MATH 201 - LINEAR ALGEBRA

Spring 2015
TR 2–4, GL 14

INSTRUCTOR
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OFFICE HOURS
Mon 2–3 and Wed 1–3, Korman 249.

CLASS PAGE
www.math.drexel.edu/~tolya/201S15.html

PREREQUISITE
Calculus and Analytic Geometry

TEXT
Otto Bretscher, Linear Algebra with Applications, 5th edition

HOMEWORK
You are expected to read the text regularly and thoroughly. Weekly problem sets will be posted on the class page. These should be worked on independently. After giving a problem set your best effort, you may find it useful to share your thoughts and solutions.

QUIZZES
There will be a quiz on a typical week. Two lowest scores will be dropped, no makeups will be offered.

EXAMS
There will be two in-class midterms and a cumulative final exam. The lower midterm score will be replaced by the final exam score if it is higher. There will be no makeup exams.

GRADE COMPONENTS
Exams 28% each, quizzes 16%.

RESOURCES
Notes by R. Terrell: www.math.drexel.edu/~tolya/Terrell.pdf
Text by K. Matthews: www.numbertheory.org/book
Course by G. Strang: ocw.mit.edu/courses/mathematics/18-06-linear-algebra-spring-2010
MRC, Korman 249: www.drexel.edu/math/resources/undergraduate/mrc

ACADEMIC MATTERS
Policies: www.drexel.edu/provost/policies
Accommodations: www.drexel.edu/oed/disabilityResources/students
Student handbook: drexel.edu/studentaffairs/community_standards/studentHandbook
### APPROXIMATE CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Linear systems. Gaussian elimination. The structure of solutions.</td>
<td>1.1, 1.2, 1.3</td>
</tr>
<tr>
<td>2</td>
<td>Rank of a matrix. Linear combinations. Matrix-vector product.</td>
<td>1.3</td>
</tr>
<tr>
<td>3</td>
<td>Linear transformations. Matrix of a transformation, geometry.</td>
<td>2.1, 2.2</td>
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<tr>
<td>4</td>
<td>Matrix product. The inverse matrix.</td>
<td>2.3, 2.4</td>
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<tr>
<td></td>
<td><strong>Midterm 1</strong></td>
<td></td>
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<tr>
<td>5</td>
<td>Kernel and image of a transformation. Span. Linear dependence.</td>
<td>3.1, 3.2</td>
</tr>
<tr>
<td>6</td>
<td>Basis and dimension of a subspace. Bases for kernel and image. Rank-nullity theorem.</td>
<td>3.3, 3.3</td>
</tr>
<tr>
<td>7</td>
<td>Coordinates. Orthogonal projections and orthonormal bases.</td>
<td>3.4, 5.1</td>
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<tr>
<td>8</td>
<td>Orthogonal transformations and matrices.</td>
<td>5.3</td>
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<tr>
<td></td>
<td><strong>Midterm 2</strong></td>
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<tr>
<td>9</td>
<td>Determinants. Eigenvalues and eigenvectors.</td>
<td>6.1, 6.2, 7.1, 7.2</td>
</tr>
<tr>
<td>10</td>
<td>Eigenspaces and eigenbases.</td>
<td>7.2, 7.3</td>
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</tbody>
</table>

June 9–12: Final Exams

This syllabus may be revised or updated during the term.