

Applied mathematics

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. Eigenvalue problems, sparse systems.
8. Numerical solving of nonlinear equations and systems, minimization.
9. Linear programming (graphical and 1,2-phase simplex method) Duality in linear programming, sensitivity analysis. Algorithms for solving transportation and assignment problems.

Requirements for the practice grade:

- You do not have more than 4 absences.
- You have done two tests in the study period. The test will have both computer and "paper and pen" exercises, in a fifty-fifty way. The following evaluation system will be used:
 - 1: 0% – 50%
 - 2: 50% – 60%
 - 3: 60% – 80%
 - 4: 80% – 90%
 - 5: 90% – 100%

Additional info:

- You can retake the tests in the exam period.