Math 2600-02: Linear Algebra
MWF 2:10–3:00pm in SC 1320
Fall 2019

Instructor: Spencer Dowdall

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Office Hours:
Mon 3:00–4:00
Tue 1:00–2:00
Fri 11:00–12:00
and by appointment

Course Information

Description: Linear algebra is an important bridge to more advanced topics in mathematics; it also has widespread applications to the physical and social sciences, engineering, economics, data science and many other fields. Topics to be covered include: vectors spaces, bases, linear transformations, matrices, row operations, determinants, systems of linear equations, eigenvalues and eigenvectors, inner product spaces, and orthonormal bases.

Math 2600 also serves an important role in Vanderbilt's curriculum in that it provides many students their first introduction to abstract and theoretical mathematics. The course will involve **rigorous proofs of theorems**, and students will be required to understand and reproduce proofs; assignments and tests will emphasize both proof writing and computational problem solving. For these reasons, Math 2600 is considered to be a very challenging course. Students should be prepared to invest considerable amounts of time and energy (e.g., 6 hours/week) in understanding the material and doing the homework.

Text: *Linear Algebra, 5th edition* by Stephen Friedberg, Arnold Insel, and Lawrence Spence. We will cover most of chapters 1 through 5 and potentially chapter 6 or 7. **Reading the textbook** is essential for understanding the material. For a different perspective on the material, I recommend the free textbook *Linear Algebra* by Jim Hefferon, available at `http://joshua.smcvt.edu/linearalgebra/`.

Course webpage: `https://math.vanderbilt.edu/dowdalsd/Fa2019math2600/`
View the webpage for course information (including this document), current announcements, instructor information, homework assignments, and the current schedule of topics. Grades for completed assignments, as well as selected solutions, will be available in Brightspace.

Grading: Final grades will be computed according to the following breakdown:
Homework & Quizzes–25%, Midterms–17% each, Final Exam–24%.

Midterm Exams: There will be three in-class exams on: Friday **September 13**, Friday **October 11**, and Friday **November 8**.

Final Exam: There will be a comprehensive final exam at 9:00am on **Monday December 9**, as designated by the university registrar (see `http://registrar.vanderbilt.edu/calendar/exams/`).

Quizzes: There will be occasional in-class quizzes designed to check basic understanding of the material. These will occur during the first 5–10 minutes of class, so it is important that you arrive on time. Your **lowest quiz score will be dropped**.

Make-up policy: There will be no make-up exams or quizzes. It is your responsibility to arrange your schedule to be able to take the exams at the scheduled times. Absences from exams or quizzes due to illness or other extraordinary circumstances must be adequately documented. Furthermore, except in genuine emergencies, a student must notify me of their absence in advance.

Homework: Homework assignments will be given in class and posted to the course webpage. Assignments will generally be due at the beginning of class on Wednesdays — **late homework will** NOT **be accepted** without prior approval. Your **lowest homework score will be dropped**. Solutions should be *neat*, *legible*, and *stapled*. You are encouraged to work together in groups and discuss homework problems with other students, but your *solutions must be written up independently and in your own words*. Copying answers from another student or source, or allowing your answers to be copied, will be considered a violation of the Honor Code.

I consider homework an essential part of this class. It is often said that the best way to learn mathematics is to do mathematics. To succeed in this class you should take the homework seriously and think carefully—and independently—about each problem. You should also study any distributed solutions and be sure that you understand them. Doing additional exercises is recommended.

Attendance: Attendance is very important for this class, as it will help you better understand the material. I strongly encourage you to actively participate by asking questions and engaging in class discussion. I also encourage you to read the text in advance as this will allow lectures to be more interactive and focused on the topics you find most challenging.

Students are expected to attend all scheduled classes and are responsible for all announcements, assignments, and material covered in class. Consult the daily schedule on the course webpage for the list of sections to be covered. See Vanderbilt's 'Class Attendance' policy in the Undergraduate Catalog.

Technology Policy: Please do not use cell phones or computers in class. It is distracting. You may not use calculators or any other electronic devices for tests or quizzes.

While I do not recommend you rely on computers, you may use calculators or advanced computer programs to guide your way or check answers in homework problems. However, your solution needs to be self-contained and must demonstrate an understanding of whats going on. And remember that on exams you will have to work without computational aids.

Registration deadlines: The Open Enrollment Period ends on Wednesday, August 28th. This is the deadline for students to add a course or to make other changes in YES. Between August 29th and September 4th, any withdrawals or adjustments in level or in grading status must be completed using the add/drop form. If only the "DROP" section of the form is filled out, the instructor may sign the form. If a student wishes to make any change that involves lling in the "ADD" section of a drop/add form (whether or not it also involves lling in the "DROP" section), then the student must see the DUS (John Rafter) or the Assistant DUS (Jakayla Robbins) in person. Per Math Department policy, the only change to a math course that will be approved is a change to the level of the course (e.g. switching from Math 1301 to Math 1300 or vice versa).

Accommodations: If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Student Access Services (`www.vanderbilt.edu/student-access/`). They will determine with you what accommodations are appropriate and communicate them to the instructor. This service is confidential.

Honor Code: Vanderbilt's Honor Code governs all work in this class. All work submitted for credit must be the student's own and should reflect the student's own understanding of the material.