Instructor: John Harlim  
Office: SAS 3260, x32374  
Email: jharlim@ncsu.edu  
Office hours: Friday 1-3 PM

**Time and Place:** TuTh 4.30-5.45, PS 215 (Park Shops)

**Prerequisites:** MA 421 and MA 425 or MA 511. For Mathematics majors, it is highly recommended to take the Analysis sequence (MA 515-715) simultaneously.

**Text:** No text is required, I will prepare materials partially from [1] to review relevant elementary real analysis (Ch 3-9, excluding all the financial math discussion) and selected topics from [2] (Ch 11-13, 17-21).

**Topics:** set theory and measurable functions, probability spaces including random variables, probability functions, independence, expected values and conditional expectations, probability distributions, characteristic functions, convergence of random variables, law of large numbers, and central limit theorem. If time permitted, we will discuss Martingales.

**Grades:** Homeworks (25%) and three in-class exams (25% each). Your total will be translated into a grade on the usual 90% for A, 80% for B, etc.

**Homeworks:** I plan to assign four homework sets; late submissions will not be accepted under any circumstances. I will post the homework sets and their due date at [http://www4.ncsu.edu/~jharlim/ma546.htm](http://www4.ncsu.edu/~jharlim/ma546.htm)

**Exam Times:** The three in-class exams are on Sept 27th, Oct 30th, and Nov 29th.

**Exams:** All exams are done individually. It is my understanding that your signature on a test means that you neither have nor received unauthorized aid. You are responsible for understanding and following the university policy on academic integrity: [http://www.ncsu.edu/provost/academic_policies/integrity/reg.htm](http://www.ncsu.edu/provost/academic_policies/integrity/reg.htm)

There is an exam during the final week of the course, this exam is part of your final. I will only provide a maximum of one makeup exam for each student with a certified medical excuse or prior to my approval. The makeup test will be fair but comprehensive and challenging. Tests missed with certified medical excuses or prior to instructor approval will be dealt with individually. *Note: If you show up to take the test, you must take the grade. You cannot decide midway through to walk out and take the makeup exam.*

**Students with Disabilities:** Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must either register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. [http://www.ncsu.edu/provost/offices/affirm_action/dss/](http://www.ncsu.edu/provost/offices/affirm_action/dss/)

**References**