

# Introduction on Convex and Stochastic Optimization

Math 7390 Fall 2021

**Time:** Tuesday and Thursday, 10:30-11:50 AM

**Classroom:** Room 114, PRESCOTT Hall

**Instructor:** Name: Hongchao Zhang      Email: zhc At lsu.edu  
web page : <http://www.math.lsu.edu/~hozhang/Math7390-Fall2021/Math7390.html>

**Office Hours:** Tuesday and Thursday 4:00~5:00 PM, or by email Appointment  
Zoom Meeting ID: 435 490 7449

**Text:** *Convex Optimization by Stephen Boyd and Lieven Vandenberghe*, ISBN 978-0-521-83378-3  
*Convex Analysis and Optimization by Dimitri P. Bertsekas*, ISBN 1-886529-45-0  
*Introductory Lectures on Convex Optimization by Yurii Nesterov*, ISBN 1-4020-7663-7

**Prerequisites:** Linear Algebra, Numerical Linear Algebra, Multivariable Calculus

**Contents:** Depending on the time available, tentative topics include Convex sets, Convex functions, Smooth convex optimization problems, Nonsmooth convex optimization problems, Duality Theory, Stochastic Optimizatoin Algorithms.

**Homework:** Homework will be assigned during the lecture.

**Grade:** Class Attendance: 20%; Homework: 20%; Midterm Project: 25% Final Project: 35%

**Grade Scale:** A-: 90-92 A:93-96 A+:97-100; B-: 80-82 B:83-86 B+:87-89;  
C-: 70-72 C:73-76 C+:77-79; D-: 60-62 D:63-66 D+:67-69; F: less than 60  
Final grades maybe finally scaled, but will only be scaled up.

**Note:** Except for unforeseen reasons, students must obtain advance approval from the instructor for missing any assignments