

COURSE SYLLABUS

COURSE: MAT 280 LINEAR ALGEBRA

HOURS: Lecture: 2 Lab: 2 Shop/Clinical: 0 Credits: 3

This course provides an introduction to linear algebra topics. Emphasis is placed on the development of abstract concepts and applications for vectors, systems of equations, matrices, determinants, vector spaces, multi-dimensional linear transformations, eigenvectors, eigenvalues, diagonalization and orthogonality. Upon completion, students should be able to demonstrate understanding of the theoretical concepts and select and use appropriate models and techniques for finding solutions to linear algebra-related problems with and without technology. This course has been approved for transfer under the CAA as a premajor and/or elective course requirement.

PREREQUISITE(S): MAT 271

COREQUISITE(S): None

TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Lay, David C. *Linear Algebra and Its Applications plus New MyMathLab*, 5th ed., Pearson, New York. 2016.
ISBN 978-0134022697

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Use analytical and graphical representations to apply vector operations in multiple-dimensions.
2. Solve systems of linear equations using multiple manual and technology-based methods; these methods will include but are not limited to Gaussian and Gauss-Jordan.
3. Use eigenvalues, eigenvectors and diagonalization to solve problems in appropriate situations.
4. Use matrix operations and linear transformations to solve problems in appropriate situations.
5. Demonstrate knowledge of orthogonal projections and orthogonal complements of subspaces, and apply to appropriate situations.
6. Use the fundamental concept of a basis for a subspace to give a precise definition of dimensions and rank, and to solve problems in appropriate situations.
7. Demonstrate proficiency in using CAS technology to analyze, solve and interpret the various applications.

SYLLABUS INFORMATION:

The Student Learning Outcomes listed in this syllabus are those required actions that a student who successfully completes the course must be able to perform. The educational experience, however, is a two-way, interactive process involving both the student and the instructor. The student must play an active role in the learning process in order to be successful. Instructors will provide an Instructor's Syllabus at the first class meeting explaining how they measure each of the Student Learning Outcomes. A student who is unable to accomplish the outcomes will not receive a passing grade in the course.

The information in this BCC Syllabus may not be accurate beyond the current semester. Textbooks and other course materials are subject to change. Students should verify the textbooks at the first class meeting with their instructor prior to purchasing.

GRADING SYSTEM:

Brunswick Community College employs a system of letter grades and corresponding quality points per grade to evaluate a student's performance in meeting the stated goals and objectives for each course. The grading system is published in the [BCC Catalog and BCC Student Handbook](#).

ATTENDANCE POLICY:

Each student has individual responsibility for attending class regularly and for meeting course objectives. A student is expected to attend all class meetings in a course. Rules on tardiness and leaving class early are addressed in each instructor's syllabus. Instructors are required to record absences and report excessive absenteeism to the Registrar.

If a student is absent for any reason in excess of 20 percent of the class hours, he or she is in violation of the Brunswick Community College attendance policy. Unless the student officially withdraws from the course prior to the 65 percent point of the 16 week semester (or equivalent days for courses of other duration), he or she may receive a grade of "F."

Students who receive an "EXCESSIVE ABSENTEEISM NOTICE" are advised to contact their instructors immediately to review the conditions for withdrawing from the course or for continuing the course.

STUDENTS WITH DISABILITIES:

Brunswick Community College complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, which require that no qualified student with a disability be excluded from participation in or be denied the benefits of any services, programs or activities on the basis of his or her disability. If a student has a disability that is covered by the Americans with Disabilities Act and requires accommodations in the classroom and/or in extracurricular activities, the student must request the accommodations in writing and submit the request to the Disability Services Coordinator. Instructors will not provide accommodations without notification from the Disability Services

Coordinator. Brunswick Community College will make every effort to provide reasonable accommodations.