Math 3301: Linear Algebra

Disclaimer
This syllabus is current and accurate as of its posting date, but will not be updated. For the most complete and up-to-date course information, contact the instructor.

Instructor Information
Dr. Dionne T. Bailey
Office: MCS 220G
Phone: 325-486-5425
Email: Dionne.Bailey@angelo.edu

Office Hours

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>11:00-12:00; 2:00-4:00</td>
</tr>
<tr>
<td>Tuesday</td>
<td>2:00-4:00</td>
</tr>
<tr>
<td>Wednesday</td>
<td>11:00-12:00; 2:00-4:00</td>
</tr>
<tr>
<td>Thursday</td>
<td>2:00-4:00</td>
</tr>
</tbody>
</table>

Tests
We will have three tests and a cumulative final examination. The exact dates and coverage of these tests will be announced in class. However, as a planning guide, you may expect to take the first test during the fifth week of classes, the second test during the ninth week of classes, and the third test during the thirteenth week of classes. The final exam will be held as specified in the course schedule. I do not intend to give makeup tests. That means you need to be present and ready to do your best each day, but especially on test days.

Daily Work
Daily work will consist primarily of homework problems from the textbook, supplemented by some in-class quizzes. Late work, including in-class quizzes for which you were absent, is not accepted.

Grade Calculations
Your grade on the daily work will count for 10%, your test average will count for 60%, and the cumulative final examination will count for 30%; then the usual grades (90 and above ↔ A, 80-89 ↔ B, 70-79 ↔ C, 60-69 ↔ D, and less than 60 ↔ F).

Student Learning Outcomes
1. Students will demonstrate factual knowledge including the mathematical notation and terminology used in this course. Students will learn the vocabulary, symbolism and basic definitions used in linear algebra, including vectors, matrices, vector spaces,
subspaces, linear independence, span, basis, dimension, linear transformation, inner product, eigenvalue and eigenvector.

2. **Students will describe the fundamental principles including the laws and theorems arising from concepts covered in this course.** Students will become familiar with the theorems about and the characteristics of linear spaces and linear transformations. Students will determine bases, compute dimensions, evaluate linear transformations, solve systems of linear equations and find determinants.

3. **Students will apply course material along with procedures and techniques covered in this course to solve problems.** Students will apply properties and theorems about linear spaces to specific mathematical structures that satisfy the linear space axioms.

4. **Students will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.** Students will acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring linear algebra as a prerequisite or for work in occupational fields requiring a background in linear algebra. These fields might include the physical sciences and engineering as well as mathematics.

**Required Texts and Readings**


**Subject Matter**

1. **Functions and Limits:** Functions and Their Representations, A Catalog of Essential Functions, The Limit of a Function, Calculating Limits, Continuity, Limits Involving Infinity.


3. **Inverse Functions:** Derivative of Logarithmic and Exponential Functions, Inverse Trigonometric Functions, Indeterminate Forms and l’Hospital’s Rule.

4. **Applications of Differentiation:** Maximum and Minimum Values, the Mean Value Theorem, Derivatives and Shapes of Graphs, Curve Sketching, Optimization Problems, Antiderivatives.

**Prerequisite**

Mathematics 2313.

**Course Schedule**

The subject matter schedule listed below is tentative, and subject to change and adaptation. For current, updated information about course topics, contact the instructor.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sections 1.1, 1.2</td>
</tr>
<tr>
<td>2</td>
<td>Sections 1.3, 1.4</td>
</tr>
<tr>
<td>Week</td>
<td>Topics</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
</tr>
<tr>
<td>3</td>
<td>Sections 1.5, 1.7</td>
</tr>
<tr>
<td>4</td>
<td>Sections 1.8, 1.9</td>
</tr>
<tr>
<td>5</td>
<td>review, Exam 1</td>
</tr>
<tr>
<td>6</td>
<td>Sections 2.1, 2.2</td>
</tr>
<tr>
<td>7</td>
<td>Sections 2.3, 3.1</td>
</tr>
<tr>
<td>8</td>
<td>Sections 3.2, 4.1</td>
</tr>
<tr>
<td>9</td>
<td>review, Exam 2</td>
</tr>
<tr>
<td>10</td>
<td>Sections 4.2, 4.3</td>
</tr>
<tr>
<td>11</td>
<td>Sections 4.4, 4.5</td>
</tr>
<tr>
<td>12</td>
<td>Sections 4.6, 5.1</td>
</tr>
<tr>
<td>13</td>
<td>review, Exam 3</td>
</tr>
<tr>
<td>14</td>
<td>Section 5.2, 5.3</td>
</tr>
<tr>
<td>15</td>
<td>Sections 4.7, review</td>
</tr>
</tbody>
</table>

**Student Disability Services**

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subject to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
dallas.swafford@angelo.edu

**Title IX**

Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

Michelle Boone  
Director of Title IX Compliance  
325-486-6357  
michelle.boone@angelo.edu
Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. The full details can be found in ASU Operating Policy OP 10.19 Observance of Religious Holy Days.

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Conduct Policies

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the Statement of Academic Integrity.

Plagiarism

Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitín. Resources to help you understand this policy better are available at the ASU Writing Center.

Copyright Policy

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

General Policies Related to this Course

All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook