MAT 211 – Introduction to Linear Algebra – Syllabus

Spring 2023, Section LEC 04

Instructor:	Artem Kotelskiy, artem.kotelskiy@stonybrook.edu, Math Tower 4-105.
Class time & location:	MW 2:40pm-4:00pm, Physics P113.
Office Hours:	W 12:30pm-2:30pm, in-person at Math Tower 4-105.
MLC Hours:	Tu 4pm-5pm (via zoom: click to chose instructor and join).

Textbook:	Otto Bretscher, Linear Algebra with Applications, Fifth edition. I will also be posting concise lecture notes.
Course 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. The Tentative Schedule and the Major Topics to be covered are at the end of the syllabus.
Course Objective:	Learning the basics of linear algebra, and as a result being able to take higher division courses that require understanding of linear algebra.
Attendance:	Strongly strongly encouraged, but not mandatory.
HW/Gradescope:	We will use the platform https://www.gradescope.com/ for homeworks and exams; please register on that platform, and use the entry code "NXN35W" when registering, this will insure you will be added to the right course.
Brightspace:	We will use Brightspace for announcements. You should receive email notifications whenever I send an announcement.
Prerequisite:	C or higher in AMS 151 or MAT 131 or 141 or co-registration in MAT 126 or level 7 on the mathematics placement examination.
SBC / Credits	STEM+ / 3

Grader:	Vinicius C. Costa, vinicius.cantocosta@stonybrook.edu
Office Hours:	Tuesdays 6pm-8pm, in-person in Math Tower S-240A
MLC Hours:	Mondays 9am-10am, in-person in Math Tower S-235

Grading Policy:

Homework	14%
Midterm I	25%
Midterm II	25%
Final Exam	36%

Homework: Posted on gradescope weekly, with deadlines Thursday 10pm next week. No late homework will be accepted, unless you have a strong excuse. Two lowest scores for homework will be dropped. *Collaboration is encouraged*, but you must submit your own write-ups. When you write up your homework, show your work (answers only will not be sufficient), use complete sentences and write legibly.

Exams:	Two 55-minute exams will be given during the semester, in the normal class time and location; approximate midterm dates can be found in Tentative Schedule. A 2.5 hours comprehensive *final exam will be given during the finals period, on May 10, 11:15am-1:45pm.* No books, notes, calculators, or other electronic devices may be used during the exams, *but at the end of the exam you will have to scan your exam and submit it to gradescope using your phone.* You must bring your University ID card to all exams.
Makeup Exams:	Not possible. If a student misses a midterm exam with documented evidence, then the student's final exam grade will be substituted for the missed midterm. A student must sit the final exam at the scheduled time in order to receive a passing grade in the class.
Cheating:	Forbidden (obviously). This includes the use of websites where one can find solutions to homeworks.
Accommodations:	Once you make an arrangement with SASC, please let me know about it.

Questions, problems, suggestions: best to ask me during office hours or after classes, otherwise email me artem.kotelskiy@stonybrook.edu.

Tentative Schedule:

Week 01	$1/23 - 1/27$	1.1, 1.2
Week 02	$1/30 - 2/03$	1.3, 2.1
Week 03	$2/06 - 2/10$	2.2, 2.3
Week 04	$2/13 - 2/17$	2.4, 3.1
Week 05	$2/20 - 2/24$	3.2, 3.3
Week 06	$2/27 - 3/03$	3.4, Review
Week 07	$3/06 - 3/10$	Midterm I, 5.1
Week 08	$3/13 - 3/17$	No Classes (Spring Break)
Week 09	$3/20 - 3/24$	5.2, 5.3
Week 10	$3/27 - 3/31$	5.4, 5.5
Week 11	$4/03 - 4/07$	6.1, 6.2
Week 12	$4/10 - 4/14$	Review, Midterm II
Week 13	$4/17 - 4/21$	6.3, 7.1
Week 14	$4/24 - 4/28$	7.2, 7.3
Week 15	$5/01 - 5/05$	7.4 Review
Week 16	$5/08 - 5/12$	Final Exam

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
>Determinants
>Eigenvalues and Eigenvectors
>Diagonalization

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.

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 Technology and 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 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. Until/unless the latest COVID guidance (https://www.stonybrook.edu/commcms/strongertogether/latest.php) is explicitly amended by SBU, during Spring 2022 "disruptive behavior" will include refusal to wear a mask during classes.

Learning objectives:
Learning Outcomes for "Pursue Deeper Understanding: 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.

Standards for "Pursue Deeper Understanding: Certified courses must expect students to practice the skills they learned in their Versatility courses in greater depth. These courses must have prerequisites from among the Versatility categories and will typically be at the 200-400 level."