

MA 515 — LINEAR AND COMBINATORIAL OPTIMIZATION
MWF 10:00–10:50 — FB313

COURSE WEBPAGE: www.ms.uky.edu/~lee/ma515fa03/ma515fa03.html

INSTRUCTOR: Carl Lee, 967 POT, 257-1405, lee@ms.uky.edu, www.ms.uky.edu/~lee

OFFICE HOURS: MWF 9:00–9:50 and by appointment, since I realize that some of you will be unable to come at these times. Also, I may need to schedule some additional formal teams for the class to meet, since there are some class days when I will be out of town.

TEXT: Korte and Vygen, *Combinatorial Optimization: Theory and Algorithms*, second edition, Springer, 2002. I will also prepare some course notes.

TOPICS:

Linear Programming

1. Linear inequalities and polyhedra
2. Simplex methods (primal, dual)
3. Revised simplex method
4. Duality and complementary slackness

Combinatorial Optimization

1. Spanning trees
2. Shortest path algorithms
3. Max-flow/min-cut
4. Matchings
5. Matroids

GRADING:

Homework: 50%

Exams: 30%

Final: 20%

HOMEWORK: Usually collected weekly, but some problems may be collected more frequently. Problems are assigned to be solved. Searching the textbooks or the library for solutions is not permitted. On regular assignments you may discuss the problems with other current class members and with me. However, when it comes time for you to write up the solutions, I expect you to do this on your own. If you receive assistance from someone else, include a written acknowledgment. Such an acknowledgment is a professional courtesy and will not affect your grade.

EXAMS: There will be two or three exams and a final exam.

IMPORTANT DATES:

Wednesday, August 27, First day of classes
Monday, September 1, Labor Day holiday—no class
Wednesday, September 3, Last day to add a class
Wednesday, September 17, Last day to drop a class without a grade
Friday, October 3, October break—no class
Saturday–Sunday, October 4–5, Math graduate “cease-fire” weekend
Friday, October 24, Last day to withdraw from a class
Thursday–Friday, November 27–28, Thanksgiving holiday—no class
Friday, December 12, Last day of classes
Monday, December 15, 8:00 a.m., Final exam.

CHEATING AND PLAGIARISM: The *minimum University penalty* for cheating and/or plagiarism is *a grade of E for the entire course*. It’s not worth it and it is damaging to your self-integrity, so don’t do it.