OR/MATH 441: Deterministic Operations Research

Spring 2018
Planetary Hall 212
Friday 10:30 am- 1:10 pm

Instructor: Chien-Chung (Edward) Huang
Office: Nguyen Engineering Bldg., room 2238
Phone: 703-993-1672
E-mail: chuang10@gmu.edu
Office hours: Wednesday 10 am – 11 am, and by appointment; via e-mail at other times
Prerequisites: MATH 203.

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
Jan 26	Introduction; Linear Programming	1, 3.1-3.2
Feb 2	Linear Programming	3.3-3.9
Feb 9	The Simplex Method	4.1-4.2, 4.5
Feb 16	The Simplex Method	4.6-4.8, 4.12
Feb 23	Sensitivity Analysis & Duality	6.1-6.3
Mar 2	Sensitivity Analysis & Duality	6.5-6.9
Mar 9	MPL Formulations	
Mar 16	Spring Break; No Class	
Mar 23	*Midterm*	
Mar 30	Transportation Problem	7.1
Apr 6	Transportation Problem; Networks	7.2, 8.1-8.2
Apr 13	Networks; Integer Programming	8.3, 8.6, 9.1-9.2
Apr 20	SEOR Senior Design; No Class	
Apr 27	Integer Programming	9.3, 9.5
May 4	Integer Programming	9.7, 11.1-11.3
May 11	*Final Exam (10:30 am – 1:15 pm)*	

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.