

Instructor: Jeremy Martin (you can call me “Jeremy”)
E-mail: jlmartin@ku.edu (the best way to contact me)
Office: 618 Snow Hall, (785) 864-7114
Office hours: Wednesdays, 2:00–4:00pm, or by appointment

Meeting time: Tue/Thu 11:00am–12:15pm, 564 Snow Hall.

KU course ID: 66161

Course description: Math 725 is an introduction to graph theory and related topics in combinatorics. The course material will include directed and undirected graphs, trees, matchings, connectivity and network flows, colorings, and planarity. Depending on time and students’ interests, we may cover additional topics such as the Tutte polynomial, matroids, Ramsey theory, random graphs, eigenvalues of graphs, and rigidity theory.

Website: <http://www.math.ku.edu/~jmartin/math725>. You are responsible for all information posted on the website, including announcements and homework assignments.

E-mail: I will periodically send class information (announcements, homework hints, etc.) to all students’ KU e-mail accounts. You are responsible for checking your e-mail regularly so as to receive this information.

Text: Reinhard Diestel, *Graph Theory* (Springer). Available at low cost in several electronic editions from [the author’s website](#). In addition, I will post lecture notes on additional topics not covered in Diestel.

Prerequisites: Math 290 (Elementary Linear Algebra) and at least one mathematics course numbered 450 or above. You do not need to know anything about graph theory beforehand, but you should be comfortable with basic linear algebra and with reading and writing proofs. Experience with combinatorics (e.g., Math 724) and/or computer programming is helpful, but not required.

Homework: Homework will be due approximately every two weeks, starting January 29. I will post problems on the website at least a week before the due date. I encourage collaboration on the problem sets, but you must write up your own solutions independently and acknowledge all collaborators. All homework must be typeset using LaTeX and submitted electronically by 5:00pm on the due date. The homework will be worth a total of 50% of your grade.

Project: Each student will complete an independent project, which may include one or more of the following: reading a research article, writing and testing a computer program, making and testing a conjecture experimentally, writing an expository paper, giving a brief talk to the class, etc. I will work with students individually to help you choose a suitable topic for your project. The project will be worth 25% of your grade.

Exam: The final exam is scheduled for **Thursday, May 12, 10:30–1:00 PM**. The exam is worth 25% of your grade.

Blatant skill: Please attend the [Combinatorics Seminar](#) (Fridays, 3-4pm, Snow 408). Many of the talks will be accessible to Math 725 students.

Administrative Information

Approximate time commitment: This is 3-credit course, so I would guess that most students will need to spend about 6 (or more) hours per week outside of class to earn a decent grade. The homework problems are intended to be challenging, so leave yourself plenty of time for each problem set.

Makeup work: Your enrollment in this course is a commitment to hand in all work by its announced deadline. If, for some legitimate and unavoidable reason, you are unable to turn in a homework assignment on its due date or to attend the final exam, you must notify me *in advance* to make appropriate arrangements. KU policy states that no student is required to take more than two final exams on a single day; check the [official final exam schedule](#) and notify me if you have more than one other exam scheduled for May 12.

Incompletes: A grade of I is a rare occurrence and is reserved for cases in which a student has completed most of the course work at an acceptable level, but is prevented from completing the course due to *extraordinary* circumstances. If you think an I may be warranted, you must consult Prof. Martin *before* the final exam. A grade of I cannot be made up by taking the course again.

Dropping the course: Through February 8, you may drop a course and have it removed from your record. From February 8 through April 18, you may withdraw from a course (a grade of W will appear on your transcript). After April 18, dropping is not permitted. For complete details, consult the KU Registrar (151 Strong Hall; 785-864-4423; [registrar.ku.edu](#)).

Academic honesty and collaboration: You are required to abide by all KU policies on academic integrity. Cheating, plagiarism or other academic misconduct will result in a failing grade on the assignment in question, notification of the student's dean, and usually further disciplinary sanctions, possibly including a failing grade in the course.

You are encouraged to collaborate with other students on the homework assignments. However, *each student must write up his or her own solutions and acknowledge all collaborators*. Copying someone else's homework, or allowing someone else to copy yours, is considered to be a form of cheating.

For more information, see [KU's official policies on academic misconduct](#).

Students with disabilities: Student Access Services ([access.ku.edu](#), 22 Strong Hall, 864-4064) coordinates accommodations and services for all students who are eligible. If you have a disability for which you wish to request accommodations, please contact SAS as soon as possible. Please also contact me privately in regard to your needs in this course.

Religious holidays: If you plan to observe a religious holiday which conflicts in any way with the course schedule or requirements, contact me at the beginning of the semester to discuss alternative accommodations.

Intellectual property: All course materials prepared by the instructor, together with the content of all lectures and review sessions, are the intellectual property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. Upon reasonable request, the instructor will usually grant permission to record lectures, on the condition that such recording is used only as a study aid by the student making the recording, and is not modified or distributed in any way. Course materials posted online are exclusively for the use of students in Math 725, and must not be redistributed without the instructor's consent.