COURSE DESCRIPTION
ALGEBRA I: LINEAR
MA 4/534 – 2C
FALL 2016

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Professor M. Nkashama
Office: CH 480C
Phone#: (205) 934-2154 (Math Dept)
E-mail: nkashama@uab.edu
Office Hours: Monday 11:00 AM – 1:00 PM (or by appointment)

Class Meeting times: TR 11:00 AM – 12:15 PM
Class Meeting location: EB 131
Prerequisite: Grade of C or better in MA 126, MA 226 or equivalent
Credits: 3 semester hours
Textbook: Elementary Linear Algebra, 11th Ed., by Howard Anton (Recommended), John Wiley and Sons, Inc., 2014. Topics to be covered can be found in Chapters 1 — 8, including methods of proof. (See below for more detail.)

Important dates:

First day of class: August 29, 2016
Labor Day Holiday: September 05, 2016
Last day to drop/add without paying full tuition: September 06, 2016
Last day to withdraw with a “W”: October 21, 2016
Fall/Thanksgiving Break: November 21 – 25, 2016
Last day of class: December 09, 2016

Major exams (tests): Test I: near Tuesday, October 11;
(These dates are approximate and may be slightly shifted due to unforeseen circumstances.)
Test II: near Thursday, December 01.

Final exam: Tuesday, December 13, 2016, 10:45 AM – 1:15 PM. The final exam is comprehensive!

Date: August 18, 2016.
Course policies:

- Please make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.
- If you are contacted by the Early Alert Program, you should consider taking advantage of the services it offers. Various services to assist you are also listed in the Student Resources section of the BlazerNET web site.
- If you wish to request a disability accommodation please contact DSS at 934-4205 or at dss@uab.edu.
- The two lowest quiz grades will be dropped to account for any missed due to illness or any other circumstance. If a test is missed due to a serious verifiable circumstance or official university business, the test grade will be replaced with the properly rescaled final exam score. You have to advise the instructor of such circumstances at the earliest possibility.
- Practice homework problems will be assigned regularly.
- No books, notes, or calculators will be allowed during any of the tests or quizzes.

Methods of teaching and learning:

- Class meetings of 75 minutes consisting of lectures and discussions of examples and/or homework problems. Time for quizzes and two in-class tests is also included.
- Students are expected to undertake at least 6 hours of private study and homework per week.

Course content:

- Linear Equations and Matrices
- Determinants (light treatment of)
- Vector Spaces
- Linear Independence and Basis
- Eigenvalues and Eigenvectors
- Quadratic Forms
- Inner Product Spaces
- Linear Transformations

Assessment procedures:

- Student achievement will be assessed by the following measures:
  - **Quizzes.** Sporadic unannounced (or announced) quizzes will be given. Quiz problems are taken from the (practice) homework problem sets and classroom work. This allows students to gauge whether they are ready to work problems in a test situation. Quizzes contribute 20% to the course average.
  - **Two in-class tests** including short questions for which either full credit or no credit is awarded (Part I) as well as problems requiring in depth understanding (including word-problems) for which partial credit is awarded.
where appropriate. (Students in MA 534 will have additional questions.)

Each test contributes 20% to the course average.

– A 150-minute comprehensive final examination including Part I and Part II type problems. The final contributes 40% to the course average.

• Your course performance is your course average (including the final exam score). This is a number between 0 and 100.

• Your final grade is determined according to the following table:

<table>
<thead>
<tr>
<th>Course performance:</th>
<th>90-100</th>
<th>80-89</th>
<th>65-79</th>
<th>50-64</th>
<th>below 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Grade:</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

• In addition your grade may be raised by a strong performance on the final exam (normally at most one letter grade).

• Additional points on tests could be earned by presenting solutions to specific problems in class. These problems (and the number of points to be awarded) will be announced separately from regular homework problems.

Tips:

• By working steadily and regularly, you will increase your chances to succeed in this course.

• Remember, being a full-time student is a full-time job.

Sections to be covered: Elementary Linear Algebra, 11th Ed., by Howard Anton (Recommended), John Wiley and Sons, Inc., 2014. Topics to be covered can be found in the following sections. (Some sections are repeats in a different setting!)

• Chapter 1: 1.1 – 1.8 (mostly review of matrix algebra).

• Chapter 2: 2.1 – 2.3.

• Chapter 3: 3.1 – 3.5 (mostly review of some Calculus II material).

• Chapter 4: 4.1 – 4.10.

• Chapter 5: 5.1 – 5.3.

• Chapter 6: 6.1 – 6.3.

• Chapter 7: 7.1 – 7.3.

• Chapter 8: 8.1 – 8.4.