SIE 440/540: Survey of Optimization Methods

Spring 2014

Course Description: (3 units) Survey of methods including network flows, integer programming, nonlinear programming and dynamic programming. Models development and solution algorithms are covered.

Course Goal: Students are able to develop a working knowledge of different types of optimization methods in these directions: learning solution approaches for linear/integer/dynamic/nonlinear programming and some network optimization problems; developing an appropriate optimization model from a verbal description of a problem; choosing an appropriate solution technique; extract relevant information from the model and solutions.


Time and Location: TuTh 9:30AM-10:45AM, ENGR 301

Instructor: Dr. Neng Fan
   Office: ENGR 312
   Office Hours: TuTh 11:00AM-12:30PM
   Email: nfan@email.arizona.edu

Course Website: We'll be using D2L. All class materials, including HW, lecture notes, supplemental readings, etc, will be distributed from D2L. You must check the announcements in D2L at least twice a week.


References:
Course Outline:


2. Network optimization: modeling, transportation problem, assignment problem, network flows, etc.

3. Integer programming: modeling, branch and bound method, cutting plane method, etc.


5. Dynamic programming

Course Policies:

SIE 440:
   Homework: 5 sets (30%)
   Exams: Midterm exam (30%), Final exam (40%)

SIE 540:
   Homework: 5 sets (20%)
   Exams: Midterm exam (25%), Final exam (35%)
   Project (20%)

Note on Academic Integrity: I expect you to understand and write your own solutions. Also, if you have any references, you must cite them. Late homework will not be accepted.

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.

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