

MAT 211: Introduction to Linear Algebra

Summer 1 — 2023

Instructor Information

Name: Matthew Huynh
Office: Math Building - S240A
Email: matthew.huynh@stonybrook.edu
Office Hours: TBD

Class Information

Dates: 22 May - 3 July
Time: MWTh 18:00-20:15
Classroom: By Zoom, link will be posted on Brightspace

Course Description

This course is an introduction to linear algebra without proofs. The focus will be on computations and some applications. There is a list of major topics and a tentative schedule below.

Textbook

Linear Algebra with Applications, 5 ed., by Otto Bretscher.

Homework

Homework will be assigned weekly on Gradescope. Please create an account and use the entry code “6ZYBB2” to enroll in the course.

Exams

There are two midterms and a final exam. The midterms will be posted on Gradescope and completed during the usual class time. The final exam will be in-person at Stony Brook during the usual class time on July 3rd. Location is to be determined. In certain circumstances, we may be able to arrange an alternative in-person testing site.

Grading

The numerical grade is determined by the following components:

Homework	15%
Midterm 1	25%
Midterm 2	25%
Final Exam	35%

The numerical grade will be converted to a letter grade after a curve is applied.

Major Topics

- Systems of linear equations
- Gaussian elimination and row-echelon form
- Vectors and matrices
- Linear transformations
- Matrix multiplication, inverse matrices
- Image and kernel of a linear transformation
- Subspaces of \mathbb{R}^n
- Linear independence, bases, and dimension
- Coordinates
- Inner product spaces
- Projections
- Orthonormal bases and the Gram-Schmidt process
- Orthogonal transformations
- Determinants
- Eigenvalues and eigenvectors
- Diagonalization

Tentative Schedule

The following is a *tentative* schedule for the course.

Week of. . .	Sections
05/22	1.1-1.3, 2.1
05/29	2.2-2.4, 3.1
06/05	3.2-3.4, Midterm 1
06/12	5.1-5.3, 5.5
06/19	6.1-6.3, Midterm 2
06/26	7.1-7.3
07/03	Final

Student Accessibility Support Center Statement:

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: <https://ehs.stonybrook.edu//programs/fire-safety/emergency-evacuation/evacuation-guide-disabilities> and search Fire Safety and Evacuation and Disabilities.

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Professions, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html.

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.