

Birzeit University
Department of Mathematics
Math 3361-Optimization and Convexity

Course Outline

Fall 2024/2025

Instructor: Dr. Marwan Aloqeili.

Text Book: Mathematics for Economists, Simon and Blume.

References

- Introduction to Methodes of Optimization, Cooper and Steinberg.
- Methods of Optimization, Walsh.
- Introduction to Nonlinear Optimization: A problem solving Approach, Wismer and Chattergy.
- Optimization Theory with Applications, Pierre.

Course Description

Quadratic forms, optimization under equality and inequality constraints, first order and second order optimality conditions, homogeneous functions, envelope theorem, concave and convex functions, quasiconvex and quasiconcave functions, introduction to dynamic optimization.

Course Material

1. Ch.16: Quadratic Forms
2. Ch.17: Unconstrained Optimization
3. Ch.18: Constrained Optimization I
4. Ch.19: Constrained Optimization II
5. Ch.20: Homogeneous Functions
6. Ch.21: Concave and Quiasiconcave Functions

Grading Policy

50% Two Hour Exams.
10% Quizzes
40% Final Exam.