Mathematics I.

Course Information, Fall Semester 2026-27

For Engineering Students

I kindly ask everyone who is taking this course this semester to carefully read and save this course information for later study.

1. Course Details

Course Title (Code):	Mathematics I. (BAI0064)
Location, Time of Lectures:	D1 lecture hall, Fridays 11:00–14:30
Lecturer:	Gábor Marcell Molnár ✉ molnar.gabor@nye.hu
Office Hours:	Fridays 11:30-12:00, Office B241 (email me in advance)

2. Requirements

Written exam in the exam period. Problems are selected from the type of problems we solve during the semester. The grading system is as follows:

Excellent (5):	85 – 100%
Good (4):	70 – 85%
Satisfactory (3):	55 – 70%
Pass (2):	40 – 55%
Fail (1):	0 – 40%

3. Topics

Combinatorial concepts. Permutation, combination, variation. The concept of a complex number. Algebraic and trigonometric form. Complex numbers (addition, subtraction, multiplication, division, square root) operations. Vectoralgebra. Operations with vectors. Scalar and mixed multiplication of vectors. Matrix salculation. Matrix addition, subtraction, multiplication. Base transformation variant I. and II. Linear programming. Standard and modified normal LP problem. Real number sequences. Monotony and boundedness of sequences. Limits of sequences. Theorems for sequences. Operations with sequences. Series. Convergence of series. Convergence criterias. Absolute and conditional convergence. Operations with series. Geometric series.

4. Recommended Literature

- Riley, Hobson, Bence: Mathematical Methods for Physics and Engineering
- Gilbert Strang: Calculus, course website
- Joel R. Hass, Christopher E. Heil, Maurice D. Weir, Przemyslaw Bogacki: Thomas' Calculus

5. Other Expectations

In all other respects not covered by this course information, the Study and Examination Regulations of Nyíregyháza University and the Code of Ethics of Nyíregyháza University are authoritative.

September 7, 2026.

Dr. Gábor Marcell Molnár