SUNY OLD WESTBURY

Department of Mathematics, Computer & Information Science

Linear Algebra
MA3160 • SYLLABUS SUMMER 2017
NAB 3113 9:00 am - 11:35 am MTWR

Professor: **Frank Sanacory**
Office: **NAB 2014**
Email: SanacoryF@oldwestbury.edu *Office Hours:* MTWR 8:30-9:00
Course Web Site: **sanacory.net**

TEXTBOOK: **Elementary Linear Algebra**, 11th Edition, Howard Anton, Wiley 2010 ISBN: 9780470458211.

PREREQUISITES: Grade of C or higher in Calculus I MA 2310.

COURSE DESCRIPTION: This course discusses the main concepts and terminology of linear algebra. Some of the topics included are systems of linear equations, matrices and determinants, vectors in 2-space and 3-space, Euclidean vector spaces, general vector spaces, subspaces, linear independence, bases and dimension, eigenvectors and eigenvalues, diagonalization, and linear transformations. We will also cover the Gram-Scmidt orthoganalization technique for Euclidean space as well as a few applications of linear algebra such as encryption, sequence representation or Markov Chains.

COURSE OBJECTIVES: Upon successful completion of this course students should: be able to solve systems of linear equations using a variety of methods; carry out the basic operations of matrix algebra; interpret the geometric properties of vectors in Euclidean n-space; define linear transformation and represent by matrices; comfortable with the axiomatic definitions of general vector spaces; determine whether a specified set of vectors forms a subspace; understand the notion of span and basis; calculate eigenvalues and eigenvectors of a square matrix; determine when a matrix is diagonalizable; write proofs of statements involving vector spaces, subspaces, linear independence, basis, and linear transformation.

COURSE EVALUATION & GRADING: Your grade for the course will be based on your homework/quiz performance (15%), two tests (50%) and a comprehensive final exam (35%).

CALCULATOR: No calculator is allowed nor needed.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:
If you have or suspect you may have a physical, psychological, medical or learning disability that may impact your course work, please contact Stacey DeFelice, Director, The Office of Services for Students with Disabilities (OSSD), NAB, 2065, Phone: 516-628-5666, Fax (516) 876-3005, TTD: (516) 876-3083. E-mail: defelices@oldwestbury.edu.
The office will help you determine if you qualify for accommodations and assist you with the process of accessing them. All support services are free and all contacts with the OSSD are strictly confidential. SUNY/Old Westbury is committed to assuring that all students have equal access to all learning activities and to social activities on campus.

RESPECT: No cell phones in class and no texting.

FINAL EXAM: Will be held August 17, 2017 in our regular classroom at the regular class time.

Topics Covered

Chapter 1: Systems of Linear Equations and Matrices
Chapter 2: Determinants
Chapter 3: Euclidean Vector Spaces
Chapter 4: General Vector Spaces
Chapter 5: Eigenvalues and Eigenvectors
Chapter 6: Selected sections from including Gram-Schmidt Orthoganlization