Instructor Name: Daniel Yorgov
Office: Fisher Hall 320B
Office Phone: 906-487-2175
Meeting time: MTWR 11:05-11:55 am, EERC 103
Office Hours: MTW 12:00-1:00 pm, R 9-10 am, or by appointment
Extra Help Session: TBA
E-mail: dvorgov@mtu.edu
Course E-mail: MA2321-r2-L@mtu.edu
Web: www.mathlab.mtu.edu/~dvorgov/MA2321
WebCT: www.courses.mtu.edu


Course Objectives:

This is an introductory course in Linear Algebra aiming to develop basic concepts and skills you will use later in your careers.

The following topics will be covered throughout the semester: Existence/uniqueness of solutions to systems of linear equations (Row Reduction, Gauss-Jordan elimination). Vector and matrix equations, linear dependence, geometric/algebraic definitions of span, parametric forms of vectors and solution sets. Linear and matrix transformations, matrix operations, inverses and invertibility. Subspaces of \( \mathbb{R}^n \), subspace (vectorspace), dimension, and rank, bases. Definition and computation of the determinant, its properties, and Cramer's Rule. Eigenvalues & Eigenvectors, the Characteristic equation and the nullspace. Orthogonality, length, and inner product, orthogonal sets, projections, and complements. Diagonalization of (real) symmetric matrices and Quadratic forms.

Course Expectations:

Students in MA2321 are expected to:

- Attend every class, although the attendance will not be checked.
- Prepare for class each day. You should read the section being discussed that day, as well as complete all the homework due. You should expect to spend a minimum of 2 hours outside of class for every one hour of class time.
- Take detailed notes in class, and review these notes as part of your class preparation.
- Ask questions if something is not clear. This includes asking questions in class, as well as seeing me during the office hours.
- Turn in all assignments on time, showing neat and logical work.

SEEK HELP BEFORE IT’S TOO LATE!
Homework:

- The homework for the section is **assigned automatically** from the attached list when I finish the section. The homework for the PREVIOUS week is due on **Tuesday, next week** at the beginning of class. (e.g. if I am done with section 2.1 on Wednesday the homework set for this section will be due Tuesday next week).
- If a homework set (from a SINGLE section of the text) takes more than one sheet of paper, then they should be stapled together.
- Each HW section (e.g. 1.1) must be kept separated (do not staple together with 1.2).
- Two HW sections will be randomly selected and collected each Tuesday. Let’s say we finished 1.1, 1.2, 1.3, and 1.4 previous week. You are responsible to bring all those HW sections on Tuesday, but I will collect only two sections.
- A subset of 3 problems within each homework section will be randomly chosen to be graded. Each homework section is 12 points. Each problem within a set is 4 points.
- When I collect HW there will be two folders: one for students with a last name starting with letters **A through L** and another one for students with a last name starting with letters **M through Z**. Please make sure that you put your HW in the correct folder otherwise your HW might be lost or it might be graded much later.
- All homework within the set will be checked for completeness. The grader can decide to penalize you for problems you skipped even if they are not in the graded subset. Problems done out-of-sequence may not be graded.
- **Strictly NO LATE homework will be accepted unless it is late due to an excused absence.**
- For each problem, restate the problem, show your analysis, and clearly identify the answer to the question. All of your work must be neat, legible and logical. **Answers not showing the supporting work will receive zero credit.**

Exams and Quizzes:

Two exams and three or four quizzes will be given. Quizzes will be 15 minutes long and will be announced at least two class days before they are scheduled. All exams during will be given during the regularly scheduled class time. **NO MAKE-UP EXAMS or QUIZZES**, unless you have an University-excused absence!

Grading:

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<thead>
<tr>
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<tbody>
<tr>
<td>HW</td>
<td>20%</td>
<td>lowest grade will be dropped</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
<td></td>
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<tr>
<td>Exam 1</td>
<td>30%</td>
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<tr>
<td>Exam 2 (Final)</td>
<td>35%</td>
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**TOTAL 100%**

Scale:

Your final grade will be based on the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Letter</th>
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<tbody>
<tr>
<td>≥ 90%</td>
<td>70% - 74.9%</td>
<td>A</td>
</tr>
<tr>
<td>85% - 89.9%</td>
<td>65% - 69.9%</td>
<td>AB</td>
</tr>
<tr>
<td>80% - 84.9%</td>
<td>60% - 64.9%</td>
<td>B</td>
</tr>
<tr>
<td>75% - 79.9%</td>
<td>&lt; 60%</td>
<td>BC</td>
</tr>
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If you have a disability that could affect your performance in this class or that requires a special accommodation, please see me as soon as possible so that we can make the appropriate arrangements. The Affirmative Action Office has asked that you be made aware of the following: “**MTU complies with all federal and state laws and regulations regarding discrimination, including the ADA Act of 1990. If you have a disability and a need, a reasonable accommodation for equal access to educations or services can be made through the Dean of Students Office (Gloria Melton 487-2212). For concerns regarding discrimination of any kind, please contact your advisor, department head, or affirmative action office.**”