MATH 467, Fall 2022
(39685R, 39686R-Discussion)

Theory and Computational Methods for Optimization

Instructors

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Special Notes

As we are still in the middle of a global pandemic, we must take special measures to ensure the health and safety of all students and faculty throughout the semester while doing our best to meet educational goals for the class. Here are some of reminders:

- We require all students to follow university's guideline for health and safety.
- In case the instructors of the class are having cold-like symptoms, the class can be switched to online with short notice. Please check your e-mail daily before coming to the class.
- Zoom connection to the class will be available throughout the semester. If any student has cold-like symptoms, please attend class remotely.
- All exams will be nominally given in person. Students with health issues will be given opportunity to take in-person make-up test.

Textbook and Reference

E. K.P. Chong and S.H. Zak, *An Introduction to Optimization*, 4th Ed., Wiley Inter-Science, 2013
S. Boyd and L. Vandenberghe, Convex Optimization, Cambridge University Press, 2004

Grading Policy

Homework: 15%, Project: 10%, Quiz: 20%, Midterm Exam: 25%, Final Exam: 30%.
Final Exam: Wednesday, December 14, 11:00am-1:00pm

Monday, August 22 Introduction and Review	*Wednesday, August 24* Introduction and Review	*Friday, August 26* Set constrained and unconstrained optimization
Monday, August 29 Set constrained and unconstrained optimization	*Wednesday,* August *31* Set constrained and unconstrained optimization	*Friday, September 2* One-dimensional search
Monday, September 5 Labor Day	*Wednesday, September 7* Gradient method	*Friday, September 9* Gradient method
Monday, September 12 Newton's method	*Wednesday, September 14* Newton's methods	*Friday, September 16* Newton's methods
Monday, September 19 Conjugate gradient method	*Wednesday, September 21* Conjugate gradient method	*Friday, September 23* Conjugate gradient method
Monday, September 26 Conjugate gradient method	*Wednesday, September 28* Quasi-Newton Method	*Friday, September 30* Quasi-Newton Method
Monday, October 3 Linear programming	*Wednesday, October 5* Linear programming	*Friday, October 7* Midterm Exam
Monday, October 10 Linear programming	*Wednesday, October 12* Linear programming	*Friday, October 14* Fall Recess
Monday, October 17 Linear programming	*Wednesday, October 19* Simplex Method	*Friday, October 21* Simplex Method
Monday, October 24 Simplex Method	*Wednesday, October 26* Simplex Method	*Friday, October 28* Simplex Method
Monday, October 31 Duality	*Wednesday, November 2* Duality	*Friday, November 4* Duality
Monday, November 7 Constrained optimization	*Wednesday, November 9* Constrained optimization	*Friday, November 11* Constrained optimization
Monday, November 14 Constrained optimization	*Wednesday, November 16* Constrained optimization	*Friday, November 18* Constrained optimization
Monday, November 21 Constrained optimization	*Wednesday, November 23* Thanksgiving	*Friday, November 25* Thanksgiving
Monday, November 28 Convex optimization	*Wednesday, November 30* Convex optimization	*Friday, December 2* Convex optimization

This is a tentative schedule. The contents of lectures may change significantly.