

MAT1341, *Introduction to Linear Algebra*

syllabus (winter 2016)

Professor: Marc Bagnol, office KED 555

Classroom: MNT 202

Schedule. Lectures are on tuesdays 13:00–14:30 and thursdays 11:30–13:00.

Course content. (prerequisite: Calculus and Vectors MCV4U or MAT1339) Review of complex numbers. The fundamental theorem of algebra. Review of vector and scalar products, projections. Introduction to vector spaces, linear independence, bases; function spaces. Solution of systems of linear equations, matrix algebra, determinants, eigenvalues and eigenvectors. Gram Schmidt, orthogonal projections. Linear transformations, kernel and image, their standard matrices. Applications (e.g. geometry, networks, differential equations).

Office hours (subject to change). Wednesdays 10:00–11:30 in KED B07-A (585 King Edward, basement) or by appointment. In any case, please notify by email or after the class that you are planning to come.

Webpage. The course webpage is <http://www.normalesup.org/~bagnol/teaching/mat1341c>. You will find there all relevant material and news regarding the class.

Textbook. The e-book “Vector Spaces First” by T. Giordano, B. Jessup and M. Nevins (available on *blackboard*) will be the main reference for this class.

Exercises. You will find exercises at the end of each chapter of the textbook, and you can visit the webpage www.courseweb.uottawa.ca/Mat1341A/tests/tests.htm for a stock of past mid-terms, with solutions.

Evaluation. There will be four tests and a final exam. Tests will replace DGD sessions on the following dates: January 25th, February 22nd, March 14th, April 4th. The date and place of the final exam will be determined by the university.

Grading scheme. Your final grade will be computed with the following weighting: 12.5% for each test, 50% for the exams, with the following exceptions:

- If your score on the final exam is less than 45% then your final grade will be your score on the final exam.
- If your score on the final exam is better than any test, the weight of that test will be transferred to the final.
- The weight of any test that you miss will be added to that of the final.

Warnings.

- Cheating entails very harsh penalties, from a grade of F in the course to expulsion from the University.
- Chatting and use of cellphones during classes are obviously not allowed. Make sure your cellphone is turned off during classes.
- Students cannot enter after 20 minutes from the beginning of a test and must present their student cards at all exams.
- There will be no calculators allowed (nor needed) on any test.