Brief Description of Material for Final Exam

Be able to compute probabilities, as well as conditional probabilities of events.

Be familiar with the basic p.d.f.'s, such as Binomial (Bernoulli), Geometric, Poisson, Hypergeometric, Normal, Negative Exponential, Chi-square, Uniform, and know how to compute probabilities by using these p.d.f.'s.

Be familiar with independence of r.v.'s, and know how to check independence (or lack thereof). Also, be versed with the basic consequences of independence of r.v.'s.

Given a r.v. and its p.d.f., know how to calculate probabilities, expectation, variance, and s.d. Also, know basic properties of expectation and variance.

Know how to use the Tchebichev inequality in determining probability bounds and sample size.

For two r.v.'s jointly distributed according to a given p.d.f., know how to find the marginal and the conditional p.d.f.'s, how to compute the covariance, the correlation coefficient, and how to interpret the latter.

Be able to determine the d.f. and/or the p.d.f. of a transformed r.v.

Be able to work with the smallest and the largest order statistics $Y_1$ and $Y_n$.

Be familiar with the formulation and significance of the WLLN.

Be familiar with the formulation and significance of the CLT. Also, know how to use it in computing approximate probabilities, and in determining sample size.

P.S.

The Final Exam takes place in the same framework as the two Midterms. You may bring along with you up to 2 pages (2 one-sided sheets, or just 2 pages) of notes.