**Intro. to Matrix Algebra - MATH 217-001 - Fall 2015**

**Instructor:**
Dr. Mahesh Agarwal

**Contact information:**
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**Class timings:** Online

**Office hours:**
Mon 12:00 p.m. - 1:00 pm  
Wed, Fri 1:00pm - 2:00 pm

**MLC hours (Important):**
Drop-in math help is available at the MLC in 2076 CB, Monday-Thursday from 8:30AM - 7:00PM and Friday 9:00AM - 1:00PM. This is also the place where you will be taking your quizzes and proctored exams.

**Textbook:**
*Linear Algebra with Applications (8th edition), Gareth Williams.* You can use older editions if you like. Though you will be responsible for co-ordinating the problems.

**Calculator:**
*A graphing calculator like TI-84*

**Course description:**
This course is an introduction to linear and matrix algebra for engineering majors. Topics include: matrix algebra, systems of equations, vector spaces, linear mappings, eigenvalues and singular values.

**Mathematics department learning goals:**
The Department of Mathematics and Statistics Learning Goals for its classes are:

1. Increase students’ command of problem-solving tools and facility is using problem-solving strategies, through classroom exposure and through experience with problems within and outside mathematics.

2. Increase students’ ability to communicate and work cooperatively.

3. Increase students’ ability to use technology and to learn from the use of technology, including improving their ability to make calculations and appropriate decisions about the type of calculations to make.
4. Increase student’s knowledge of the history and nature of mathematics. Provide students with an understanding of how mathematics is done and learned so that students become self-reliant learners and effective users of mathematics.

Math 217 learning goals:
Each of the Department’s classes emphasizes some learning goals more than others. Matrix algebra is used extensively in Engineering. In this class the basic concepts of matrix algebra and the mathematical tools that derive from them are of fundamental importance along with recognizing when and how to apply them in various contexts. Homework, graded and ungraded, addresses the students’ command of problem solving by introducing them to new problem solving tools and exposing them to problems pure and applied. Technology in the form of computer labs, in-class computer demonstrations and the use of on-line resources is an important feature of the course.

Participation (5%):
You are expected to watch each lecture and participate in the discussion forums. Set aside 3-5 hours per week to go over the lectures and work on the assignments. All discussions about the course content will be carried on Piazza. You can access Piazza from the left hand menu bar on Canvas. Please take 5-10 mins to familiarize yourself with Piazza.

Assignments (15%):

Online assignments:
There will be weekly assignments with around 10-15 problems each. These assignments will be given on an online platform called WeBWorK. You can access it using through Canvas links on the left menu - under Module. You are encouraged to discuss the problems with your classmates. But since each student will have different problems you will have to work out the steps on your own. It is also advisable to work out the problems on paper first and then enter the answers online. Late assignments will NOT be accepted as sufficient time will be given to finish them. Once the assignment closes, solutions to most questions on the assignment will be displayed. It is highly recommended that you go over the solutions and ensure that you know how to work them out.

Written assignments: Occasionally, you will be asked to turn in written assignment with 1-3 questions. These assignments must be submitted electronically via Canvas. You will be expected to write/type up the solutions. Scan the document into .pdf format and upload it. They will be graded and returned to you via canvas.

Quizzes (10%):
There will be a quiz every week. You can take the quiz by going to the Math Learning Center between from Wednesday - Friday during regular hours. For regular MLC hours please see the MLC timings description above. The quizzes will be under 20 mins long. No make up quizzes will be given. However the lowest quiz score will be dropped.

Midterm (30%):
The midterm is an hour long exam. You can take the midterm exam between October 19 - October 21 by going to the MLC during regular hours. The last exam at the MLC will be proctored 1 hour before the MLC closes.

Final (40%):
You can take the final exam on either of these 3 days: December 14 - December 16 at the MLC during MLC open hours.
MLC hours: Monday-Thursday 8:30am - 7:00pm
Friday - 9:00am - 1:00pm Location: 2076 CB.

Grading scheme:
Your final grade will be determined by the following scheme:

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Participation</td>
<td>5%</td>
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<tr>
<td>Assignments</td>
<td>15%</td>
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<tr>
<td>Quizzes</td>
<td>10%</td>
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<tr>
<td>Midterm</td>
<td>30%</td>
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<tr>
<td>Final exam</td>
<td>40%</td>
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The grades will be curved and the grades assigned will NOT be worse than:

<table>
<thead>
<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A's</td>
<td>100%-90%</td>
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<tr>
<td>B's</td>
<td>89%-80%</td>
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<tr>
<td>C's</td>
<td>79%-70%</td>
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<tr>
<td>D's</td>
<td>69%-60%</td>
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<tr>
<td>E</td>
<td>59%-0%</td>
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Email policy:
When emailing me, your message should be well composed, thought out and proof-read. **Do not forget to sign your name and mention the course that you belong to.**

Students with disabilities:
The University will make reasonable accommodations for persons with documented disabilities. Students need to register with Disability Resource Services (DRS) every semester they are enrolled. DRS is located in Counseling & Support Services, 2157 UC [http://www.umd.umich.edu/cs_disability/]. To be assured of having services when they are needed, students should register no later than the end of the add/drop deadline of each term. If you have a disability that necessitates an accommodation or adjustment to the academic requirements stated in this syllabus, you must register with DRS as described above and notify your professor.

Statement of academic integrity:
The University of Michigan-Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University’s standards of academic conduct as set forth by the Code of Academic Conduct [http://umdearborn.edu/697817/], as well as policies established by each college. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses and violations can result in penalties up to and including expulsion from the University.