SUNY OLD WESTBURY

Department of Mathematics, Computer & Information Science

Linear Algebra
MA3160 • SYLLABUS SUMMER 2016

Professor: **Frank Sanacory**
Office: **NAB 2014**
Email: SanacoryF@oldwestbury.edu *Office Hours:* MTWR 12:00-1:00
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.

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.

OFFICE OF SERVICES FOR STUDENTS WITH DISABILITIES: SUNY/Old Westbury is committed to assuring that all students have equal access to learning and extracurricular activities on campus. If you have, or suspect you may have a physical, psychological, medical or learning disability that may impact how you function academically and/or your access to activities on campus, please contact Dr. Lisa Whitten, Director of the Office of Services for Students with Disabilities (OSSD). She will work with you to determine which accommodations you need, and provide you with documentation for your professors. The OSSD is located in the NAB, Room 2064. OSSD services are free and confidential. In addition, we hire qualified note takers at $100.00 for the semester if you are enrolled in the course, and $9.00 an hour if you are not. You can reach Dr. Whitten at 516-876-3009 or whittenl@oldwestbury.edu.

RESPECT: No cell phones in class and no texting.

FINAL EXAM: Will be held August 22, 2015 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: Inner Product Spaces
Chapter 8: Linear Transformations