Office: 209CCB
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Office hours: Tuesday 12:30-1:30pm
Thursday 4:40-5:40pm,
or by appointment.
Lecture: Thursday 6:55pm-9:35pm in CCB106

Prerequisites: Prerequisites: LOM 5320 or consent of the instructor for students not in COBA.

Course Description. This course provides a working knowledge of management science techniques. It emphasizes analytical approaches to solving business problems, construction of mathematical models, and manipulation of model variables for managerial decision-making. Topics include mathematical programming (including linear, integer, network and nonlinear models), heuristics, queueing models, and computer simulation.


Software:
EXCEL, QMS and CPLEX

Computer interface for course: mygateway.umsl.edu

Grading:
25% Homework/projects/quizzes
45% Two midterms with weights of 22.5% each
30% Final Exam (comprehensive): Thursday, December 16: 7:45-9:45pm

Occasionally I may contact the class via email using student email addresses in order to relay announcements, homework problems, and/or datasets. Generally, assignments and announcements will be posted on the mygateway.umsl.edu site.

Course notes in the form of Power Point presentations have been posted on the mygateway site. I recommend printing out the presentations using a format of 6 slides per 8.5x11 sheet of paper. During lectures I will be answering questions, going over problems (assigned homework and others), and introducing new material. It is imperative that you READ THE TEXT and review the Power Point presentation BEFORE each class. I will be using EXCEL and other special software regularly in class to assist in solving problems. Please see the paragraph “On your own”.

Academic Honesty: According to the University Standard of Conduct, Section 6.0101, “The Board of Curators recognizes that academic honesty is essential for the intellectual life of the University. Faculty members have a special obligation to expect high standards of academic honesty in all student work. Students have a special obligation to adhere to such standards.” Any student who is caught cheating on any exam or assignment will receive a grade of zero for that assignment or exam. Further, a recommendation may be made to the appropriate university officials that additional formal disciplinary action be taken.
Note on homework assignments: Students may work together on homework assignments, but for homework assignments to be turned in, each student must prepare his/her own answer sheet. Note that this does NOT mean simply “cutting and pasting” someone else’s work and adding your name to it. If copying is detected, a grade of 0 for the assignment will be given and the case will be referred to the Vice Chancellor.

COURSE TOPICS:

_On your own:_
Develop a familiarity with the Excel software package. Initially we will be using the Solver add-in in EXCEL. Later we will utilize the QMS software as well as CPLEX and Crystal Ball.

Topics:
Introduction to Management Science (Ch 1)
Linear Programming (Ch 2, Ch 2 Supplement, Ch 3 and Ch 14)
The Art of Modeling with Spreadsheets (Ch 4)
What-If Analysis for LP (Ch 5 and Ch 5 supplement)
Network Optimization Problems (Ch 6 and Ch 6 supplement)
Using Binary Integer Programming to Deal with Yes or No Decisions (Ch 7 and supplements 1 and 2 for Ch 7)
Nonlinear Programming (Ch 8)
Queueing Models (Ch 11 and Ch 11 supplement)
Computer Simulation: Basic Concepts (Ch 12)
Computer Simulation with Crystal Ball (Ch 13)