

Vanderbilt University
MATH 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: Tuesdays and Thursdays, 2:45-4pm at Stevenson Center 1308.

Course webpage:

<http://www.disconzi.net/Teaching/MAT3120-Spring-22/MAT3120-Spring-22.php>

Office hours: Tuesdays, 4-6pm, Thursdays 1-2pm, or by appointment.

2. COURSE INFORMATION

2.1. **Textbook.** No textbook will be adopted. Some suggested references 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

Grades will be assigned based on class participation, homework assignments, a class project that must be on a topic connected with students' graduate studies, and an exam, with the distribution:

<u>Final grade range (rounded)</u>	<u>Letter grade</u>
95-100	A
90-94	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+
74-76	C
70-73	C-
67-69	D+
64-66	D
60-63	D-
<60	F

3.1. Assignments and schedule. An up-to-date schedule will be maintained on the course webpage. Some important dates are:

Sunday, January 30th	Last day to drop a class with no entry on the record
March 5th through 13th	Spring Break (classes do not meet)
Wednesday, March 23rd	Deficiency reports due
March 25th	Last day to withdraw from a course (with a grade of W)
Saturday, April 23rd	Dead Week begins
Friday, April 29th	Last day of classes

4. COURSE POLICIES

4.1. Honor Code. All work submitted for credit must be the student's 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/.

4.2. 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 other classroom participants, including 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.

4.3. 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 and Access (<https://www.vanderbilt.edu/ea/>) 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.

4.4. 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 student's family), and matters relating to the student's academic training (e.g., graduate or professional school interviews). Conflicts arising from personal travel plans or social obligations do not qualify as excused absences.

4.5. Anonymous feedback. Students are encouraged to bring suggestions and 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 anonymous feedback on the course webpage.