Course Goals: Brief review of conditional probability and expectation followed by a study of Markov chains, both discrete and continuous time. Queuing theory, terminology, and single queue systems are studied with some introduction to networks of queues. Uses Monte Carlo simulation of random variables throughout the semester to gain insight into the processes under study.

Prereqs.: APPM 3570 (Applied Probability), or equivalent.


E-mail policy: To contact the instructor, please add in your e-mail subject the prefix “APPM 4/5560 - Fall 2017:”, followed by a very short description of your e-mail. Failure to follow these instructions may result in a delayed or no response at all!

Cellphone/Laptop policy: Cellphones and any communication devices should be put on mute or turned off during lecture. Laptop and tablets for note taking are welcome provided their WiFi access is disabled during lecture.

Grade Determination: Each homework will be worth 10 points (x 9 homework), each project 30 points (x 3 labs), and each exam 90 points (x 2 exams). The final exam will be comprehensive and worth 120 points (x 1 final). Each section will be curved individually. To pass the class a student must have a total exam score (midterms plus final) of 165 or more points. After the final exam, if your total exam scores average is 165 points or better, then your homework and project points will be factored in to determine your final grade. Note it is possible to have a total exam score of 165 and still fail the class due to low homework or project grades. Approximate grade lines will be based on the following 10%-curve-letter grade system:

- A- ≥ 90%
- B- ≥ 80%
- C- ≥ 70%
- D ≥ 60%

Exams: There will be two evening midterm exams from 6–7:30 pm on Tuesday, October 03, and Tuesday, November 07. The final exam is scheduled on December 18 from 2–4 pm. If your schedule conflicts with either of these times, let your instructor know immediately.

Blue books: Each student is responsible to bring a blank blue book at the beginning of each exam. Do not write anything on the blue book because it will be randomly assigned right before the exam.

Homework and Projects: Due dates will be posted on the course webpage. You must show all your work as correct solutions without adequate justification may receive no credit. Note that the CU Honor Code also applies to homework and projects; in particular, work submitted for a grade must be of your own doing. Homework and projects are always due at the beginning of lecture. Late submissions will not be accepted. Students registered for APPM 4560 must work in groups of 2 to 3 people for each project. Students registered for APPM 5560 must solve each project on their own. There are no makeup examinations of any kind.
Accommodations for Disabilities: If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your instructor in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website (www.colorado.edu/disabilityservices/students). Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website and discuss your needs with your instructor.

Religious Holidays: Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please contact your instructor during the first two weeks of class to let her/him know of any possible conflicts in order to make the necessary arrangements.

Classroom Behavior: Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student’s legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on classroom behavior and the Student Code of Conduct.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation: The University of Colorado Boulder (CU Boulder) is committed to maintaining a positive learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU’s Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulder’s Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the OIEC website.

Honor Code: All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the academic integrity policy. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at the Honor Code Office website.

See course website for further information about policies and the course schedule.