# Proposed Syllabus for Math 34600 Elements of Linear Algebra

### Effective Spring 2021

Prerequisites Math 21200 or 21300 or 20300 or departmental permission

3hrs/ 3 credits

Text: *Linear algebra with Applications (Open edition),* by W. Keith Nicholson, Lyryx, 2021 (Revision A).

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| Chapter | Sections | Hours | Comments |
| 1. Systems of Linear Equations  2. Matrix Algebra | 1.1-1.3  2.1-2.5 | 4  6 |  |
| 3. Determinants and their Application | 3.1-3.3, 3.5 | 6 |  |
| 4. Vector geometry |  | omit |  |
| 5. Vector space R^n | 5.1, 5.2, 5.6 | 4 | Section 5.6 is on the least squares approximation. |
| 6. Vector Spaces | 6.1-6.4 | 6 | Make sure students know the definitions and can use them in computations. Some proofs should be required as well. |
| 7. Linear Transformations | 7.1, 7.2 | 4 |  |
| 8. Orthogonality  9. Change of Basis | 8.1, 8.6  9.1 | 5  3 | Section 8.6 is on SVD (singular values decomposition) |

The semester contains 42 hours of instruction. The syllabus above allots a total of 38 hours, leaving 4 hours for exams and review.

Course Supervisor: V.Shpilrain