

Instructor: Manuel Lladser

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Lectures. FLMG 102, MWF: 12–12:50 PM

Office Hours. ECOT 232: M 3–4 PM; W 2–3 PM; F 10–11 AM

Course Goals: Random graphs, also called random networks, have been used to understand the robustness of the Internet, study food webs in predatory interactions, and predict possibly unknown metabolic interactions, among countless other applications. This course will introduce and analyze various key models of random graph theory. It will present these and other topics related to discrete random structures in a coherent, mathematical, and self-contained manner so as to facilitate their use and application to model and analyze more general random networks.

Prerequisites: APPM 3570, or MATH 4510.

Grade Determination: *All work submitted for grade is subject to the CU-Boulder Honor Code.* Your grade will be determined by quizzes (10%), three regular projects (60%), and one term project (30%). Approximate grade lines will be: A- $\geq 90\%$; B- $\geq 80\%$; C- $\geq 70\%$; D $\geq 60\%$.

Homework: Homework will be assigned on regular bases. It will not be collected; however, it may be used as a material for quizzes and projects. Homework will be given to practice on class material, or to explore topics not covered in lecture; in particular, some homework will require a literature search to be accomplished in a reasonable time.

Quizzes: Quizzes will be given at the beginning of class (i.e., Noon) during the **first ten minutes of lecture every Monday**. Each quiz will cover only material discussed in lecture, or assigned as homework the week before. Quizzes are given to motivate you to stay in sync with the class. No extended time will be given for quizzes.

Projects: There will be three take-home projects due at the beginning of lecture (i.e., Noon) on the following dates: **February 9th (Friday)**, **March 7th (Wednesday)**, and **April 6th (Friday)**. No late projects will be accepted. Students registered for APPM 4720 may work on each project with up to one other classmate. In this case, both classmates should be equally responsible for the work submitted. Instead, students registered for APPM 5720 must work on each project on their own.

Term Project: The term project is due on **May 2nd (Wednesday)** at the beginning of lecture (i.e., Noon). Late term projects will not be accepted. The term project will be broader in scope compared to regular projects. It will be assigned by mid-semester. Students registered for APPM 4720 may work on the term project with up to one other classmate. In this case, both classmates should be equally responsible for the work submitted. Instead, students registered for APPM 5720 must work on the term project on their own.

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.

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. CUs Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulders 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.

See course website at:

<https://www.colorado.edu/amath/course-pages/spring-2018/appm4720randomgraphs>

for further information about the course schedule and policies.