Statistics 416 Stochastic Modeling
MWF 1:25-2:15 PM
216 Thomas Building

Instructor: Ephraim Hanks
Office: 310 Thomas
email: hanks@psu.edu
Web: http://www.personal.psu.edu/emh30/
Office Hours: Monday 2:30-4:00 PM

Grader: Joshua Goldstein


Course Outline:
We will first review probability models and discuss the utility of conditional statistical modeling to model dependence between random variables (Ch. 1-3). A major goal of this course is to study Markov Chains (Ch. 4), which are collections of time-indexed discrete-space random variables, and have wide applications in Biology, Finance, Insurance, and other fields. We will also spend considerable time studying continuous-time Markov Chains (Ch. 5-6). With the remaining time in the semester, we will introduce Brownian motion (Ch. 10) and consider various applications of Markov Chains.

Grading:
Homework: 25%
Midterm Exam #1 25%
Midterm Exam #2 25%
Comprehensive Final Exam 25%

Course grades will be assigned according to the following cutoffs. If the grades are curved, a higher grade may be assigned, but you will not receive a lower grade than listed here.

A  [93,100]  C+  [77,80]
A- [90,93)  C  [73,77)
B+ [87,90)  C-  [70,73)
B  [83,87)  D  [60,70)
B- [80,83)  F  [0,60)
Homework:
Homework will be assigned most Wednesdays and will be due a week later. All homework must be turned in by **Wednesday night at midnight**, either to me personally, to my office, or by email (hanks@psu.edu). **No late homework will be accepted.** The lowest homework grade of the semester will be dropped.

Exams:
Exam dates will be given at least a week before the exam. No make-up exams will be given. In the case of a University approved conflict, an arrangement will be made with the instructor. The comprehensive final exam date will be set by the registrar’s office sometime in the week of December 16-20.

Academic Integrity:
Academic integrity is the pursuit of scholarly activity free from fraud and deception and is an educational objective of this institution. All University policies regarding academic integrity apply to this course. Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating of information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. All exam answers must be your own, and you must not provide any assistance to other students during exams.

Disability Services:
Penn State welcomes students with disabilities into the University’s educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services Web site at http://equity.psu.edu/ods/. In order to receive consideration for course accommodations, you must contact ODS and provide documentation. If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible.