OR 541: Deterministic Models

Fall 2011
ST 1, room 124
Tuesdays 4:30-7:10pm

Professor: Stephen G. Nash
Office: Nguyen Engineering Bldg., room 2202
Phone: 703-993-1678
E-mail: snash@gmu.edu [often the best way to contact me]
Office hours: Tuesday/Thursday 3pm-4pm, and by appointment; via e-mail at other times

All course materials will be posted at mymason.gmu.edu

Textbook: *Operations Research Applications and Algorithms*, Wayne L. Winston (4th edition)
Software: *MPL*, available from www.maximal-usa.com

Objectives: The course focuses on how to develop, solve, and interpret a variety of deterministic optimization models. Students will gain experience in converting a variety of applied problems to optimization models, representing these models in a sophisticated modeling language, solving these models with a variety of algorithms and software, and interpreting the results using sensitivity analysis and other approaches.

Tentative Course Schedule

Date	*Topic*	*Chapters*
8/30	Introduction; Linear Programming	1, 3.1-3.2
9/6	Linear Programming	3.3-3.9
9/13	The Simplex Method	4.1-4.2, 4.5
9/20	The Simplex Method	4.6-4.8, 4.12
9/27	Sensitivity Analysis & Duality	6.1-6.3
10/4	Sensitivity Analysis & Duality	6.5-6.9
10/11	[no class: Columbus Day break]	
10/18	Midterm; Networks (intro)	
10/25	Transportation Problem	7.1
11/1	Transportation Problem; Networks	7.2, 8.1-8.2
11/8	Networks; Integer Programming	8.3, 8.6, 9.1-9.2
11/15	Integer Programming	9.3, 9.5
11/22	Integer Programming	9.7, 11.1-11.3
11/29	Nonlinear Programming	11.1-11.4, 11.6
12/6	Nonlinear Programming	11.8-10
12/13	*Final Exam (4:30-7:15pm)*	

Grading:

30%	Homework
20%	Midterm exam
15%	Computational project
35%	Final exam

Policies

Coursework & Grading

Unless otherwise indicated, you are expected to work individually on homework assignments, projects, and exams. Late submissions are not accepted. You can submit homework directly to me (in class or at my office), through the SEOR department office, via email, via fax (703-993-1521), and at mymason.gmu.edu.

Academic Integrity

GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

GMU Email Accounts

Students must use their Mason email accounts to receive important University information, including messages related to this class. See http://masonlive.gmu.edu for more information.

Office of Disability Services

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS. http://ods.gmu.edu

University Policies

The University Catalog, http://catalog.gmu.edu, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at http://universitypolicy.gmu.edu/. All members of the university community are responsible for knowing and following established policies.