and discrete-time Markov chains
(6) Ergodic Theory

Except for topics (1-2) above, the main theme will be various (suitably controlled) aspects of dependent random variables.

The prerequisites include a good command of basic measure and integration theory, understanding the formal notations of probability, and insight into independent random variables, convergence in distribution, characteristic functions. It will be good to know also the laws of large numbers and the central limit theorem, although these subjects will be revisited in more general context during this (and next) quarter.

For more info on this course, please contact
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or check the web page
http://www.math.ucla.edu/~biskup/275b.1.18w/index.html