

Vanderbilt University
MATH 5120 — Introduction to Partial Differential Equations
Instructor: Marcelo Disconzi (marcelo.disconzi@vanderbilt.edu)

1. GENERAL INFORMATION.

Instructor: Marcelo Disconzi.

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Instructor's office: Stevenson Center 1515.

Instructor's office phone: 615-322-7147.

Lecture time and location: Tuesday and Thursday, 8:10–9:25am, Stevenson Center 1120.

Course webpage:

www.disconzi.net/Teaching/MAT3120-Spring-17/MAT3120-Spring-17.html

Office hours: Thursdays 9:30am–12:30pm, or by appointment.

2. COURSE INFORMATION.

2.1. **Textbook.** No textbook is adopted. Some references students can use are:

- An introduction to partial differential equations, by Yehuda Pinchover and Jacob Rubinstein.
- Partial differential equations: an introduction (2nd edition), by Walter Strauss.
- Partial differential equations (2nd edition), by Lawrence Evans.

2.2. **Description.** The course will cover the basic concepts and tools of Partial Differential Equations (PDEs), such as initial- and boundary-value problems, separation of variables, Fourier series and integrals, representation of solutions, maximum principles, and explicit solutions of problems involving the heat equation, the wave equation, and Laplace's equation. 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.

3. GRADING POLICY AND EXAMS DATES.

The course will have two Midterms and a Final Exam, constituting 20%, 25% and 35% of the grade, respectively. The remaining 20% will be covered by assignments given throughout the semester (10%), and a project on a topic to be determined by the instructor (10%). 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.

Extra credit work may be assigned. Extra credit assignments will not carry 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
Midterm 1	Thu, Feb 9, in class	20
Midterm 2	Tue, Mar 21, in class	25
Final Exam	Thu, May 4, 9am, location TBA	35
Assignments	to be announced	10
Project	to be announced	10
TOTAL		100

Important: there will be no alternate time for the Final Exam.

Other important dates:

Jan 16	Last day to unconditionally add a class
Jan 23	Last day to drop a class with no entry on the record
Mar 6–10	Spring Break
Mar 8	Deficiency reports due
Mar 17	Last day to drop a course
Apr 18	Dead week begins
Apr 24	Last day of classes

3.1. Homework problems and schedule. An up-to-date schedule will be maintained on the course webpage. Homework problems, along with their due date, will be posted on the course webpage. Students are allowed to work in pairs, in which case a single homework containing both names can be turned in.

4. COURSE POLICIES

4.1. Calculators. Calculators will not be used on the tests.

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. Classroom recording policy. The use of technologies for audio and video recording of lectures and other classroom activities is allowed only with the express permission of the instructor. In cases where recordings are allowed, such content is restricted to personal use only unless permission is expressly granted in writing by the instructor and by other classroom participants, including other students. Personal use is defined as use by an individual student for the purpose of studying or completing course assignments. When students have permission for personal use of recordings, they must still obtain written permission from the instructor to share recordings with others.

4.5. 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 (<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 EAD will make arrangements with the instructor for the accommodations.

4.6. 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.

4.7. **Anonymous feedback.** Students are encouraged to bring suggestions and to discuss with the course instructor any concerns they may have, including something they think is not being properly handled in the course. If you do not feel comfortable doing that, you have the opportunity to send some anonymous feedback on the course webpage.