

MATH 542C
PROBABILITY
Spring 2005, TTH 5:30-6:45

- Topic: Theory and Applications of Probability
- Text: Jacod, Jean and Protter, Philip, *Probability Essentials*,
Second Edition, Springer, 2003
- Prerequisite: M340 and M350. Not open to students who took 542A
(Probability), Spring '03
- Instructor: Stephen Breen (FOB 422, TTH 4-5:30,
stephen.breen@csun.edu)

Description: The class will cover axioms of probability, sigma algebras, random variables, integration with respect to a probability measure (including Lebesgue measure), independence and its consequences, different notions of convergence of random variables, Law of Large Numbers, Central Limit Theorem, and if there is enough time, martingales. A probability class would be of interest to both Option I and Option III students.

If there is sufficient student interest, I will teach 542D in fall 2005 as a class in mathematical finance, with 542C as a prerequisite. The text will probably be *Stochastic Calculus and Financial Applications*, by J. Michael Steele. The class would cover random walk, both discrete and continuous time martingales, Brownian motion and its properties, stochastic integration, stochastic differential equations, and applications to finance including option pricing and arbitrage. No finance background will be assumed.