

Course outline for 681, Advanced Probability

I would like to include topics that are often no longer taught in advanced probability but remain useful for a broad understanding of probability and statistics. These will center around Fourier transforms with possible application to studying tomography and medical imaging, depending on the interest of the participants.

Comments on this plan are most welcome.

Topics will include:

L_1 and L_2 Fourier transforms

Characteristic functions

Laplace transforms and Bernstein's theorem

Infinitely divisible distributions and the generalized central limit theorem

We will use Billingsley's book, Probability and Measure, as a background source but not stick closely to it. Notes will be posted on my web page: stat.rutgers.edu/~shepp

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