Survey of Optimization Methods
SIE 540/440    Spring Semester 2012

General Information

Instructor:    Feng Pan

Time and location: 12:30 - 13:45, Tuesdays and Thursdays, ENGR 301

Office:    ENGR 312

Office Hours: 14:00 - 15:00, Tuesdays and Thursdays

E-mail:    fpan@email.arizona.edu

Prerequisites: Elementary calculus, matrix algebra, and Java


Objective: The emphasis of this survey class is on the "broadness". Various optimization topics will be discussed, and the discussion is mainly on basic models and solution techniques. The topics will not be covered in-depth. The goal for students is to gain the capability of applying optimization models/methods to their ongoing researches.

Homework: Homework includes programming in Java.

Class Notes: Class notes are posted on D2L. The class notes keep a record of the material covered in the class. Students can use them as summary and guideline for studying the textbooks. The notes are not a substitution for any comprehensive textbooks. There are possibly typos and mistakes in the notes, and the students are encouraged to report those.

Grading Policy

Exam 0    10%
Problem Sets  60%
Final Project  30%
Late problem sets will not be accepted. Students are encouraged to work together in determining how to do the problem sets, but problem sets must be written-up individually. Students must cite their team members as well as any external references. The objective of the final project is to apply optimization techniques to a selected research topic.

**Course Outline**

- Introduction
- Assignment and transportation problems
- Network optimization
- Dynamic programming
- Linear programming
- Integer programming
- Markov decision process
- Heuristics

**Additional Administrative Notes**

If you have a disability or a special need for which you are or may be requesting accommodations, please contact both me and the S.A.L.T. Center (http://www.salt.arizona.edu/) or the Disability Resource Center (http://drc.arizona.edu/) as early as possible in the semester. You must submit appropriate documentation to the instructor before accommodations can be granted.

Students are encouraged to make recommendations to improve the class and my teaching skills.