Instructor: Dong Ye  
E-mail: dong.ye@mtsu.edu  
Office: KOM 274  
Office Hours: TR: 9:00 AM- 11:00 PM or by appointment  
Class meet: KOM 300, TR 6:00pm-7:25pm  
Reference books/notes:  
  Linear Algebra (lecture notes) by Terence Tao, available at AMS open lecture notes  
  Advanced Linear Algebra (3rd) by Steven Roman  
Prerequisites: C or better in Math 2010 (Linear algebra)

1. **Purpose:** This course is part of MS in Mathematicas core and is a required comprehensive exam. It is designed to provide graduate students with a broad introduction to fundamental topics in a combination of linear algebra and multi-dimensional geometry, and some application topics in computation and discrete mathematics.

2. **Objective:** Upon completion of this course, the student will have:  
   - Developed mathematical thinking and problem solving skills;  
   - Developed skills for constructing mathematical proofs with attention to matrices and vectors;  
   - Established complete facility with fundamentals of vector spaces and principles of vector algebra;  
   - Developed an understanding of metric spaces and linear operators;  
   - Calculated eigenvalues and eigenvectors;  
   - Broadened geometric understanding, including orthogonality and impact on diagonalization.

3. **Materials To Be Covered:**  
   - Vector Spaces  
   - Linear Transformations  
   - Isomorphism Theorems  
   - Linear Operator  
   - Eigenvalues and Eigenvectors  
   - Metric Spaces  
   - Hilbert Spaces

4. **Tests and Quizzes:** There will be ten quizzes, one test and one final exam during this semester. All the tests, quizzes and the final exam will be closed notes/closed book. Any student who wants a makeup for missing a test needs to show a valid excuse in writing or e-mail **BEFORE** the test to get a permission. There will be **NO** makeup for missing a quiz or the final exam.

5. **Attendance:** All students are required to attend every lecture. An excused absence **MUST** be asked for, in writing (e-mail is acceptable), **BEFORE** the class. Students are to be responsible
for any missing work (for instance, test, quiz, or schedule change, etc.) due to his/her absence.

6. Homework: Doing exercises is an important component to learning. For practice, students should do all of the assigned homework problems from each section.

7. Grading:
One Test (100 pts): 100 pts
Final Exam: 100 pts;
Ten Quizzes (10 points each): 100 pts;
Homework: 100 pts
Total: 400 pts

Grade scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>340-400 (85%)</td>
</tr>
<tr>
<td>B</td>
<td>280-339 (70%)</td>
</tr>
<tr>
<td>C</td>
<td>240-279 (60%)</td>
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<tr>
<td>D</td>
<td>0-239 (&lt;60%)</td>
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</tbody>
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8. Department Policy With Regard To Drops after the Official Drop Date: No grade of W will be assigned after the official drop date except in situations involving extreme extenuating circumstances beyond the student’s control. In particular, a W will not be granted merely because the student is failing. Students should be aware that missing the official drop date and thereby receiving an F can have ramifications on financial aid.

9. Reasonable Accommodation for Students with Disabilities: If you have a disability that may require assistance or accommodation, or you have questions related to any accommodations for testing, note takers, readers, etc., please speak with me as soon as possible. Students may also contact the Office of Disabled Students Services (898-2783) with questions about such services.

10. Academic and Classroom Misconduct: The instructor has the primary responsibility for maintenance of academic integrity and controlling classroom behavior, and can order the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct that violates the general policies of the Institution for each class session during which the conduct occurs. Extended or permanent exclusion from the classroom, beyond the session in which the conduct occurred, or further disciplinary action can be effected only through appropriate procedures of the Institution. If an instructor wishes to remove a student from the classroom for a longer period of time or permanently, he/she must refer the student to the Office of Judicial Affairs and Mediation Services.

   Disruptive behavior in the classroom may be defined as, but not limited to, behavior that obstructs or disrupts the learning environment (e.g., offensive language, harassment of students and professors, repeated outbursts from a student which disrupts the flow of instruction or prevents concentration on the subject taught, failure to cooperate in maintaining classroom decorum, etc.), text messaging, and the continued use of any electronic or other noise or light emitting device which disturbs others (e.g., disturbing noises from beepers, cell phones, palm pilots, lap-top computers, games, etc.).

   Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students found responsible of engaging in academic misconduct, either directly or indirectly, through participation
or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which may be imposed through the process provided in MTSU Policy III:00:08, Academic Misconduct, the instructor has the authority to assign an appropriate grade for the exercise or examination, or to assign an F in the course, as is proportional to the nature and extent of the academic misconduct. When a student has engaged in academic misconduct, the faculty member shall ensure that the student is made aware of his/her appeal rights.

All matters involving academic misconduct will be processed as set out in MTSU Policy III:00:08 Academic Misconduct. If not resolved prior to a hearing, these matters will be heard by the Academic Misconduct Committee which will convene a hearing to determine whether the conduct constitutes academic misconduct and, if so, whether additional disciplinary sanctions should be imposed. If the Committee determines there was no academic misconduct, it will direct any grade assigned to be changed as it determines is appropriate. Courses may not be dropped pending the final resolution of an allegation of academic misconduct.

**Note:** The instructor has primary responsibility for control over all classroom behavior and can direct the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct which otherwise violates the general rules and regulations of MTSU.