Course Outline
Quantitative Analysis for Managers
a/k/a Management Science Methods
MSIS 5303 – Spring 2008

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Class Time: TTh 9:00-10:15, BUS 123

Course Description and Objectives:

The primary objective of this course is to develop skills in quantitative modeling of business problems and opportunities. The main focus of the course exposes students to the readily available optimization analysis tools (such as linear and non-linear programming) that are standard in today's spreadsheets. Emphasis will be placed on understanding how such modeling techniques can be used to **assist** the decision-maker, when they are applicable, and an identification of technique limitations.

Prerequisites: Spreadsheet and algebra proficiency (calculus helpful).

Text: Introduction to Management Science, 9th Edition, Bernard Taylor, Prentice Hall, 2007.

Software: EXCEL Solver, perhaps other add-ins on the student CD.

Grading: The standard 90-80-70-60 scale will be used to identify the final letter grades that the student **earns** (A, B, C, D, and F, respectively). Requirements for letter grades may be lowered as warranted.

Points:			
	Exam 1 – In-class w/take home portion	20%	
	Exam 2, 3 – Take Home	60%	(30%, 30%)
	Homework/In-class activities	20%	

Exams: Three exams will be given throughout the semester. They will typically be model building/problem solving. Exam 1 will be mainly closed book, traditional, in-class format, with 1 problem done outside of class. Exam 2 and Exam 3 will be take-home exams. The final exam will be due during Finals week (details to be provided). The standard MAKE-UP POLICY applies. Note that while the Final exam is not comprehensive, the course material builds upon itself and the student is responsible for continued mastery of the material.

Homework/In-class activities: You will receive a variety of homework assignments throughout the semester. I will ask each of you to form a homework 'study' group. The group should be of size 3 or 4. The purpose of the group is to provide an opportunity to get immediate feedback and help when doing the homework (not that I won't help you!). Most homework assignments will be 'Gold Star', which will be self-reported successes/failures. I of course reserve the right to make individual assignments.

There may be homework assignments that I collect from the groups as well. Typically, these might be of 'exploratory' or 'contest' nature. The punchline – whatever I can do to help students succeed through homework, I will do.

Similarly, I will also have in-class activities from time to time that will be meant to help introduce new concepts, etc. Credit will be given based upon who participates. There are no make-ups for these sporadic activities. You will be excused for job interviews, etc.

The Tentative Course Outline

Week 1 (1/7):	Introduction to Management Science	(Ch.1)
Week 2 (1/14):	Linear Programming – Graphical	(Ch.2)
Week 3 (1/21):	Linear Programming – SA and EXCEL	(Ch.3)
Week 4 (1/28):	Linear Programming Applications – I	(Ch.4)
Week 5 (2/4):	Exam 1	
Week 6 (2/11):	Linear Programming Applications – II	(Ch.4)
Week 7 (2/18):	Transportation and Assignment Models	(Ch.6)
Week 8 (2/25):	Integer Programming	(Ch.5)
Week 9 (3/3):	Network Flow Models	(Ch.7)
Week 10 (3/10):	Exam 2 due around 3/14	
Spring Break (3/17):		
Week 11 (3/24):	Get caught up?	
Week 12 (3/31):	Multicriteria Programming	(Ch.9)
Week 13 (4/7):	More multi-criteria Programming	(Ch.9)
Week 14 (4/14):	Non-Linear Programming	(Ch.10)
Week 15 (4/21):	Decision Analysis and Simulation	(Ch.12, 14)
Week 16 (4/28):	Exam 3 due around 5/2	

NOTE: This is a very tentative outline - I will clearly inform you prior to each exam the materials for which you are responsible. The order may change per my discretion and travel schedule.

Various COURSE POLICIES:

If any member of the class feels that he/she has a disability and needs special accommodations of any nature, contact me. Coming late is better than not coming. Don't cheat – that includes getting assistance on take home exams. Everything else:

http://osu.okstate.edu/acadaffr/aa/syllabusattachment-Spr.htm