

COURSE DESCRIPTION
STOCHASTIC PROCESSES (GRADUATE)
MA 694/794
FALL 2012

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Professor P. Jung
Office: CH 493B
Phone#: (205) 934-2154
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Office Hours: Tuesday 2 PM – 4 PM or by appointment (I will be gone 8/28 and 9/25, please schedule appointments if you want to meet those weeks)

Class Meeting times: T,Th 11 AM – 12:15 PM (Make-up classes on Wednesdays 10:30 AM – 11:45 AM, 9/5, 9/26)

Class Meeting location: CH 458

Textbook: *Probability : Theory and Examples* by Rick Durrett

Course policies:

- Please make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.
- If you wish to request a disability accommodation please contact DSS at 934-4205 or at dss@uab.edu.

Topics

- **1** Review of measure spaces, measurable functions
- **2** Random variables, expectation, independence
- **3** Weak law of large numbers, Borel-Cantelli Lemma
- **4** Strong law of large numbers, large deviations
- **5** Weak convergence, characteristic functions (Fourier transforms)
- **6** Levy's inversion formula, central limit theorem
- **7** Stopping times, conditional expectation, Markov property
- **8** Random walks
- **9** Brownian motion
- **10** If time permits, other topics

Assessment procedures: Homework will be assigned to 694 students, unless given permission from the instructor.

Date: last modified on August 14, 2012.