OPRE 6201: Introduction to Operations Research  
(Section 581), Summer 2003

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• Course Content and Objective: Operations Research studies analysis and planning of complex systems. This course will focus on the optimization of deterministic systems using Linear Programming. A strong emphasis will be given to model formulation. At the end of the course, students will have the skills to build their own formulations, to critically evaluate the impact of assumptions and to choose an appropriate solution technique.

• Prerequisites: Math 5304 or consent of the instructor.


• Lectures: 6-10 pm Mondays at GR 2.530 starting June 2, 2003.

• Homeworks: There will be 5 homeworks. You may discuss homework problems with others, but you must write up by yourself with the full understanding of what you write. Students handing in identical assignments will be violating university regulations and will not receive credit! Late homeworks are not allowed unless you negotiate with the TA at least one day in advance.

• Midterm: Date to be announced later.

• Final: July 21 during class time.

• Grading: Homeworks 30%, Midterm 30% and Final 40%. 
Course Outline

1. Introduction
   (a) Origins of Operations Research
   (b) Impacts of Operations Research

2. Model Formulation
   (a) Mathematical Models
   (b) Model Components
   (c) Formulation Examples

3. Simplex Solution Technique
   (a) Graphical Method
   (b) Tableau Method
   (c) Algebraic Representation
   (d) Geometric Interpretation

4. Sensitivity Analysis

5. Network Problems
   (a) Transportation and Assignment Problems
   (b) Shortest Path Problem
   (c) Minimum Spanning Tree Problem

6. Integer Programming
   (a) Standard Formulation Techniques
   (b) Formulation Examples