

EENG 4380
Electric Systems Optimization
Spring 2024
Syllabus

Instructor: Dr. Seyed Mahdi Ghamkhari

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Class Location: ENG 3212

Office Hours: Mondays 4:00 pm to 5:00 pm Faculty Suite – 3100 H

Prerequisites: MATH 3310

Course Description

Convex sets, convex functions, solving convex optimization problems, duality, approximation and fitting.

Textbook

Stephen Boyd and Lieven Vandenberghe, "Convex Optimization", Cambridge University Press, 2009, ISBN: 978-0-521-83378-3

Link to the book

https://stanford.edu/~boyd/cvxbook/bv_cvxbook.pdf

Course Components

Assignments (Homework/Quizzes/Projects): 40%

Midterm Exam: 30%

Final Exam: 30%

Conversion of the numerical grade to letter grade

A: 90 – 100%

B: 80 – 89%

C: 70 – 79%

D: 60 – 69%

F: 0 – 59%

Note: Final grades will be rounded to the nearest whole number. For example, 81.5 or 81.6 would be rounded to 82, but 81.4 would be rounded to 81.

Dates

Last Day to Drop without Creating a Record: 1/31/24

Last Day to Drop or Withdraw: 3/29/24

Guideline

- Students must have the required prerequisites of the course.

- Late submissions to the assignments are not accepted and a grade of zero will be allocated.
- Makeup exams will not be given to students who are absent from the exams.
- Canvas is the platform for course announcements and assignments.
- Announcements are made on Canvas.
- Assignments are posted on Canvas and students' responses to the assignments should be uploaded on Canvas.
- Students are highly recommended to configure their Canvas account so that they could be notified immediately once an announcement or assignment is posted.
- Students should communicate with the instructor using their UTPB Email address.
- Requests for re-grading must be received no later than one week following the return of the assignment.
- Students are encouraged to take notes from the materials presented in the class.

UTPB Student Conduct and Discipline

<https://www.utpb.edu/life-at-utpb/student-services/dean-of-students/student-conduct-and-discipline-utpb-revised-2020-final.pdf>

Attendance

Attendance in class is required.

Students with Disabilities

The University of Texas Permian Basin in compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act provides "reasonable accommodations" to students with disabilities. Only those students, who an instructor has received an official Letter of Accommodation (LOA) sent by the office of ADA for students, will be provided ADA academic accommodations.

ADA Office for Students

MR. Paul Leverington

Address: Mesa Building 4242, 4901 E. University, Odessa, Texas 79762

Phone: 4325524696

Email: ada@utpb.edu

Topics

1. Introduction
2. Convex Sets
3. Convex Functions
4. Convex Optimization Problems
5. Duality
6. Approximation and fitting
7. Algorithms for solving optimization problems

Outline

Week 1: Introduction

Week 2-4: Convex sets

Week 5-7: Convex functions

Week 8: Convex optimization problems

Week 9: Spring break

Week 10: Convex optimization problems

Week 11-12: Duality

Week 13-15: Approximation and fitting

Week 16: Algorithms for solving optimization problems

Disclaimer: The subject matter and dates for the course may evolve slightly and should be considered tentative. Updates will be announced.

Version

01/16/2024