

MATH 4377/6308, ADVANCED LINEAR ALGEBRA I, FALL 2013

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Course times:

- *Lectures:* Monday & Wednesday 4pm–5:30pm, room F 154
- *Office hours:* Monday & Wednesday 2pm–3pm, or by appointment.

Prerequisites: Math 2331 (Linear Algebra) and at least 3 semester hours of 3000-level mathematics courses.

Textbook: Linear Algebra and its Applications, second edition, by Peter D. Lax (ISBN 978-0-471-75156-4)

Course Description: This is a second course in linear algebra, covering topics including vector spaces and linear maps from the abstract point of view; determinant, trace, and spectral theory (eigenvalues, eigenvectors) of linear maps; and the structure of Euclidean space. Although you have worked with some of these topics before in particular settings, we will consistently adopt a viewpoint that emphasises abstraction and generality. For example, we will emphasise abstract vector spaces rather than \mathbb{R}^n , and linear transformations rather than matrices.

You are expected to have had experience with reading and writing proofs. In particular, we will place significant emphasis on communication and writing. *Simply knowing how to solve a problem is not enough – you are responsible for communicating that solution.* To receive full credit your proofs must be correct, clear, and concise, and must be written using full English sentences and proper grammar.

Grading:

Class participation	5%	
Homework	25%	Due Wednesdays at the beginning of class
Test #1	20%	Monday, September 30, in class
Test #2	20%	Wednesday, October 30, in class
Final exam	30%	Friday, December 13, 5–8pm (F 154)

Attendance and homework: You are expected to attend every lecture, and are strongly encouraged to participate by asking questions when something I say is not clear to you. While I will not take formal attendance, 5% of your final grade will be based on your regular attendance and participation. I may cover some material in lectures that does not appear in the textbook, and the tests and exams will draw on all material covered in lectures and homework.

There will be weekly homework assignments, due each Wednesday at the beginning of class (with the exception of the first week and the two test weeks). **Late homeworks will not be accepted.**

Tests and exams: All tests and exams are closed-book, closed-notes, and no calculators are permitted. **If you miss a test or exam, you will receive a score of zero, and no make-up work will be given.** Exceptions may be made in the case of extreme circumstances, which must be documented. If such circumstances force you to miss a test or exam, you must contact me as soon as possible (*before* the test/exam if at all possible) to notify me of the situation, provide me with documentation, and make alternate arrangements.

Academic honesty and dishonesty: You are expected to follow the Academic Honesty Policy in the Student Handbook. In particular, the following are expected in this course.

- You are permitted and encouraged to work collaboratively with your classmates on homework assignments to discover and understand solutions – working together and teaching each other is one of the best ways to fully learn the material. However, the final write-up of the solutions must be in your own words.
- Academic dishonesty on exams includes but is not limited to copying work and using prohibited materials such as notes, calculators, or cell phones. Cheating on tests or exams will result in disciplinary action both in this course and at the department and college levels.

Special needs: If you have a disability or condition that requires special accomodation, please see me as soon as possible to discuss what steps may be taken.