Instructor  Antoine Pauthier. Office: Vincent Hall, 250.
e-mail: apauthie@umn.edu
web-page: http://www-users.math.umn.edu/ apauthie/

Office hours  Tuesday-Wednesday: 10:10-12. Or by appointment.

Course title and catalog description  Applied Linear Algebra. Systems of linear equations, vec-
tor spaces, subspaces, bases, linear transformations, matrices, determinants, eigenvalues, quadratic
forms, applications.

Text and material  Linear Algebra with Applications, by Otto Bretscher, fifth edition. The course
will cover at least chapters 1-8, and hopefully a consistent part of chapter 9. The class time will
be devoted to lectures where you should gain an understanding of basic concepts and methods,
realize connections between various parts of linear algebra, and eventually build a global picture of
linear algebra. You will broaden your knowledge and develop solving routines out of class: you are
expected to carefully study the text and solve a good deal of selected exercises.

Assignments  Homework assignments will be updated on this syllabus, available on Moodle and
on my webpage. They will usually be collected Friday. I will drop the 2 worst grades. This should
be enough to cover all missed homework due to unexpected circumstances. Consequently, NO late
homework will be accepted.

You may discuss problems with other students. However, you are supposed to work out and
write down solutions yourself. It is my understanding that if you submit a correct solution you are
able to reproduce it if asked to. Questions or objections to grading must be brought up within a
week after the graded work is handed out in class.

Please write complete solutions clearly, showing all your work in a reasonably neat and coherent
way, on letter-sized sheets. Print your first and last name legibly on each assignment. Please staple
your work.

Exams and grading policy  There will be two 50-minutes mid-term exams covering appropriate
parts of the material and a comprehensive final exam covering all the material. No books or notes
are allowed. Scientific (non-graphical) calculators are allowed (though useless). Make-up exams are
discouraged, but can be given for legitimate reasons such as illness documented by medical excuse
or participation at a University sponsored event. Whenever possible you should inform beforehand
if you have to miss an exam. Difficulty and the scope of the material covered may be different for
make-up exams.

Grading scheme: homework 10%, midterm exams 25% each, final exam 40%.
Exam dates:

• October 17 (Wednesday);

• November 19 (Monday).

Final exam:
• December 17, 10:30-12:30 for section 020 (9:05 lecture)
• December 15, 10:30-12:30 for section 030 (12:20 lecture)

If you want to take the final with the other section let me know as soon as possible.

Tentative homework schedule and assignments

Problems you have to turn in are in bold face (e.g., 1). The other problems are for your practice only. Assigned homework is the minimum you can do for your practice. The textbook offers a lot more problems from which you can choose to suit your needs. I would be delighted to discuss more advanced problems in office hours. Below are the homework schedule and assignments for the first three weeks, it will be updated later.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Text section and recommended problems</th>
<th>homework due...</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>9/5</td>
<td>1.1 (p.5): 5,6,8,14,15,17,18,19,20,21,24,27,29,34,36,41,48,49.</td>
<td>9/14</td>
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<td></td>
<td></td>
<td>1.2 (p.18): 5,6,10,11,18,19,24,25,26,35,37,38,42,45,48.</td>
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<tr>
<td>II</td>
<td>9/10</td>
<td>1.3 (p.34): 1-8,13-15,23,24,26,26,27,28,33,34,35,36,47,48,49,51.</td>
<td>9/21</td>
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<td>2.1 (p.53): 1-9,14,33,34,42,43,57,63,64.</td>
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<td></td>
<td>2.2 (p.71): 2,4,6,8,10,19,20,21,22,23,25,27,29,30,35,38,45,46.</td>
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<tr>
<td>III</td>
<td>9/17</td>
<td>2.3 (p.85): 1,3,5,14,15,17,22,29,33,42,43,44,57,58.</td>
<td>9/28</td>
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<tr>
<td>IV</td>
<td>9/24</td>
<td>3.2 (p.131): 1,2,5,15,18,19,27-33 odd,34,36,37,39,41,45,46,47,49,52,53.</td>
<td>10/5</td>
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<td>3.3 (p.143): 7-15 odd,21,24,27,28,29,32,33,35,36,39,40,41,75,76,82.</td>
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<td>V</td>
<td>10/1</td>
<td>3.4 (p.159): 5,11-17 odd,18,25,27,29,30,37,44,47,59,60,61.</td>
<td>10/12</td>
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<td>4.1 (p.176): 1,2,3,4,5,8,9,21,22,23,26,39,47,48.</td>
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<td>4.2 (p.184): 1,2,6,25,26,27,30,53,59,61,63.</td>
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The first midterm is on 10/17. It covers chapters 1 to 4 included. No homework is due on 10/19.