

Vanderbilt University

MATH 294 — Partial Differential Equations, Fall 13

Instructor: Marcelo Disconzi (marcelo.disconzi@vanderbilt.edu)

1. LECTURE

Instructor: Marcelo Disconzi. Office: Stevenson Center 1515. Office phone: (615) 322-7147.
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Lecture time and location: MWF, 9:10–10:00am, Stevenson Center 1310.

Course webpage:

<http://www.disconzi.net/Teaching/MAT294-Fall-13/MAT294-Fall-13.html>

Office hours: MWF 10:10–11:10am, or by appointment.

2. COURSE INFORMATION

2.1. Textbook. *Partial Differential Equations: Second Edition*, by Lawrence C. Evans. Students who would like to consult a textbook that covers more basic aspects of Partial Differential Equations can consult *An introduction to partial differential equations*, by Yehuda Pinchover and Jacob Rubinstein.

2.2. Description. Classification of equations: equations of elliptic, parabolic, and hyperbolic type. Separation of variables, solutions of homogeneous and non-homogeneous boundary value problems. Representation of solutions. Laplace's equation and harmonic functions. Maximum principles. The heat and wave equations. Linear elliptic equations. Non-linear wave equation. Energy methods for hyperbolic equations. Possible additional topics include subharmonic functions and systems of equations. Emphasis will be put on both the importance of mathematically sound arguments and on techniques devised to treat common applications. If time allows, more advanced material may be covered.

2.3. Prerequisites. MATH 194, 204, or 205B and 196, 198, or 208.

3. GRADING POLICY AND EXAMS DATES

The course will have two exams which will constitute 60% of the grade. The remaining 40% will be covered by assignments given throughout the semester. You will be allowed to take a make-up test only in very special circumstances. If you miss an exam, contact the instructor as soon as possible.

Occasionally, optional assignments may be given. These will not count a specific number of points towards your total grade, *unless otherwise specified*. The primary goal of such extra assignments is to help the course instructor to decide on borderline cases. For example, suppose your final grade corresponds to a B+, but it is sufficiently close to the cutoff for an A-. In such a case, having done all or most of the extra credit problems may lead the instructor to decide that you deserve a little boost in your grade, giving you an A-.

If this policy is not clear, please talk to your lecturer during his office hours.

Description	Date and Location	Points
Test 1	Wed, Oct 9, in class	30
Final	Wed, Dec 11, 9:00am, location TBA	30
Assignments	to be announced in class	40
TOTAL		100

3.1. Homework problems and schedule. Homework problems from the textbook will be assigned on a weekly basis. Some of these problems may be collected to count as part of the total grade, i.e., counting towards the 40 % of the grade described as “Assignments”. Regardless whether or not a particular set of problems will be collected, students should try to solve all suggested problems to the best of their abilities in order to be prepared for the exams.

An up-to-date schedule will be maintained on the course webpage.

4. COURSE POLICIES

4.1. Calculators. Calculators will not be used in this course.

4.2. Classroom Policy. Students are not allowed to use electronic equipment such as cell phones, music players, or computers during class. Texting during class is not acceptable.

4.3. Honor Code. All work submitted for credit must be the students own and is subject to the provisions of the Vanderbilt Honor Code. Details can be found at the Honor Council web site: <http://studentorgs.vanderbilt.edu/HonorCouncil>.

4.4. Accommodation Procedure. A student who needs course accommodations due to a disability, special arrangements in case the building must be evacuated, or has emergency medical information that needs to be shared with the instructor, should contact the instructor as soon as possible. Equal Opportunity, Affirmative Action, and Disability Services (2-4705 or <http://www.vanderbilt.edu/ead>) at Vanderbilt provides specific accommodations for students with physical or learning disabilities. Upon receiving appropriate documentation from the student, the Opportunity Development Center will make arrangements with the instructor for the accommodations.

4.5. Attendance. The student who misses a class meeting is responsible for any assignments and/or announcements made. Office hours will not be utilized to re-teach material presented in class. The stated attendance policy of the College of Arts and Science applies in this course: Students are expected to attend all scheduled meetings of classes in which they are enrolled; they have an obligation to contribute to the academic performance of all students by full participation in the work of each class. The faculty of the College of Arts and Science recognizes that occasions arise during the academic year that merit the excused absence of a student from a scheduled class or laboratory during which an examination, quiz, or other graded exercise is given. Examples include participation in sponsored university activities (e.g., debate team, varsity sports), observance of officially designated religious holidays, serious personal problems (e.g., serious illness, death of a member of the students family), and matters relating to the students academic training (e.g., graduate or professional school interviews). Conflicts arising from personal travel plans or social obligations do not qualify as excused absences.