Overview: Linear equations over a field. Introduction to vector spaces. Linear maps and their matrix representations. Determinants. Eigenvectors and eigenvalues. Diagonalizable operators. Cayley-Hamilton theorem. Bilinear and quadratic forms. Inner product spaces, orthogonal diagonalization of symmetric matrices. Canonical forms.

Prerequisites: Math 235 - Algebra 1 (which, in turn, had Math 133 - Linear Algebra and Geometry, as a prerequisite.)

Lectures: Mon, Wed, Fri 8:30–9:30 in Burnside 1B45

Instructor: Bogdan Nica   **Office Hours:** Wed, Fri 9:30–11 in Burnside 1131

Email: bogdan.nica@mcgill.ca (use subject "Math 236: ...")

Tutorial: Mon 1:30–3:30 in Burnside 1B24

Assistant: Magid Sabbagh   **Office Hours:** TBA

Email: magid.sabaggh@mail.mcgill.ca (use subject "Math 236: ...")

Texts: Friedberg, Insel, and Spence - *Linear Algebra*, fourth edition (Pearson 2003) and Axler - *Linear Algebra Done Right*, third edition (Springer 2015). Bedside reading: Takahashi and Inoue - *The Manga Guide to Linear Algebra*, any edition.

Grade: 15% Homework, 25% Midterm, 60% Final.

Homework: Five assignments, approximately one every two weeks. To be submitted on the due date, at the beginning of the class. Explain carefully and write neatly. Staple your sheets. Looking up solutions on the internet is strongly discouraged.

Exams: Midterm (1.5 hours) – date and location TBA. Comprehensive final exam (3 hours) – see exam schedule for date and location.

Advice: Attend classes. Showing up is just a part of the process. Come prepared, take good notes, and stay focused. Keep your cell phone away. Ask questions and answer questions. Enjoy!

University Policy: McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures. For more information, see `http://www.mcgill.ca/students/srr/honest`.

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.