Math 364—Principles of Optimization
Spring 2006
CUE 216; Tu, Th 9:10–10:25 a.m.
Please note that this document has three pages.

Instructor

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Outline of course

The purpose of the course is to provide an introduction to linear optimization. Specifically, model formulation, algorithms, and software will be introduced.

We will use the textbook *Introduction to Mathematical Programming*, Fourth Edition by W. L. Winston and M. Venkataramanan (Thomson—Brooks/Cole, 2003).
Please make sure to purchase a copy with the CD-ROM for LINDO software.

The specific topics to be covered are as follows.

(1) An Introduction to Model Building

(2) Basic Linear Algebra

(3) Introduction to Linear Programming

(4) The Simplex Algorithm

(5) Sensitivity Analysis and Duality

(6) Transportation, Assignment, and Transshipment Problems

(7) Network Models

Grades

The course grades will be based on assignments and a comprehensive final examination weighted as follows:

- assignments—80%
- comprehensive final examination—20%

Please note the following regarding the final examination:

- *blue books are required*
- given in CUE 216 during 10:10 a.m.–12:10 p.m. on Wednesday, May 3, 2006
- open examination (in the sense that your notes, the textbook, assignments and solutions to them, and material posted on the course web page are allowed)
- calculators are allowed

Additional comments

- There is a Math 364 web page on the internet. You may access that by clicking on Math 364 from my home page whose url is indicated above. All handouts, assignments, and solutions to graded and returned assignments will be available on the Math 364 web page.

- Assignments will be posted on the Math 364 web page approximately every other Thursday, and will usually be due *at the beginning of class* on the second Tuesday that follows. No late assignments will be accepted. Assignments turned in on a given Tuesday will be graded and returned in class on the following Tuesday.
  Assignment problems will be mostly from the textbook. I may also assign some problems that are not in the textbook.

- Following are some additional facts that you should keep in mind.

  Make sure to read the sections of the textbook pertinent to the material I cover in class, and to complete the tasks that I assign in class, *prior to attending the next class.* If you have any difficulties whatsoever you should see me immediately. Do not let your difficulties accumulate.

  As you read the textbook please keep in mind that examples worked out in the textbook will rarely be used in class. Instead I shall choose exercises for which there are no answers in the textbook and use them as examples by solving them in class. It will be your responsibility to read the examples worked out in the textbook.

  Problem solving is important in this course. Make sure to start working on the assignments as soon as possible. Again, if you have any difficulties whatsoever, you should see me immediately. Do not leave the solution of assignment problems to the last minute.

Since the course grades are based on assignments and an open final examination, I expect your solutions to both assignments and the final examination to be complete, and of a standard higher than that expected in a course with more frequent homework and limited-time closed-assessments such as midterm examinations and quizzes. By the phrase "higher standard" I mean: (a) clear and logical presentation of solutions (b) demonstration of understanding of the principles behind the solutions and (c) creativity and independence. My grading will reflect this expectation of higher standard.

The problems in the final examination would be related to problems in assignments and problems I solve in class. However, there will be some problems that are nontrivial extensions of such problems. Therefore, it may not be possible to do well in this examination without reading the textbook, completing the tasks assigned in class, doing the assignments, and getting your difficulties resolved *all on a regular basis during the semester.*

Disability Resource Center

Reasonable accommodations are available for students who have a documented disability. Please notify the instructor during the first week of class of any accommodations needed for the course. Late notification may cause the requested accommodations to be unavailable. All accommodations must be approved through the Disability Resource Center (DRC) in Administration Annex 206 (Tel. 335-1566).

Academic Dishonesty

Academic dishonesty or cheating of any kind in the course (including plagiarism) will not be tolerated. Anyone caught cheating will be given a grade of F for the entire course. A letter documenting the incident will be written to the Dean of the College and the Vice President for Student Affairs. Plagiarism is defined as the unauthorized use of the language and the thoughts of another person, and the representation of them as ones own (Random House Webster's College Dictionary, 1991).