

MATH 563. HONOURS CONVEX OPTIMIZATION

Credits: 4

Offered by: Mathematics and Statistics (Faculty of Science)

Terms offered: Winter 2026

[View offerings for Winter 2026 in Visual Schedule Builder.](#)

Description

Honours level introduction to convex analysis and convex optimization: Convex sets and functions, subdifferential calculus, conjugate functions, Fenchel duality, proximal calculus. Subgradient methods, proximal-based methods. Conditional gradient method, ADMM. Applications including data classification, network-flow problems, image processing, convex feasibility problems, DC optimization, sparse optimization, and compressed sensing.

- 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. COMP 202 or COMP 204 or COMP 208 or equivalent.
- Restriction: Not open to students who have taken or are taking MATH 463.

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