Instructor: Dr. Neil Epstein, Associate Professor, Exploratory Hall 4457, nepstei2@gmu.edu

Office Hours: Tuesdays 12:45-1:45pm, most Fridays (but not Feb 8 or 15) 11a-12p, otherwise (e.g. Feb 7 and 14) Thursdays 12:45-1:45pm

Textbook: Friedberg, Insel, and Spence, *Linear Algebra, 4th ed.*, 2003.
   Note: I have heard that some versions of this text may be ordered that lack chapters 6 and 7. As I plan to cover parts of these chapters, make sure you don't get a deficient copy!

Prerequisites: MATH 290 and MATH 203.
   I am really serious about these. We will use skills and knowledge from both courses (and some that they depend on) heavily throughout the course. Review as needed!
   As you have all taken MATH 290, I expect everyone to be comfortable, flexible, and able with proof methods, logic, and basic set theory. You should be able to both understand and create proofs, and you should be comfortable with polynomials.
   As you have all taken MATH 203, I expect everyone to be comfortable, familiar, and skilled at row reduction, matrix algebra, the mechanics of vectors in $\mathbb{R}^n$, notions of vectors and scalars, determinants, the strong correspondence between row operations and solutions to equations, subspaces of $\mathbb{R}^n$, dimension, rank, and so forth. From the book by Lay, Lay, and McDonald, for example, I expect the equivalent at least chapters 1, 3, part or all of chapter 2 and/or 4, and parts of chapters 5 and 6.

Course Content: We will start with an introduction to fields (algebraic fields, not vector fields!) and polynomials, corresponding roughly to some of the Appendices. Then we will do most of chapters 1-3, parts of chapter 4, most of chapter 5, and finish with either chapter 6 or chapter 7. By the time the course is done, you will have a much deeper understanding of linear algebra than you will have had from merely taking MATH 203, and you will have more experience with proof-based mathematics than you had by the end of MATH 290.

Expectations:

- You will read the book carefully!

  The plan is for Friedberg et al (through their book) to be co-teachers with me.

- You will do all homework problems, even if they are not collected.

  As you know by now, math is best learned by doing.

- If you have any questions, ideas, or comments, you will speak up!

- You will not use your cell phones or portable electronics during class, with the exception of the book itself (if it is in e-book format)! These devices, while in vogue, are distracting and disruptive, and I may expel people from the classroom if I see this sort of behavior.

- You may be required sometimes to present proofs or ideas for the class.

- If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703 993 2474 or at ds.gmu.edu. All academic accommodations must be arranged through that office.

Grading and exams: There will be two in-class exams and a final. Together, they will comprise 95% of your grade. The in-class exams will be **Thursday, Feb 28** and **Tuesday, April 16**. Please make all your plans accordingly right now, so as not to miss these! The other 5% of your grade will come from class participation.

HOWEVER, please do not take this to mean that the homework is optional! The exams will be heavily based on it, and I will have no sympathy for people who have not done the homework (and asked me about anything that was unclear) and yet do poorly on corresponding exam problems.

Academic Integrity: GMU is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas and perspectives. When in doubt (of any kind) please ask for guidance and clarification.*

Extra Help: Get to know each other; you will be each other's resources. Also, do not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course.

Attendance and Class Participation: Students are expected to attend classes regularly and participate in all discussions. Please let me know ahead of time if you plan to be absent and why.

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*Text adapted from Stearns Center for Teaching and Learning website.