MATH 378. NONLINEAR OPTIMIZATION

Credits: 3

Offered by: Mathematics and Statistics (Faculty of Science)

This course is not offered this catalogue year.

Description

Optimization terminology. Convexity. First- and second-order optimality conditions for unconstrained problems. Numerical methods for unconstrained optimization: Gradient methods, Newton-type methods, conjugate gradient methods, trust-region methods. Least squares problems (linear + nonlinear). Optimality conditions for smooth constrained optimization problems (KKT theory). Lagrangian duality. Augmented Lagrangian methods. Active-set method for quadratic programming. SQP methods.

- Prerequisites: MATH 223 or MATH 247 or MATH 236 or MATH 251. MATH 248 or MATH 314 or MATH 358. MATH 243 or MATH 255.
- Not open to students who have taken MATH 560.