**Numerical Methods and Optimization (GEMAK116-Ma)**

**Lecture: 2, Practise 2, Credit: 5**

**Schedule for the first semester of academic year** **2025/26**

Week 1: Introduction, preliminaries: basic concepts of linear algebra and analysis

Week 2: Matrix-factorization. Iterative methods for solving linear systems.

Week 3. Sports Day.

Week 4. Solving nonlinear equations: fixed point method, Newton method.

Week 5. Solving systems of nonlinear equations:

Week 6. Interpolation and the least square method

Week 7. National Holiday.

Week 8. Basic concepts of optimization, classification of optimization problems

Week 9. Solving linear programming problems by the simplex method. Duality and sensitivity analysis.

Week 10. Special problems in linear optimization.

Week 11. Methods of unconstrained optimization.

Week 12. Nonlinear optimization with equality constraints.

Week 13. Nonlinear optimization with inequality constraints.

Week 14. Closing test, evaluation

08 September, 2025

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