FINOPMGT 353 Introduction to Management Science

Department of Finance and Operations Management
Isenberg School of Management, UMass, Amherst
Fall 2011

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Instructor's Office Hours: Tuesdays and Thursdays 12:45-2:00pm.

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TA's Office Hours: Mondays and Wednesdays 1:00-2:30pm.

COURSE DESCRIPTION: You will learn in this course fundamental skills in quantitative decision-making to solve practical problems in business and industrial engineering. In essence, faced with many "reasonable" solutions to a real-life problem, how can a manager build models and use solution techniques to reveal the "best" solution? This course will introduce key concepts in modeling optimization problems, linear programming, network models, and integer programming. Probabilistic models in management science that relate to Markov processes and waiting lines will be also introduced.

TEXT: An Introduction to Management Science by Anderson, Sweeney, Williams, Camm, and Martin, 13th edition.

NOTES:

- We will use Excel to solve the models discussed in the course. We may also get to use some specialized optimization packages.
- You are expected to adhere to the University policy on academic honesty. You must complete all assignments and exams independently.
- Special testing needs should be requested two weeks prior to an exam.

SPARK ONLINE COURSE TOOL: This course will make use of SPARK as an online course tool. Course materials, such as solutions to homework problems, lecture handouts, and other course-related materials will be available on the course site. You will need your NetID (OIT Account user name) and password to access SPARK courses.

https://spark.oit.umass.edu

GRADE: Homework 40%; Midterm I 20%; Midterm II 20%; Final Exam 20%.

EXAMS (60% of grade): There will be three exams, each of which will be closed book, closed notes, in-class exams. You will be given advance notice of when each exam will be held. You may bring

to the exam one 8.5 × 11 sheet with formulas and notes written on it.

HOMEWORK (40% of grade): Homework will consist of questions from the text and supplementary assignments. Each homework assignment is due, in class, on the assigned due date. Please complete all homework on 8.5 × 11 sheets of paper that are stapled together. Use only single sides. Each question/problem should begin on a new page. The work should be neat and clear. **Late homeworks are not accepted.**

TENTATIVE SCHEDULE

Readings and assignments will be specified in class. Table 1 gives a tentative schedule for the course.

Session #	**Topic**	**Chapters**
1	Introduction	Chapter 1
2-4	Introduction to Linear Programming	Chapter 2
5-7	Sensitivity Analysis in Linear Programming	Chapter 3
8-10	Linear Programming Applications in Marketing, Finance, OM	Chapter 4
	MIDTERM I	
11-15	Distribution and Network Models	Chapter 6
16-19	Integer Linear Programming	Chapter 7
	MIDTERM II	
20-22	Waiting Line Models	Chapter 11
23-24	Markov Process	Chapter 16
25	Review Session	
	FINAL EXAM	

Table 1: Tentative course outline