COURSE SYLLABUS
MATH 6341, SECTION A, PARTIAL DIFFERENTIAL EQUATIONS I
FALL SEMESTER 2026
3 CREDIT HOURS

INSTRUCTOR: ANDRZEJ SWIECH
OFFICE: SKILES 206
EMAIL: swiech@math.gatech.edu

TEXTBOOK: Lawrence C. Evans, *Partial Differential Equations*, 2nd edition, Graduate Studies in Mathematics, AMS, 2010.

COURSE DESCRIPTION: The course introduces the students to the fundamentals of partial differential equations (PDE). The emphasis is placed on the main examples of linear PDE and exact solution techniques. We plan to cover first order equations, the method of characteristics, conservation laws, heat, Laplace, Poisson, and wave equations, and some methods of explicit solutions like separation of variables, Fourier transform, fundamental solutions and Green's functions, power series.

COURSE LEARNING OBJECTIVES: Students should acquire basic theoretical knowledge about PDE. Students should be able to solve problems involving PDE and write rigorously the solutions.

GRADING POLICY: There will be three homework assignments and the final exam. The due dates of the homework assignments will be announced as the course progresses and the assignments will be posted well in advance. Each homework will count for 20% of the final grade and the final exam for 40%. To get an A, respectively B, C, and D in the course, your final score will have to be greater than 85%, respectively 70%, 55%, and 40%.

DESCRIPTION OF GRADED COMPONENTS: The tests and the final exam will be designed to check how well you can solve problems using the theory. The final exam will be cumulative. It will be a take-home exam. The use of AI is not allowed for homework problems and the final exam. I encourage the students to learn together and exchange ideas, including ideas about homework problems. However all the work submitted by you for grading must be your own.

COURSE PREREQUISITES: To be successful in the course the students have knowledge of advanced calculus.

ATTENDANCE AND PARTICIPATION: The lectures will be in-person only. They will not be streamed nor recorded. Attendance is not mandatory.

LATE HOMEWORK: Late homework will not be accepted unless there is a valid reason for it. Please contact me in advance in such cases. There will be no extra credit opportunities.

INCLEMENT WEATHER AND DIGITAL LEARNING DAYS: In case of inclement weather we may switch to online classes. The zoom link will be provided on the Canvas course web site.

ACADEMIC INTEGRITY: Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review https://catalog.gatech.edu/policies/honor-code (Georgia Tech's Honor Code) and the student https://catalog.gatech.edu/rules/18/ (Code of Conduct). Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES: If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (http://disabilityservices.gatech.edu/, 404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

STUDENT-FACULTY EXPECTATIONS AGREEMENT: At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The (http://www.catalog.gatech.edu/rules/22) Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.