



MTH 207 : Linear Algebra I

Mathematics

Medgar Evers College

COURSE SYLLABUS

Instructor:	Bart Van Steirteghem	Term:	Fall 2017
Office:	A1 – L05V	Class Meeting Days:	Mo – We
Phone:	718-270-6429	Class Meeting Hours:	1:00– 2:40 pm
E-Mail:	bartvs@mec.cuny.edu	Class Location:	A1 – C05
Website:	http://bvans.net/mth207	Section:	001
Office Hours:	Mo 2:45 – 4:25 pm OR by appointment		

I. Welcome!

This course will serve as a first introduction to Linear Algebra, a subject which forms the basis to many modern technologies (like search engines). This subject is not a cornerstone of applied mathematics, but is also very interesting mathematically, and is used as an essential tool in many subfields of the discipline.

II. University Course Catalog Description

The course is designed to introduce to students elements of finite dimensional vector spaces over real numbers; linear transformations and applications; system of matrices; independence of vectors, bases, dimension; dot product; projections; linear transformations, matrix representation; eigen values and eigen vectors, diagonalization.

III. This course fulfills the following General Education Requirements:

- Foundation Cluster Required Core
 General Knowledge Cluster Flexible Core

College Option:

- Socio-Cultural, and Diversity Cluster
Integrated Knowledge Cluster: Social Sciences
 Humanities & the Arts
 Natural Sciences & Mathematics

IV. Course Overview

The basic theme of the course will be vector spaces. How to describe them (bases, dimension), functions between them (linear transformations, matrices), etc. Along the way, we will pay special attention to how these tools can be used to solve problems outside of pure math.

V. Course Objectives / Student Learning Outcomes (SLOs)

You will gain what we call mathematical maturity, this is the ability to read a math book and understand the essential from the details, know which examples are important, etc. You will also learn how to assemble a proof of a mathematical fact. In math, we are not sure of anything until we can prove it, hence proofs are very important. You will learn how to apply linear algebra to particular models of real world problems.

VI. Course Prerequisites

MTH 202 – Calculus I

VII. Course Credits

3 credits, 3 class hours, 1 lab hour

VIII. Texts and Materials

Textbook: Hefferon, J. (2017) *Linear Algebra* (Third edition). ISBN-13: 978-1944325039. List price \$22, and available at no cost at <http://joshua.smcvt.edu/linearalgebra/book.pdf>

Recommended paper: Bryan, K., & Leise, T. (2006). The \$25,000,000,000 Eigenvector: The Linear Algebra Behind Google. *SIAM Rev.*, 48(3), 569–581. available at <http://www.rose-hulman.edu/~bryan/google.html>

IX. Course Expectations

Attendance: Regular attendance is expected and encouraged, and students are expected to arrive to class on time, so as to not disturb the lecture. Cooperative class and lab assignments and collaborative learning are essential activities in this course. Students who maintain a perfect attendance record will generally obtain the maximum benefit from these activities.

Preparation: You should prepare for each lecture by reading in advance the material to be covered. As a general rule, allow one hour of preparation for each class hour.

Homework: Assignments assist you in gaining a firm grasp of the material. Allocate about two hours to work on assignments for each class hour.

X. Assistance

Office hours: See above, or by appointment

Math Computer Lab support: Mr. Ernts Gracia, Lab Technician (Tel. 270-6456), Room A1-L08F

XI. Assignments

WeBWork: You will complete the majority of your assignments online via the web-based interactive computer system called WeBWork. Unless instructed otherwise, WeBWork is due every Sunday night at midnight.

Written assignments: You will receive several written assignments during the semester. They are meant to give you practice with developing a mathematical argument. Use pen or pencil on lined paper and be sure to write clearly.

Lab assignments: These individual and collaborative in-class assignments will give you a chance to work on more in-depth and challenging problems in collaboration with the class as a whole or in small groups. We will use a powerful *Computer Algebra System* for computations and experiments.

XII. Basis for Final Grade and College's grading scale

Assessment	Percent of Final Grade
Written and Lab Assignments	15%
WeBWork Assignments	20%
Midterm Exam	30%
Final Exam (Cumulative)	35%
	100%

You will be assigned a letter grade, according to the College's scale.

XIII. Grade Dissemination

Graded assignments will be returned the class after their due date. Class exams will be returned within a week. The final grade will be posted within 48 hours of the final exam.

XIV. Course Policies:

Make up policy: There are no make-ups for the class exams or the final exam. The exact dates will be announced well in advance. If you anticipate a scheduling conflict, please contact your instructor immediately.

Late work policy: The deadlines for WeBWork assignment are strict: it is very important to master the material as we proceed through the course, and to identify difficulties right away. Written assignments that are one class late will receive a penalty of one letter grade. Written assignments that are two classes late will receive a penalty of two letter grades.

XV. Course Policies: Technology and Media

Email: your instructor will frequently communicate with you by email.

Classroom Devices: we will make extensive use of the computers in the classroom for lab assignments.

XVI. College Policies

College's accommodation policy for students with disabilities. Federal law prohibits discrimination on the basis of a disability. Under the guidelines of the Americans with Disabilities Act, the College will provide reasonable accommodations to persons with documented disabilities. Therefore, if you are in need of or have any questions regarding accommodations or services, please contact Mr. Anthony Phifer, Director, Office of Services for the Differently-Abled (Bedford Building Room 1011) at 718-270-5027 or aphifer@mec.cuny.edu. Any information provided to the office will be confidential and will not be released without your permission.

Academic Integrity. Academic dishonesty of any type, including cheating and plagiarism, is unacceptable at Medgar Evers College. Cheating is defined as improperly obtaining and/or using unauthorized information or materials to gain an advantage on work submitted for evaluation. Providing such unauthorized assistance to others is also cheating. Plagiarism is the representation of another person's work, words, or ideas as your own. Students should consult the Medgar Evers College Academic Dishonesty Policy and Procedure Handbook for specific regulations and procedures related to academic integrity. Academic dishonesty is punishable by failure of the test, examination, term paper, or other assignment on which cheating occurred. In addition, disciplinary proceedings in cases of academic dishonesty may result in penalties of admonition, warning, censure, disciplinary probation, restitution, suspension, expulsion, complaint to civil authorities, or ejection. For the full CUNY Policy on Academic Integrity, please see CUNY's website at https://www.cuny.edu/about/administration/offices/la/Academic_Integrity_Policy.pdf.

Professionalism Policy. Academic integrity and respect for the dignity of the individual are essential in any educational endeavor. In scholarly endeavors, all participants must commit themselves to truthfulness and honesty in the search for new insight and knowledge. In addition, honesty, integrity and respect in all interactions with colleagues, peers, teachers and support staff are essential professional attributes.

XVII. Important Dates to Remember

Midterm Exam: Monday October 23, 2017

Withdrawal Deadline: Friday, November 10, 2017

Final Examination: December 13– 20, 2017 (exact date TBA by Registrar)

XVIII. Course Outline

We will cover most of Chapters One through Five of the textbook