

Vanderbilt University
MATH 3120/5120 — Introduction to Partial Differential Equations
Instructor: Marcelo Disconzi (marcelo.disconzi@vanderbilt.edu)

1. GENERAL INFORMATION

Instructor: Marcelo Disconzi.

email: marcelo.disconzi@vanderbilt.edu.

Instructor's office: Stevenson Center 1515.

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

Lecture time and location: Tuesday and Thursdays 1:10–2:25pm at Stevenson Center 1432.

Course webpage:

<http://www.disconzi.net/Teaching/MAT3120-Spring-20/MAT3120-Spring-20.php>

Office hours: Tuesdays 3–5:00pm, Thursdays 3–4:00pm, 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. **Prerequisites.** Either MATH 2410, MATH 2600, or MATH 2501 and either MATH 2400, MATH 2420, or MATH 2610.

2.3. **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 grade will be based on a midterm, a final exam, and homework assigned on a regular basis, counting respectively toward 30%, 35%, and 35% of the grade. **Students taking this course for graduate credit, i.e., MATH 5120, will be assigned supplemental homework.** 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	Thu, Feb 27, in class	30
Final	Wed, April 29, 3pm, location TBA	35
HW assignments	TBA in class on a regular basis	35
TOTAL		100

Important: there will be no alternate date for the final exam.

Other important dates:

Jan 20	Last day to register for pass/fail status
Jan 20	Last day to drop a class with no entry on the record
Jan 21-27	Discrepancy reporting
Feb 29-Mar 8	Spring break
Mar 4	Deficiency report due
Mar 13	Last day to change from pass/fail to graded status in a spring semester class
Apr 14-20	Dead week

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:
https://www.vanderbilt.edu/student_handbook/the-honor-system/.

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. **Course enrollment.** Students may change course enrollments in YES until Monday, January 13th. Between January 14th and 20th, withdrawals and adjustments in level or grading status must be made using a paper Change of Course Request form. If only the "DROP" section of the form is completed, the instructor may sign the form. If the ADD section of the form is completed (whether or not the DROP section is also completed), then the student must see the DUS (John Rafter) or Assistant DUS (Jakayla Robbins) in person. By Math Department policy, the only change to a math course that will be approved is a change in level (e.g., switching from Math 1301 to Math 1300 or vice versa).

4.8. **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.