MATH 8446: PARTIAL DIFFERENTIAL EQUATIONS II
SPRING 2020

This is the second semester course in partial differential equations. Our main focus will be on nonlinear dispersive equations, which continues to be among the most active areas of current research.

Textbook. We will draw on a number of books for the course. The main reference is *Nonlinear Dispersive Equations* by T. Tao; it can be downloaded (almost in its entirety) from the author's webpage. When needed, we will supplement this with *The Nonlinear Schrödinger Equation* by Sulem and Sulem. For background material, I suggest *Fourier Analysis* by Duoandikoetxea.

Prerequisites. MATH 8445: PDE I. A year of graduate-level analysis (equivalent to 8420 and 8421) is strongly encouraged.

Structure of the course. This is an advanced graduate course, so much of the responsibility for learning the material will rest on you. There will be semi-regular homework assignments. You are free — and encouraged — to collaborate on them, but each students must submit their own work.

In the first two weeks of the semester, you will be given a list of important modern papers touching on some of the topics of the course. You will be asked to (individually) select one of those papers, which you will then present the end of the semester during lecture. As your final exam, you will submit a brief summary of its contents and the main ideas of the argument.

Office hours. I will hold regular office hours on Wednesday and Thursday, 2:00-3:00PM, in MSB 307. If you are not available at this time, we can make a special appointment.

Disabilities. If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office. To request academic accommodations (for example, a note taker), students must also register with Disability Services (http://web.missouri.edu/~accesscm), AO38 Brady Commons, 882-4696 or 882-8054 TTY. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. Another resource, MU's Adaptive Computing Technology Center (http://iatservices.missouri.edu/adaptive), 884-2828, is available to provide

computing assistance to students with disabilities. For more information about the rights of people with disabilities, please see ada.missouri.edu or call 884-7278.

Academic Honesty. Academic honesty is fundamental to the activities and principles of a University. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. When in doubt about plagiarism or collaboration, consult the course instructor. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. If at any time you have questions about this policy, please ask.

Complaints. If you have communication (or other problems) with your instructor, you can report them to Professor Stephen Montgomery-Smith (Director of Graduate Studies) either by phone (882-4540) or by e-mail (`stephen@missouri.edu`).