

MATH 417, SECTION 001: MATRIX ALGEBRA SYLLABUS

WINTER 2022

1. VITAL INFORMATION



Instructor: George H. Seelinger

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Class times and locations: MWF 10am–11am (EH 1068)

Instructor's Office Hours: MWF 11am–noon (EH 3827) and by appointment.
(Hours subject to change.)

Please come and talk to me!

1.1. Important Dates.

Classes Start	Wednesday, January 5th
Last day to add a course	Tuesday, January 25th
Last day to drop a course	Tuesday, January 25th
Midterm Exam 1	Wednesday, February 9th
Midterm Exam 2	Friday, March 25th
Last day to late drop a course	Tuesday, April 19th
Last day of classes	Tuesday, April 19th
Final Exam	Tuesday, April 26, 1:30pm –3:30pm

2. ABOUT THE COURSE

2.1. Course Description and Objectives. Many problems in science, engineering, and mathematics are best formulated in terms of matrices—rectangular arrays of numbers. This course is an introduction to the properties of and operations on matrices with a wide variety of applications. The main emphasis is on concepts and problem-solving, but students are responsible for some of the underlying theory. Diversity rather than depth of applications is stressed. This course is not intended for mathematics majors, who should elect Math 217, and/or Math 493-494 if pursuing the honors major.

2.2. Prerequisites. Three mathematics courses beyond Math 110.

2.3. Textbook. Linear Algebra With Application (Classic Version), 5th edition by Otto Bretscher.

2.4. Canvas. Class resources will be posted on Canvas.

3. ASSESSMENTS

3.1. Homework. Practicing is important! Some problems will be assigned for every class and the problems will be collected weekly. Some subset of the problems will be graded for accuracy. Late work will not be accepted for a grade.

3.2. Quizzes. Quizzes will be given occasionally to gauge your understanding of the material.

3.3. In-Class Work. In class, I will sometimes ask you to do some work on your own or in groups to practice new concepts and solidify understanding. When I collect in-class work, it will count towards the quiz portion of your grade.

3.4. Piazza. As you work through various readings and assignments, it is likely that questions will occur to you. Those that occur to you will likely also occur to other students. You should raise these questions at our class's Piazza Q & A site, accessed through Canvas.

Piazza is intended for discussions of questions relating to general questions about course concepts. Piazza is not the right forum for questions about specific written homework problems or about problems on a course exam you recently completed.

3.5. Exams. There will be two in-class midterm exams given during the semester. The dates of these exams are as follows:

- **Midterm Exam 1:** Wednesday, February 9th
- **Midterm Exam 2:** Friday, March 25th

The **final exam** will be held during the time specified by the university, which this semester is Tuesday, April 26th, 1:30pm–3:30pm. The final exam is comprehensive.

4. COURSE GRADE

Your course grade will be determined as follows:

Written Homework	10 points
Quizzes	10 points
Midterm Exam 1:	20 points
Midterm Exam 2:	20 points
Final Examination:	40 points
	<u>100 points possible</u>

The number of points you earn will be mapped to a letter grade as follows:

A+: [98, 100]	A: [93, 98]	A-: [90, 93]	B+: [87, 90]	B: [83, 87]	B-: [80, 83]
C+: [77, 80]	C: [73, 77]	C-: [70, 73]	D+: [67, 70]	D: [63, 67]	D-: [60, 63]

5. POLICIES

5.1. Attendance and Classroom Etiquette. Regular attendance is expected as is full engagement in classwork activities. Please arrive on time, turn off your cell phone, and stay for the entire class period. **You may not use any electronic device during class.** Studies suggest that student multi-tasking during class through use of smart phones and laptops hinders classroom learning for both users and *nearby peers*.

If you are sick, please do **not** attend class, but do email me in case you miss an in-class activity or quiz. In this case, we will make alternative arrangements based on your situation.

5.2. Learning Needs. The University of Michigan is committed to ensuring the full participation of all students, and I am committed to making learning as accessible as possible for all of my students. If you have a disability and need an accommodation to participate in this class or to complete course requirements, please ask Services for Students with Disabilities (SSD) to provide documentation of the accommodations that you need. Then, SSD can provide me with documentation so we can make sure you have the resources you need. I will treat any information that you share as private and confidential.

5.3. Calculators. Calculators will not be allowed on the quizzes, midterms, or the final exam.

5.4. Exam-grading Concerns. After receiving a graded exam, you have 1 week (7 days) to raise concerns about grading errors.

5.5. Academic Integrity. If you cheat, you will fail the assessment and may fail the course. Sometimes first year students are unaware of the academic norms and cheat unintentionally. Some examples can be found on the *LSA Community Standards of Academic Integrity* <https://lsa.umich.edu/lsa/academics/academic-integrity/academic-misconduct.html>. If you have any questions about what is, or is not, allowed in this course, please ask.

6. RESOURCES AND TIPS FOR SUCCESS

6.1. Tips for success.

- Use class time wisely: fully engage yourself in class activities, asking and answering questions when appropriate.
- Seek understanding rather than trying to rely on memorized formulas.
- Your classmates are an important resource! Spend time out of class asking questions to each other and teaching each other.
- Take advantage of my office hours!

6.2. Office Hours. Office hours are a time for students to drop by the instructor's office **without an appointment** to ask questions or discuss matters related to the course. However, it is expected that you will have already formulated your questions and attempted to answer them prior to showing up at office hours. Note that office hours are **not remedial** and, in fact, many of the strongest students regularly attend office hours.

6.3. Mental health and well-being. This semester and recent semesters have been especially challenging for many students. As a student, you may experience challenges that negatively affect your learning, such as anxiety, depression, interpersonal or sexual violence, difficulty with eating or sleeping, grief/loss, and alcohol or drug problems. The University of Michigan offers several confidential services that you might find helpful for addressing such challenges, including

- Counseling and Psychological Services (CAPS): 734-764-8312
- Psychiatric Emergency Services: 734-996-4747.
- Sexual Assault Prevention and Awareness Center (SAPAC) 24-Hour Crisis Line: 734-936-3333
- If you have a diagnosed mental health condition, you may also be able to register with Services for Students with Disabilities: 734-763-3000