

ORMATH 441: Deterministic Operations Research

Fall 2016

Innovation Hall 132

Tuesday/Thursday 3:00 pm- 4:15 pm

Instructor: Chien-Chung (Edward) Huang

Office: Nguyen Engineering Bldg., room 2238

Phone: 703-993-1672

E-mail: chuang10@gmu.edu

Office hours: Tuesday 11 am – 12 pm, and by appointment; via e-mail at other times

Prerequisites: MATH 203.

TA: TBA

TA E-mail: TBA

TA Office: Nguyen Engineering Bldg., room 2216

TA Office hours: TBA

Textbook: *Operations Research Applications and Algorithms*, Wayne L. Winston (4th edition)

Software: *MPL*, available from www.maximal-usa.com

Course objectives: The course focuses on modeling, developing, and solving a variety of deterministic optimization problems. 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. All course materials will be posted at Blackboard.

Grading:

20% Homework

20% Midterm exam

20% Computational project

15% In-Class Assignments

25% Final exam

Coursework & Grading Policies

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 via email at chuang10@gmu.edu.

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.

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.

Tentative Course Schedule

Date	Topic	Chapters
Aug 30	Introduction; Linear Programming	1, 3.1-3.2
Sep 1		
Sep 6		
Sep 8	Linear Programming	3.3-3.9
Sep 13	The Simplex Method	4.1-4.2, 4.5
Sep 15		
Sep 20		4.6-4.8, 4.12
Sep 22		
Sep 27	Sensitivity Analysis & Duality	6.1-6.3
Sep 29	<i>Midterm 1</i>	
Oct 4	Sensitivity Analysis & Duality	6.1-6.3
Oct 6		
Oct 11	<u>Columbus Day; No Class</u>	
Oct 13	Sensitivity Analysis & Duality	6.5-6.9
Oct 18		
Oct 20	MPL Formulations	
Oct 25	Transportation Problem	7.1,7.2
Oct 27		
Nov 1		
Nov 3	Networks	8.1-8.2
Nov 8	<i>Midterm 2</i>	
Nov 10	Networks	8.3, 8.6
Nov 15		
Nov 17		
Nov 22	Integer Programming	9.1-9.3
Nov 24	<u>Thanksgiving; No Class</u>	
Nov 29	Integer Programming	9.5, 9.7
Dec 1		
Dec 6	Nonlinear Programming	11.1-11.3
Dec 8		
Dec 15	<i>Final Exam (1:30 pm – 4:15 pm)</i>	All

Academic Integrity

GMU is an Honor Code university; please see the Office for Academic Integrity 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.