## Math 342—Spring 2016—CRN 33650

### Course Information

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Robert Lipshitz</th>
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<tbody>
<tr>
<td>e-mail</td>
<td><a href="mailto:lipshitz@uoregon.edu">lipshitz@uoregon.edu</a></td>
</tr>
<tr>
<td>Office</td>
<td>Fenton 303</td>
</tr>
<tr>
<td>Office Hours</td>
<td>Wed. 10:00–11:30, Fri. 1:30–3:00. Subject to change.</td>
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### Course Prerequisites
Math 341 (first quarter linear algebra).

### Course Requirements
There will be online homework, via WebWork, due roughly once a week, initially on Mondays, and written homework due roughly once a week, initially also on Mondays. There will be two in-class midterm exams and a final exam.

There will be new material covered and a homework assignment due during dead week (the last week of classes).

### Test Dates
- **Midterm 0:** March 28.
- **Midterm 1:** April 20.
- **Midterm 2:** May 10.

Subject to change if necessary.

**Final exam:** per Registrar’s schedule.

Generally, there will not be makeup exams. If you are unable to attend the exam, contact me in advance to discuss whether other arrangements are possible. If you are unable to attend an exam because of an emergency, contact me as soon as possible; you will be asked to provide documentation of the emergency.

### Grading Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Online Homework</td>
<td>10%</td>
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<tr>
<td>Written Homework</td>
<td>15%</td>
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<td>Midterm 0</td>
<td>5%</td>
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<tr>
<td>Midterm 1</td>
<td>20%</td>
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<tr>
<td>Midterm 2</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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The lowest online homework score and lowest written homework score will be dropped, to accommodate illnesses and other unforeseen events. Late homework will not be accepted. Only part of each written homework assignment will be carefully graded (by the grader).

### Students with disabilities
The University of Oregon is committed to an inclusive learning environment. If you have a disability which may impact your performance on exams, please contact the Accessible Education Center to discuss appropriate accommodations. If there are other disability-related barriers to your participation in the course, please either discuss them with me directly or consult with the Accessible Education Center.
WebWork Information:
- The WebWork site is https://webwork2.uoregon.edu/webwork2/Math342-33650/
  Log in with your DuckID.

Course Policies:
- Fridays will typically be used for review, and sometimes to catch up on material.
- Cell phones, computers, etc. are not permitted in this class except by instructor’s
  permission. (They don’t bother me, but there is strong evidence they distract other
  students.)
- Calculators and other electronics are not permitted on exams. Notes and the text-
  book are also not permitted.
- Written homework must be turned in at the beginning of class on the due date. (If
  you can’t make it to class, put it in the mailbox in Fenton before class.) Online
  homework is due as scheduled on WebWork.
- You may work together on WebWork problems, but should then go back and solve
  the problems again on your own. Similarly, you are welcome to work on the written
  homework together, but you must write up your final answers by yourself. Failure
  to abide by this policy constitutes cheating.
- You are also generally welcome to use any resources you like. However, any re-
  source beyond the textbook that you use for written homework must be cited.
  This includes electronic resources (including Wikipedia and Google) and human
  resources (including your classmates). Failure to cite sources constitutes academic
  misconduct.

Course Resources:
- We will use Canvas to track grades and post some solutions.
- Course website, with up to date syllabus and assignments:
  http://pages.uoregon.edu/lipshitz/Teaching/Sp16Ma342.html
  or
  http://goo.gl/owvazd

Getting Help: I have three office hours a week. Get help as soon as you feel confused.

Course goals: The main goals of this course (learning outcomes) are:
- To develop an understanding of the notion of abstract vector spaces and linear
  transformations, and how to represent vectors and linear transformations in terms
  of bases.
- To understand how the matrix for a linear transformation when one changes bases.
- To understand the notion of eigenvalues and eigenvectors and use them to diagonal-
  ize matrices (when possible) and understand qualitative and quantitative properties
  of matrices, linear transformations, differential equations, and difference equations.
- To understand the spectral theorem for symmetric matrices and its application
  to quadratic forms, and applications of quadratic forms, in turn, to optimization
  problems.
- To be able to find and exploit orthonormal bases.