Nashville State Community College  
STEM Division  
Department of Mathematics  

2018 Master Course Syllabus  

Math 2010 Introduction to Linear Algebra  

Course Information:  

Course Title: Introduction to Linear Algebra  
Credits: 3  
Class Hours: 3  

Course Description:  

A traditional introductory linear algebra course. Topics include matrices, determinants, systems of linear equations, vectors, vector spaces, linear transformations, eigenvalues and eigenvectors.

Prerequisite: Math 1910  

Instructor Information:  

Name:  
Email:  
Office Phone:  
Office Location:  
Office Hours:  

Required Textbook(s) & Other Materials:  

Textbook(s): Linear Algebra and Its Applications by David C. Lay, 5th edition  
ISBN: 9780321982384  
Reference Materials: A graphing calculator capable of doing matrix arithmetic is required. The TI-84+ calculator will be the demonstration tool in the classroom. Other software may be used. (The instructor will clarify.)  

Once enrolled, all students should verify that they have the correct textbook and materials information by consulting the D2L/NS Online shell for the course. If you are registered with the Access Center and require an alternate format for the textbook and other course materials, please contact the Access Center at 615-353-3721, 615-353-3741, or accesscenter@nscc.edu.
Course Outcomes:

- Solve problems using mathematics, and determine if solutions are reasonable.
- Apply mathematical concepts to solve real-life problems using formulas (deduction) and interpret the meaning of the solution.
- Construct meaningful connections (transfer of knowledge) between mathematics and other disciplines.
- Apply technology for mathematical reasoning and problem solving.
- Analyze data/graphs by using mathematical modeling and/or statistical reasoning.

Course Competencies:

The following are detailed course competencies intended to support the course outcomes:

- Row reduce a matrix to echelon form
- Find the general solution to a system of linear equations, and write that solution in various forms
- Write a system of linear equations in both vector equation form and matrix equation form
- Determine if a set of vectors is linearly independent
- Determine if a set of vectors spans a given set
- Determine if a set of vectors is a basis for a given set
- Interpret a matrix as a linear transformation
- Interpret a linear transformation as matrix multiplication
- Perform standard matrix arithmetic operations
- Find and use the inverse of a matrix
- Compute the determinant of a matrix
- Determine whether a subset is a subspace
- Find bases for various subspaces of a matrix
- Find coordinates of a vector relative to a given basis
- Find any eigenvalues and eigenvectors of a matrix
- Be able to compute an inner product, and use it for various things (length, angles, orthogonality)

Topics to Be Covered:

- Systems of Linear Equations
- Row Reduction and Echelon Forms
- Vector Equations
- The Matrix Equation $Ax = b$
- Solution Sets of Linear Systems
- Linear Independence
- Introduction to Linear Transformations
- Matrix Operations
- The Inverse of a Matrix
- Characterizations of Invertible Matrices
- Introduction to Determinants
Course Assessments:
The following performance assessments will be used to demonstrate students’ understanding, knowledge, and skills:

- Three regular tests (80 minutes each), worth a total of 45% of the grade
- Approximately 6 quizzes (15 minutes each), worth a total of 25% of the grade
- One cumulative final exam (120 minutes), worth 30% of the grade

Late Work Policy & Make-up Procedures for Missed Assignments and Work:
There are no makeup tests or quizzes. One quiz grade will be dropped, and one test grade will be replaced with your final exam grade (provided it helps your grade).

Attendance Policy
Students are expected to attend all scheduled classes and laboratories. Absences in a course may affect a student’s final grade. The student is responsible for all assigned work in the course regardless of excused or unexcused absences. Tardiness may also affect a student’s final grade.

In online courses, attendance is signaled by logging on to the D2L/NS Online shell, participating as prompted (e.g., responding to an instructor’s email, posting to a discussion board) and/or completing and submitting assignments. Campus closures do not affect attendance and assignment completion in online courses.

Grading Scale:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>average ≥ 90%</td>
</tr>
<tr>
<td>B</td>
<td>80% ≤ average &lt; 90%</td>
</tr>
<tr>
<td>C</td>
<td>70% ≤ average &lt; 80%</td>
</tr>
<tr>
<td>D</td>
<td>60% ≤ average &lt; 70%</td>
</tr>
<tr>
<td>F</td>
<td>average &lt; 60%</td>
</tr>
</tbody>
</table>
According to NSCC policy, if a student fails a course, but has not officially withdrawn from the course, and her/his last date of attendance is before the last date to withdraw (use date appropriate to your section), the student will receive a grade of FA (i.e., “Failure for Attendance Reasons”).

An FN is awarded to students who never attended class.

**Technology Statement**
Nashville State’s classes are considered to be web-enhanced. Faculty have an expectation that students will use a computer and the Internet to complete assignments, engage in online discussions, and access various course materials through D2L/NS Online course shells. Computers are available for student use at each campus during campus open hours.

**D2L/NS Online and myNSCC**
It is students’ responsibility to check D2L/NS Online course shells for all enrolled courses and myNSCC, including student email, on a regular basis. These are the official communication channels between the college and students, who are responsible for the information communicated through those channels. D2L/NS Online contains specific course information and myNSCC contains information important for other purposes.

**ADA Compliance Statement**
Nashville State complies with the Americans with Disabilities Act (ADA). If you require accommodations for any courses in which you are enrolled, contact the Access Center at 615.353.3741 or 615.353.3721, or e-mail accesscenter@nscc.edu. If you are registered with the Access Center and require an alternate format for the textbook and other course materials, please contact the Access Center.

**Classroom Misconduct**
Nashville State Community College has a zero-tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary measures. Please review the Nashville State Student Code of Conduct policy. Please be aware that children are not allowed in class or to be left unattended on campus.

**Academic Misconduct**
Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. Students are responsible for understanding and abiding by the Academic Misconduct Policy in the Nashville State Student Code of Conduct. In addition to other possible disciplinary measures that may be applied through regular college procedures as a result of academic dishonesty, the instructor has the authority to assign an “F” or a “zero” for the exercise, paper, or examination, or to assign an “F” for the course. Students may appeal through the appropriate college grade appeal procedures.

**Academic Early Alert System**
Nashville State Community College uses an Early Alert System to let students know of a faculty member’s concern in one or more of these academic areas: lack of attendance, lack of classroom
participation, late or missing assignments, and/or poor performance on assignments/tests. *Please note that Early Alerts do not affect a student’s academic standing. If you receive an Early Alert email, please see your instructor and your academic advisor as soon as possible.

**RAVE Emergency Alert System**

Emergency events can happen at any time and Nashville State Community College wants to be able to notify students if and when they occur. For this reason, all students have been enrolled in the free RAVE alert system. If you have not already done so, please log in at [https://www.getrave.com/login/nscc](https://www.getrave.com/login/nscc) to confirm and update your contact information and notification preferences. It is critical that your information be correct so that you will receive any emergency notifications. Your RAVE Username is your NSCC email address. If you've never received an email from RAVE with your password, or if you need to reset your password, select “Forgot your password?” and a new password will be emailed to you. Should the RAVE system indicate “user not found”, select Register and create your own RAVE account.

**Inclement Weather & Campus Closings**

Nashville State will use the RAVE alert system to send a text message to students, staff, and faculty about adjusted hours of operation and/or closings at individual campuses. All students should check the Nashville State web site home page at www.nscc.edu for announcements on campus closures, which may vary from campus to campus. Campus closures will also be announced on local television stations. Students should use their own best judgment in determining whether to report to campus during inclement weather when classes are not cancelled.

Even when campuses are closed, students are still responsible for completing all assigned work. When classes are cancelled, faculty will post online assignments and any additional instructions in the D2L/NS Online course shell. Check D2L/NS Online for a message from your instructor regarding your online assignment requirements. Faculty have discretion over adjusting deadlines or due date for assignments, but students are responsible for completing all assigned work by the due date established by the instructor.

**Class Cancellation Policy**

If the class is cancelled, the instructor will notify all students by posting in the D2L/NS Online course, emailing through D2L/NS Online, and/or by posting a sign on the classroom door. In the event of class cancellation, students must access D2L/NS Online to complete classwork and the assignment that will be posted in the course D2L site.