Mathematics 725 (Graph Theory)
Spring 2006 Syllabus

Meeting times: MWF 12:00 – 12:50 PM, 301 Snow Hall

Instructor: Jeremy Martin (you can call me "Jeremy")
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  Office hours: Mondays, 3:00–5:00 PM, or by appointment

KU course number: 68132

Course website: `http://www.math.ku.edu/~jmartin/math725/`. Check it frequently. The website will contain announcements, homework problems and solutions, and lecture notes, among other things.

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 flow, colorings, and planarity. Depending on time and students' interests, additional topics might include the Tutte polynomial, matroids, Ramsey theory, random graphs, eigenvalues of graphs, and rigidity theory.

Textbook: Douglas B. West, *Introduction to Graph Theory*, 2nd edition (Prentice-Hall, 2001). Available at KU Bookstore (`www.kubookstore.com`; (785) 864-4640). I will also post lecture notes on the website. I plan to cover most of Chapters 1–6.

Prerequisites: You don't need to know anything about graph theory beforehand. However, you should be comfortable with reading and writing proofs, and you should know at least some basic linear algebra. If you've seen some combinatorics or had any experience with computer programming and/or thinking about algorithms, that will be helpful, but none of this is required.

Lectures: I encourage you to participate in class. Don't be afraid to speak up; there is no such thing as a stupid question in mathematics! It's a good idea to get into the habit of reading a section or two ahead in the book, so as to be better prepared for lecture.

Homework: Homework will be collected every week or two. I will post problem sets on the course website at least a week before the due date. Collaboration on the problem sets is encouraged, but you must write up your own solutions independently and acknowledge all collaborators. The homework will be worth a total of 40% of your grade.

Research project: Each student will carry out an individual project, include reading an article in a research journal, writing a brief summary, and giving a brief expository talk to the class. The project will be worth 20% of your grade.

Midterm exam: There will be a midterm exam in class on **Friday, March 10.** The midterm will be worth 15% of your grade.

Final exam: The final exam will be **Friday, May 19**, from **10:30 AM–1:00 PM**, location TBA. The final will be worth 25% of your grade.

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 talk to the instructor *before* the final exam. Note that a grade of I cannot be made up by taking the course again.

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, 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, *intellectual honesty requires that each student write up his or her own solutions and acknowledge all collaborators.* Copying someone else's homework, or letting someone else copy yours, is considered to be a form of cheating.

For more information on academic honesty issues, see `www.ku.edu/∼stlife/academics.shtml`.

Students with disabilities: The KU Office of Disability Resources (22 Strong Hall; 785-864-2620 (V/TTY); `www.ku.edu/∼ssdis/`) coordinates accommodations and services for all students who are eligible. If you have a disability for which you wish to request accommodations, please contact Disability Resources as soon as possible. Please also contact me privately in regard to your needs in this course.

Intellectual property issues: 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.

This syllabus is current as of Monday 1/16/06, 11:00 AM.