Instructor: Joe Mitchell, Math Tower 1-109, 632-8366, jsbm@ams.sunysb.edu
Office hours (tentative): Tue (10:00-11:15), Wed (2:00-3:30), or by appointment, or drop by whenever (don’t be shy!)

Course Web Site: http://www.ams.sunysb.edu/~jsbm/courses/311/ams311.html

Teaching Assistants/Office hours (in Harriman 010):  Xiaohan Zhang (xiaohan.zhang@stonybrook.edu), MW, 1:30-2:30; Jingwen Che (jingwen.che@stonybrook.edu), Mon 2:30-3:30; Wed 3:00-4:00

Lectures: Tuesday, Thursday, 1:00–2:20, in Javits 110

Pre/Corequisites: Prerequisites: AMS 301 and AMS 310, or permission of the instructor. You are expected to have a firm understanding of basic counting methods (permutations, combinations) and introductory probability (axioms of probability, random variables).

Corequisite: MAT 203, MAT 205, or AMS 261. We will be using a fair amount of calculus, including some calculus of two variables (double integration).

Text: A First Course in Probability (9th Edition), by Sheldon Ross. (Earlier editions should be OK for readings, but some example and problem numbers will not match) Also useful: the Virtual Laboratories in Probability and Statistics by Kyle Siegrist (http://www.math.uah.edu/stat/), with lots of examples.

Homeworks: There will be 9 homework sets, equally weighted, and I will drop the lowest one score before computing your average. Homework will be due at the beginning of class on the due date; tentatively, these dates are 9/12, 9/19, 9/26, 10/17, 10/24, 10/31, 11/14, 11/21, 12/5.

Homework Policy: Homework due dates are strictly enforced: with instructor approval for an extenuating circumstance, you can submit at most one late homework, provided it is submitted before solutions are posted. You may discuss homework problems with other students currently taking the course, with the TA, and with the instructor. If you do collaborate with another student(s), you must indicate this on the cover of your hw, giving the name(s) of your collaborators. The work that you turn in should always be your own write-up, and you should show that you personally understand everything that you write. You are not to view other student writeups or use them (or internet resources) while writing your own solution. Please make certain that your writing is neat and clear, and that you have expressed your reasoning, not just the final answer. Please staple!

Exams: There will be three (non-cumulative) exams, equally weighted. Tentative dates for the first two are Oct 3, Nov 7; the third will be during the final exam period (Mon., Dec 16, 5:30-8:00), all students will take Exam 3 during the first 75 minutes; then, optionally, students can take one “Second Chance Exam” during the remaining 75 minutes.

Second-Chance Exam: For either one of the first two exams, you will be given a chance to take a “Second-Chance Exam” during the final exam period. If you take a second-chance exam, the new score for that exam will be $0.8x_{high} + 0.2x_{low}$, where $x_{high}$ is the higher of the two scores (original and second-chance) and $x_{low}$ is the lower of the two scores.

Grades: Your total average score will be 10% homework, plus 30% per exam. I will use your total average score to assign a letter grade; there is no pre-established scale or curve. (If there is a huge disparity among different exam averages, I may, at my discretion, curve the numbers before computing the weighted average above.)

Course Outline: The following topics will be covered, with some variation depending on the availability of time:

- Probability — definitions and basic concepts
- Conditional probability and independence
- Discrete random variables, special distributions
- Continuous random variables, special distributions
- Joint distributions — several random variables; covariance
- Conditional distributions; computing probability/expectation by conditioning
- Bivariate Normal distribution, $t$, $F$- and chi-squared distributions, order statistics
- Transformation of variables
- Markov chains
- Sums of random variables; moment generating functions
- Markov, Chebyshev inequalities; estimation
- Central Limit Theorem
Disability Policy: If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Academic Integrity Policy: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person’s work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

University Policy: Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students’ ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

Electronic Communication Statement: Email and especially email sent via Blackboard (http://blackboard.stonybrook.edu) is one of the ways the faculty officially communicates with you for this course. It is your responsibility to make sure that you read your email in your official University email account. For most students that is Google Apps for Education (http://www.stonybrook.edu/mycloud), but you may verify your official Electronic Post Office (EPO) address at http://it.stonybrook.edu/help/kb/checking-or-changing-your-mail-forwarding-address-in-the-epo. If you choose to forward your official University email to another off-campus account, faculty are not responsible for any undeliverable messages to your alternative personal accounts. You can set up Google Mail forwarding using these DoIT-provided instructions found at http://it.stonybrook.edu/help/kb/setting-up-mail-forwarding-in-google-mail. If you need technical assistance, please contact Client Support at (631) 632-9800 or supportteam@stonybrook.edu.