

Numerical mathematics

February 8, 2026

Topics

1. Floating point systems (properties, rounding, errors)
2. Systems of linear equation with error in the right-hand side, matrix norms, condition number.
3. Numerical solution of linear systems (LU,PLU,Cholesky)
4. Least square approximation.
5. Polynomial interpolation (Lagrange, Hermite, spline)
6. Numerical integration.
7. Numerical methods for solving of nonlinear equations and systems.
8. Optimization

Requirements for the practice grade:

- At most 3 absences from the labors. (the practice leaders can set different rules)
- There will a grading test at the end of the study period, and it will consist both numerical/multiple choice/matlab questions.

The grade will be determined by the following evaluation system:

- 1: 0% – 50%
- 2: 50% – 70%
- 3: 70% – 85%
- 4: 85% – 95%

5: 95% – 100%

- The exact date of the test will be announced on the e-learning site.
- The retake will be held in the exam period.
- The sample test collections on the e-learning site, serve as basis for the grading test.
- In the study period at the time of *lectures* there will be some extra tests. The points obtained by these tests can be used to increase your grading test's result.