

## MAT-211-03,04 Spring 2020

---

TITLE	Introduction to Linear Algebra
DESCRIPTION	Introduction to the theory of linear algebra with some applications; vectors, vector spaces, bases and dimension, applications to geometry, linear transformations and rank, eigenvalues and eigenvectors, determinants and inner products. May not be taken for credit in addition to AMS 210.
TEXTBOOK	Linear Algebra with Applications, 5th Edition ISBN-13: 9780321796974 ISBN-10: 0321796977 Author: Otto Bretscher
INSTRUCTOR	Chuanhao Wei Email: chuanhao.wei@stonybrook.edu Office: Math Tower 4-117 Office Hours: Th 4:00pm-6:00pm Math Learning Center Hours: (in Math Tower S-235) F 12:00pm-1:00pm
GRADER	Yao Xiao Email: yao.xiao@stonybrook.edu Office: Math Tower S-240A Office Hours: M 9:00am-10:00am Math Learning Center Hours: W 4:00pm-5:00pm M 3:00pm-4:00pm
MEETING TIMES	Sec 03: TuTh 2:30pm- 3:50pm Earth&Space 069 Sec 04: MWF 10:00am-10:53am Physics P113
WEBPAGE	The Blackboard system. All course information will be updated on the Blackboard.
HOMEWORK	Homework problems will be assigned every Friday afternoon on the Blackboard, which usually consists of around 10 exercises picked from the textbook. Note that there are answers to the exercises in the appendix of textbook. The homework will NOT be collected nor graded.
QUIZ	Weekly quizzes will be given essentially every Thursday for Sec 03, and every Friday for Sec 04. They usually contain around 4 problems and take 20 minutes to solve. Students need to bring a letter-size paper to the class on the day with a quiz. The lowest 3 quiz grades will be dropped.
FINAL EXAM	Time: Wednesday, May 13, 8:00am-10:45am Location will be updated later.
GRADES	The total grade will be given by the weighted average of the quizzes (40%) and the final (60%). The guideline for the letter grades in terms of the total grades: A: 90/100; B: 80/100; C: 70/100 D: 60/100. Policy for final grades: <a href="http://www.math.stonybrook.edu/mde/grades.html">http://www.math.stonybrook.edu/mde/grades.html</a>

TENTATIVE  
SCHEDULE

Week of Jan 27: 1.1, 1.2;  
Week of Feb 3: 1.3, 2.1;  
Week of Feb 10: 2.2, 2.3;  
Week of Feb 17: 2.4, 3.1;  
Week of Feb 24: 3.2 3.3;  
Week of Mar 2: 3.4, 4.1;  
Week of Mar 9: 4.2 4.3;  
Week of Mar 16: Spring break;  
Week of Mar 23: 5.1, 5.2, 5.3;  
Week of Mar 30: 5.4, 5.5;  
Week of Apr 6: 6.1, 6.2;  
Week of Apr 13: 6.3, 7.1;  
Week of Apr 20: 7.2, 7.3;  
Week of Apr 27: Review;  
Week of May 4: Review.

MAJOR TOPICS

Systems of Linear Equations  
Gauss 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, Basis, and Dimension  
Coordinates  
Inner Product Spaces  
Projections  
Orthonormal Bases and Gram-Schmidt Orthogonalization  
Orthogonal Transformations and Matrices  
Determinants  
Eigenvalues and Eigenvectors  
Diagonalization

LEARNING  
OUTCOMES

Students must use the skills expected from their Versatility courses to study and practice them in greater depth, with further study applied to the area in which they are certified.

AMERICANS WITH  
DISABILITIES ACT.

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

[https://www.stonybrook.edu/commcms/studentaffairs/sasc/current\\_students/accommodation.php](https://www.stonybrook.edu/commcms/studentaffairs/sasc/current_students/accommodation.php)

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Student Accessibility Support Center. For procedures and information go to the following website:

<https://ehs.stonybrook.edu//programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities>

ACADEMIC  
INTEGRITY

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 Technology & Management, 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:  
[https://www.stonybrook.edu/commcms/academic\\_integrity/](https://www.stonybrook.edu/commcms/academic_integrity/)

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 University 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.